

Revenue management, reservation and revenue accounting systems have increased with sophistication and accessibility. IT & software providers now offer systems that provide faster and superior quality information, while also offering airlines outsourced, pay-as-you-go services.

Upgrading revenue management & reservation systems

The simplicity and progress of reservation, revenue management (RM) and other systems has allowed low-cost carriers (LCCs) to overcome the technical advantages of their incumbent competitors. Technical issues, however, are not enough to explain how the LCCs have achieved an economic advantage. This is reflected by the fact that most airlines are attempting to lower unit costs and transform themselves into a low-cost model. The LCCs' advantages also come from their intensive employment of application service providers (ASP) and outsourcing various IT services.

Technology & cost issues

When airlines select RM software, they often fail to focus on how it will be used. To ensure maximum benefits, they need to establish and provide support for a group of staff who interact on an on-going basis, and become a 'community of practice', setting up procedures that are the key to having an optimal yield mix that will result in maximum revenue for each flight.

The RM system does not provide the whole answer. Airlines must become more systematic in their management of knowledge if they hope to be able to extract meaningful information to gain a competitive advantage. Airlines have to react quickly, since the ground rules of their business environment are changing daily. They find it hard to abandon long-established procedures that may have led to excellent results in the past. The complexity of information technology (IT) and the necessary specialisation of

the staff, however, have changed airlines' attitudes towards building an in-house IT architecture. They have now begun to consider ASP and outsourcing seriously.

"There are a number of reasons for outsourcing, but the two main ones are moving from a fixed cost to a variable cost processing model, and hiring companies that are domain specialists," explains Robert Kane, product strategy manager at Mercator. "Using revenue accounting as an example, a mid-sized airline might employ 200 people in its revenue accounting department, and if passenger numbers fall for any reason the carrier still has to carry that fixed cost. By outsourcing, the carrier pays for each coupon processed, so processing costs drop if passenger numbers drop. There are many companies that now specialise in carrying out back-office processes for airlines, and which continually invest in improving their service. It therefore makes sense to use their expertise for non-core functions. The amount that can be saved varies depending on the process and where the airline is located, but some operators have saved up to 20%."

Outsourcing

"There are five primary reasons why an airline should consider outsourcing, and three of these are financial," says Nejb Ben-Khedir, president and managing partner of the aviation consulting practice at Sabre Airline Solutions. "The first, non-financial, reason why some airlines consider outsourcing is because they lack the staff with the necessary skills to perform the function in house, and to acquire them

would be costly or time-prohibitive.

"The second reason for outsourcing is that the third-party service providers are able to provide the function at a lower unit cost than the airline, thereby improving the airline's profitability. This is especially true in areas like maintenance functions, where a large maintenance provider that serves several airlines is able to provide expensive items, such as spares, and consumable and rotatable parts, at a much lower cost.

"The third reason is that airlines can convert a capital expenditure to an operating expenditure. This is often much better for their financial performance because of limited availability of capital constraints and the high cost of capital. This is seen with IT outsourcing. Airlines are often faced with a substantial capital expenditure for desktop units, servers, mainframe computers, IT infrastructure, networking and communication devices. By outsourcing IT functions, the airline avoids the capital outlay and pays the operating expense on a usage basis.

"The fourth reason for outsourcing is to convert a fixed expenditure into a variable, performance-based one," continues Ben-Khedir. "For example, many outsourcing agreements relate to passengers boarded, flight hours, block hours and similar measures. If the number of passengers or flights falls, so does the airline's bill. Airlines are therefore better able to control costs under outsourcing deals. Finally, and importantly, outsourcing often brings a one-time cash benefit to the airline. For example, when an airline outsources its maintenance services for the first time, it typically sells the spares to the



outsourcing provider. The same approach is seen when the airline outsources its revenue-related IT or ground handling functions. The outsourcing provider typically pays cash to the airline to obtain the assets and its manpower resources.

“Most of the reasons for outsourcing are therefore directly related to improving the financial performance of the airline,” concludes Ben-Khedir. “LCCs are especially sensitive to cost containment, which is why they often start with a high level of outsourcing.”

Air Luxor's triumph

Air Luxor, the established charter and executive jet airline based in Lisbon, Portugal, started scheduled services in 2000 and targeted steep growth. It now flies to four European destinations and continues to grow quickly. The airline wished to outsource the new task of Passenger Revenue Accounting (PRA) to minimise overheads, while performing the necessary interline functions and obtaining up-to-date and accurate management information.

Air Luxor needed production of revenue information, interline billing and account postings for the general ledger. This was to be achieved without the coupons leaving the airline's offices, or the airline having to take on large numbers of staff to cope with the projected growth, and with a minimum involvement for final quality checks by the airline's staff. Special revenue reports are also required by the Portuguese government. The airline was prepared to subscribe to all available automated data sources, so that nearly all its sales data would be available electronically.

Kale uses its Managed Process

Services Centre (Kale MPS™) in Mumbai, India, to perform the complete set of PRA functions for Air Luxor. Kale uses its software product, REVERA™, and incorporates one of the most powerful pro-ration systems in the world, APEX™. REVERA also includes a powerful Business Intelligence system, PRISM, to provide the customer with the facility to use the data available to take informed, proactive decisions. REVERA™ accepts data from BSP HOTs and the sales data from Air Luxor's reservations system.

Kale's subcontractor installed a system to image the coupons and other documents in Lisbon and load them to a private website for retrieval by Kale's MPS. A broad level process flow diagram is included at the end of the revenue account.

Air Luxor chose REVERA for its comprehensive functionality and its ability to give it the revenue and financial control information that it needs to run its business. Being a start-up airline in scheduled services, Air Luxor also wanted to outsource the work, and imaging made this possible by eliminating the risk of losing the revenue account. Air Luxor also opted for the pay-as-you-go model, with Kale sharing the risk and providing the services as per pre-defined service level agreements, in preference to a large up-front licence payment.

Revenue is declared 15 working days after the end of each month. Kale supplies a complete copy of the cumulative PRA coupon-level database each month, which Air Luxor analyses using an extremely powerful data mining system, PRISM, supplied as part of the REVERA package. Kale also supplies coupon-level account postings ready to

Portuguese carrier Air Luxor selected Kale's Revera revenue accounting system. This allows the carrier to assess revenue from each flight within 15 days after the end of each month.

go into the general ledger, and standard reports like Route Revenue. Kale monitors missing input, such as flight manifests, to maximise the accuracy of the revenue data, and achieves better than 0.1% reconciliation of passenger numbers. Day-to-day management of the contract is performed by Kale's UK Management Centre in London. The system was up and running within three months of contract signature.

Technologies available

“Ten years ago LCC airlines could not get a computer reservation system (CRS), RM, Accounting Direct Control System and other ancillary systems from a single source. Now there is one supplier that supplies 90% of LCCs' needs,” says Paul Rose, product manager for revenue management & revenue integrity at SITA. “An LCC could not previously keep all its costs down using a traditional software solution, nor have a system that helped simplify its business processes.”

Sabre Airline Solutions provides outsourcing for CRSs with its SabreSonic product suite. This serves more than 90 airlines, including the LCC champion Southwest Airlines. Sabre also provides an industry-leading Internet Booking Engine (IBE) with its SabreSonic Web application, and departure control systems, electronic ticketing functions and many types of data services. Most of Sabre Airline Solutions' portfolio of applications can also be provided via its eMergo ASP model.

This means that literally any airline technology function can be outsourced by Sabre Airline Solutions in an inexpensive and fully-functional manner available to the end-user over the internet.

Sabre also provides many different bureau services to airlines through its consulting organisation, including: flight scheduling; pricing; RM; crew planning; fuel consumption control; maintenance planning; and similar 'core' and 'non-core' functions. Many of the services provided by Sabre were specifically designed for LCCs, but in this era of cost containment, many legacy carriers are now also employing these same solutions.

Sabre Holdings is the only company in the industry that can provide a full range of outsourcing services to any type of airline.



Maintrack, supplied over the web as a hosted ASP solution, is already in use by airlines around the world. The product, Aviator, from Resource and Revenue Management in Australia, integrates with Maintrack's 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 low-cost airline market and is extremely easy to use. It can also be phased into an airline's operation. The more sophisticated automated optimisation mathematics can be activated after some experience and quality data have been gained by the airline.

Behind the software Maintrack delivers a 'hand-holding' service for analysts to tune the forecasting methodologies and tailor the application to suit each client. Normal passenger reservations activity updates records held in the reservations system, such as ReservaWeb or OpenSkies from Navitaire. Each night inventory data from the reservation system will update the Aviator RM database. This process is automated so that Aviator is up to date when flight analysts start work each day.

Aviator provides a suite of reports and graphs that are primarily designed to help reservations controllers increase revenue on flights. They can also provide 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/or offpoint, date range specifications, segment or leg displays, cabin or class displays, and 'as at' dates. Forecasting

logic is critical to RM success. A common problem with highly complex forecasting models is that although they may be mathematically perfect, they do not produce forecasts that flight analysts want to use. These models are often so complex that flight analysts are unable to understand or properly modify them, and often ignore the forecasts altogether, controlling flights manually when forecasts appear to be inaccurate.

Aviator forecasting is designed to be used. Forecasting concepts are presented 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 the current or previous year, and complex unconstraining logic is presented in an easy-to-modify graphical view. Analysts can, if they wish, use special forecasting options on specific flights and destinations. Aviator can forecast traffic and revenues for new routes with ease, as well as cope with schedule changes and supplementary flights. Market-place activity, such as added competitor capacity, can be quickly factored in using Aviator's forecast modification tools. Aviator's core forecasting logic has been in use since 1998 and has proven to be robust, powerful and easy to work with. These forecasts are used by Aviator's optimiser to provide inventory recommendations that maximise revenues.

Rex, a start-up airline in Australia, is an Aviator user, and while all its operational improvements cannot be attributed solely to its utilisation of the software, the system has undoubtedly contributed to the impressive results that Rex has just released for the half year to December 2005. Overall revenue

Most IT & software providers now offer airlines pay-as-you-go systems that allow them to avoid large investments. This has allowed low-cost carriers to overcome the technological advantages held by incumbent airlines.

increased by 18% to Aus\$78 million (\$58 million), with net profits up over 200% to Aus\$9.3 million (\$7 million). These improvements are attributed directly to improved yield and cost efficiencies. Air Pacific, an LCC based in Fiji, also uses Aviator, and released impressive results at the same time. Revenue increased by 4.5% in the face of heavy competition on its main routes in 2005.

Network carriers & LCCs

"Traditional network carriers often have legacy systems, and have invested substantial capital for in-house solutions," says Ben-Khedir. "This is especially true for network carriers that are also owned by governments. The governments must protect not only the legacy capital investments in IT, but also the employment of the IT staff.

"This is not the case for LCCs. LCCs tend to use smart applications and they will most often prefer a technology solution to the addition of manpower," continues Ben-Khedir. "Manpower is a long-term investment that is subject to increased costs, while technology generally reduces in cost as it ages. Similarly, IT applications for LCCs tend to be simpler, less functional, faster and cheaper. LCCs also do not require extra 'bells and whistles' on their applications. Instead, they want cheap and cheerful applications that are fast, and easy to use and maintain. LCCs will most often take an IT application without customisation. This has three main benefits: 1) no customisation means lower cost; 2) no customisation means that applications can be updated more easily and with less downtime; and 3) using standard applications reduces the costs associated with finding, training and maintaining staff that know how to use the systems.

LCCs have therefore compromised on their functionality in order to adhere to industry standards, but this has resulted in lower costs and greater mobility."

Charges

There are many ways in which fees can be paid for using Sabre's service. The traditional manner for reservations and departure control systems is per passenger boarded. This ensures that the

Outsourcing IT systems for revenue-related tasks has allowed all airlines to reduce costs, investment and staff numbers. Other benefits are reduced reliance on in-house systems.

airline only pays for productive use. That is, an airline will only pay for services for each passenger boarded, from which it receives revenue. In addition, many eMergo systems are paid for on a monthly fixed fee, or on a transaction basis. Sabre Airline Solutions' consulting group will even provide outsourced services on a 'gain share' approach, by which the airline pays a portion of its improved financial performance for the outsourced service on a 'no gain, no fee' basis.

Maintrack also charges airline customers only on a pay-as-you-use basis. Charges vary based upon volume, but can be as low as around \$0.07 per boarded passenger segment. The on-going running costs are hard to gauge, but are about double the ASP-type model. There are two costs for running a yield management system: one-off set-up costs; and on-going running costs. Traditionally, yield management systems come as part of unwieldy, expensive reservation systems and can cost \$200,000 to get up and running. They cannot be split off separately.

Other smaller stand-alone systems may charge about \$50,000-70,000 to set up, but once the cost of hardware, IT staff, databases and so on is added, the total can exceed \$100,000. With the ASP model, set-up costs can be as little as \$15,000 with no other hidden internal costs.

The on-going running costs for in-house or legacy systems are difficult to quantify, since there are so many hidden costs that many organisations never account for. These include IT staff costs, or upgrading servers and databases every two or three years. This usually means that the yield management running costs can be double or more those of the ASP costs. ASP monthly costs are also known and can be forecast, thereby reducing the risk of an unexpected bill for hidden expenses.

Risks and limitations

"From an airline's perspective, the primary concern related to outsourcing is a perceived loss of control," says Ben-Khedir. "For example, if an airline outsources its catering functions and the catering company goes on strike, the



airline is adversely affected even if it is not responsible for the event. This is why airlines keep several 'core' functions even if they could otherwise be outsourced. Also, owners or shareholders who benefit from the original outsourcing may punish management if the loss of control has a negative impact on the financial performance of the airline. The best way to minimise the risk of outsourcing, from the airline's point of view, is to insist on a strong Service Level Agreement (SLA). By having a strong SLA, the airline has the 'fence' to ensure that its outsourcing partner is a 'good neighbour'. The SLA should contain severe penalties for non-performance and should also ensure that standard practices like fault tolerance and disaster recovery are inherent within the agreements. It is always better for the airline to outsource to a large and strong IT provider."

Rose at SITA adds that: "Generally ASPs or hosted services vary in their appeal, depending on which areas of an airline they are designed to service. In the case of RM, there has so far been little evidence that most airlines wish to use an ASP model instead of acquiring a traditional licensed solution, with the software and database being held locally at the airline's own headquarters. This may come from a fear of exporting sensitive data outside the normal confines of the airline, although this may be misguided. From a supplier's viewpoint, many require stronger evidence of a groundswell in ASP demand for their RM system solutions before investing heavily in the hardware, technology and additional resources to supply an ASP alternative.

"The majority of the world's airlines still use licensed RM systems and I do not

see this changing in the short term," continues Rose. "Many LCCs have fewer and simpler data that are more dynamic than a traditional carrier's. This is why they are perhaps less sensitive to the data being stored off-site, especially given that web fares are easily accessed over the web by anyone, unlike a traditional carrier's myriad complex fares which are divorced from availability. A limitation for outsourcing the service is that, with some LCCs outgrowing their initial providers due to scalability challenges, or wishing to upgrade certain components in their RM systems, such as forecasting or origin and destination (O&D) functionality versus point-to-point segment or leg RM, the airlines need to build their own in-house IT architecture. This has certainly been the case at Southwest, which uses a sophisticated RM system. More recently, several carriers using the leading LCC end-to-end business solution have expressed a desire to upgrade just their RM capabilities via a more sophisticated RM system."

Summary

ASP and outsourcing have brought considerable benefits to LCCs, including: quality service; cost reduction; little investment; and reducing reliance on in-house systems and specialised staff. Although the mainstream continues to keep core capability, such as RM, inside airlines, some IT providers have provided a basket of services and some airlines have begun to accept it. The risks derived from the service are calculated and easy to control. The collaboration between airlines and IT is providing a new opportunity for airlines to lower their cost while improving efficiency. **AC**