Identifying routes with sufficient traffic volume and revenue generating capacity is the first and most important challenge facing any start-up airline. There are various systems to assist in this process, but start-up carriers then need to consider pricing, distribution, ticketing & revenue accounting.

Selecting RM systems for start-up airlines

As the industry recovers, new start-up airlines are being launched, yet history has demonstrated that most do not survive their first two years operation. Those start-ups that have survived and succeeded have done so with the assistance of modern IT systems.

Start-ups can be divided into two groups: low-cost carriers, which are now seen in large numbers in Europe, mainland China, Hong Kong and Southeast Asia; and airlines aimed at corporate customers, such as Eos and Maxjet, which both provide a business-class service between London Stansted and New York.

Start-up airlines' fragilities

Start-up airlines always face two inherent weaknesses: weak corporate finance; and a lack of revenue-generating capacity. "The biggest risk facing a start-up carrier is cash flow. Expenses are very high, and revenue might be lower than expected since incumbent airlines usually compete vigorously with any new carrier in the market," says Christophe Ritter, consulting partner, Sabre Airline Solutions.

To launch its business, jetBlue collected $130 million in capital funding, the highest amount of capital a start-up airline has ever had, from investors such as Weston Presidio Capital, George Soros and Chase Capital. In its first year of operations, jetBlue reported a financial loss of $21.3 million resulting from a revenue of $104.6 million. This clearly illustrated that jetBlue had to get into a position of positive cash flow, otherwise it would burn up the start-up capital in a short space of time.

Malaysian low-cost start-up Air Asia has a similar story. Air Asia reported losses of RM 31.3 million in 2000 and RM 19.1 million in 2001. As of June 30, 2002, when Air Asia issued its first annual financial report since its change of ownership, it recorded a further financial loss of RM 1.6 million with only RM 13.7 million cash at hand, which was RM 20.8 million lower than it had in 2001. These financial data indicated that if Air Asia could not generate sufficient revenue as quickly as possible, it would be driven out of business in one year.

Two Singapore start-up airlines, Valuair and Jetstar Asia, which are going to merge into an airline named Orange Star controlled by Qantas, are typical of failed start-up airlines. In its first year of operation, Jetstar Asia incurred a financial loss of about $28 million. Valuair's financial loss has not been disclosed, but is thought to be similar. The first year's financial loss was within expectations, but the two airlines kept dropping routes in their first year's operation due to weak revenue. Valuair dropped its services to Hong Kong, Bangkok and China, blaming restrictions of traffic rights, but the main reason is that it misconceived the traffic potential and was incapable of forecasting revenue that could be generated from these routes.

In general, 65% of a low-cost airline's cost advantage over a legacy carrier is the result of savings in scheduling, operational processes and ticket distribution systems. Apart from proper fleet planning and collecting sufficient capital, growing a fledgling airline involves identifying suitable routes, getting pricing right, distributing products to potential consumers, stimulating demand, generating revenue, and eventually realising a positive cash flow and profit.

No successful start-up airlines can be an exception to this formula, and start-ups that have failed have done so because they were unable to implement the revenue generating process successfully. Behind all successful start-ups stand various software solutions.

"Easily accessible information about current booking activity to provide reliable demand forecasts is critical for a start-up airline. Airlines also require an easy and self-explaining Graphical User Interface (GUI)," says Ulrike Gall, senior vice president of Airline Management Solutions Lufthansa Systems.

"In today's market place, many start-up airlines are using simple pricing & revenue optimisation systems that are simple with limited capabilities. These are sold at low prices, often bundled or included with reservation or other operational systems. They provide the airline with the bare minimum functionality for controlling certain price and revenue optimisation functions. It's a bit like comparing a spreadsheet software with 50 built-in functions versus another that has 500 built-in functions," says Dave Bradford, global account executive of airline sector, at Manugistics.

Identifying routes and pricing

A challenge facing a start-up airline is that it has no historic records of traffic volumes, passenger behaviour and revenue streams on routes where it wants to fly. A start-up usually has two approaches to settling this problem. The first way is trial and error with the assistance of sophisticated software.

"Sabre Airline Solutions provides a network planning system that evaluates the potential route demand and average fare. The first step involves evaluating the potential market opportunities for a start-up carrier. We have models that stimulate the current demand while a carrier is growing, and which can calculate the future average fare. Our system then simulates schedule parameters such as capacity and frequencies. The best option is to stimulate new demand with aggressive prices. Therefore the best way to enhance the cash flow position of a start-up airline is to have an aggressive pricing policy until load factors are high enough to raise fares," says Ritter.

"Our revenue management system

Identifying routes with sufficient passenger volumes and revenue generating capacity is the biggest challenge facing any start-up carrier. This not only requires systems for accurate network forecasting, but also simple and easy to use revenue management systems.

stores the information about every booking, and allows for flexible reports to be retrieved, either on a very detailed level or as a general overview," says Gall. "This allows the management to focus on the overall situation, while the revenue management team can perform detailed analysis of specific flights. The system provides the start-up airline with the capability to maximise its revenue by keeping seats available for customers that have high demand levels. At the same time more price-sensitive but flexible customers will select low demand flights at a preferable price, which supports winning market share and stimulating demand."

"Many of a start-up airline's pricing decisions on new routes are based on information from similar markets where other airlines operate, or on their own costs and their competitors' fares," says Bradford. "The Manugistics solution allows an airline to forecast a new market that has no booking history. It does this using some default booking curves, as well as analysing advance bookings on the new route. This of course means the airline has to commit itself to offering the service before it knows what the demand will be. When an airline then adds other new markets, it can use data from its first new market as a surrogate or proxy market for data until the new market has developed enough of its own data. Airlines also have a variety of economic parameters they can use when commercial data do not exist."

Manugistics has pricing and revenue optimisation solutions designed for traditional and start-up business models. These are used by an airline's marketing business units to determine its optimal contract pricing, promotional pricing, group pricing, and direct consumer level pricing. These solutions have demand forecasting capabilities that can then be calibrated to determine those fares and seat capacities that produce the 'best fit'.

"Today's start-ups file one-way fares with few or no restrictions. The number of fare classes is limited," says Bradford. "If traditional airline forecasting pricing and price allocation techniques are used, then more revenue loss than gain is likely. A start-up airline will have limited demand data from buyers' purchasing behaviour. This will be used to forecast demand, but traditional forecasting methods should not be used because this will produce the wrong results. Unfortunately, this is much easier said than done, and many airlines today are using solutions that do not match their business. Airlines have no idea if their systems are generating a positive or negative revenue contribution," says Bradford.

Another method used by jetBlue has proven efficient and effective. When considering new markets, jetBlue focuses on point-to-point services to large metropolitan areas with high average fares or highly-travelled markets that are under-served. It determines which markets to select by analysing publicly available data from the USA's Department of Transport that shows the historical number of passengers, capacities and average fares over time in all US city-pair markets.

These data are analysed for jetBlue by Navitaire, the provider of the Open Sky System. jetBlue can then see how the same or comparable markets have behaved in the past when fares were increased or lowered, and forecast the level of demand in a particular market that will result from the introduction of its service and low prices, as well as the anticipated reaction of existing airlines in the market. Guided by the outcome of the analysis, jetBlue chose New York City as its principal operation base.

Revenue management

For a start-up, identifying a route and pricing are two sides of the same coin. Without proper pricing, the route cannot be viable. "If you are a start-up airline following the traditional pricing model, using rules and restrictions to build up fences between customer segments, the proven optimisation method used for many years is more than sufficient. However, if you start an airline that follows the low-fare business model of one-way fares with few or no restrictions, then the low-cost revenue management model needs to be adapted," says Gall.

"Traditional revenue management systems are built on the assumption that the demand in a specific booking class is independent from the demand in any other booking class," continues Gall. "This assumption is not valid in the low-fare business model, where demand in an expensive booking class will only be generated if cheaper booking classes are no longer available. New forecast models therefore had to be developed that incorporate the consumer's willingness to pay, and predict the demand in relation to the requested price.

"The ProfitLine/Yield Rembrandt system is especially designed for start-up airlines. It allows for immediate access to the complete booking information stored in the inventory system and only needs three months' of historical data to determine accurate forecasts. Reliable forecasts are a prerequisite for the optimisation of control settings of any flight. With this short learning period a return on investment for the revenue management system can be expected within months," says Gall.

Air Asia has a multiple fare structure of 12 fare tiers per route. Its revenue management system is managed with software provided by Navitaire's OpenSkies. The system facilitates pricing adjustments to be made on the basis of the lowest price consistent with demand and profitable operations. The highest fare class will be sold close to the day of

jetBlue has invested heavily in automation, and introduced paperless cockpit systems that have allowed it to reduce its turnaround time by 15 minutes.

travel, when time sensitivity outweighs price sensitivity. Such seats are sold at about 80% of the published fares offered by full-service airlines. Its average fares decreased from RM207 in 2000 to RM131 in 2004, while load factor increased from 62% to 77% in the same period.

Marketing and distribution

For a start-up airline, marketing and distributing its products to the right customers is vital, especially given that it has no existing distribution channel. In the past, start-up airlines relied on travel agents and GDS providers, but they can now bypass GDS systems because they use their own website portals.

"An airline will need to store inventory and schedules first in order to distribute to the outside world. Once this is established, the airline will need to decide whether it wants to distribute through the traditional travel agents and consumers directly, or to consumers directly only via its website," explains Dr Anselm Eggert, senior vice president of passenger airline solutions at Lufthansa Systems. "The typical cost of agency distribution is $12 per booking, while a consumer booking directly will roughly cost an airline $2 per booking."

Thanks to the development of the Internet, start-up airlines can easily overcome the hurdles of marketing and distributing their inventory.

"Options for issuing tickets depend on whether the airline structure is low-cost, regional or full-service, where their primary market is, and whether they have printed tickets or e-tickets," continues Eggert. "A full-service airline that wishes to operate with interline partners will need to implement ticketing in accordance with IATA standards, which uses paper tickets in TAT or ATB2 industry format, but should also include e-tickets. E-ticketing is the best solution for an airline that needs or has interlining. The most cost-effective solution is to be ticketless, and this is used by most of the low-cost carriers that have no interlining requirements. The costs for each type of ticketing depend on the complexity of the airline processes (for example, how many interline partners need to be supported) and the type of ticketing options the airline decides to implement. The percentage of tickets sold through each distribution channel varies from airline to airline."

jetBlue used the Internet to distribute its tickets at the start of its operation. To attract customers via its website, jetBlue ran promotions that provided discounts to customers who booked reservation on its website. In 2001 92.6% of its passengers booked via its website or reservations department, channels that avoid travel agents and their average commission of $14 per ticket. jetBlue therefore set up reservations agents in Utah, where work-at-home operators use voice over IP (VoIP) lines, which result in an average cost of $4.50 per ticket. There is also a big Internet reservations promotion on JetBlue.com, which only costs 50 cents per booking.

The Internet is not used as widely in the Asia Pacific as it is in Europe or North America. For Air Asia, however, the Internet is the cheapest way to market and distribute its tickets. To encourage Internet reservations, Air Asia's lowest fares are only available through its website. Internet reservations increased from about 5% of its total in May 2002, when this carrier's website was launched, to about 50% in August 2004. Air Asia also set up a nationwide call centre to assist travel agents, who are indispensable for a start-up at the beginning of its operation. The call centre received an average of 10,000 calls per day after its launch, which decreased to an average to 7,000 per day in June 2004, due to the increasing popularity of Internet bookings.

"The main issue for a start-up carrier is to be known and recognised, mostly in its home market, which is why many start-up carriers secure agreements with travel consolidators," says Ritter.

Air Asia is obviously ambitious and positive in adopting new information technology to enhance its distribution. In August 2003, Air Asia introduced the world's first airline booking by SMS text messages from a passenger's mobile phone at a fixed rate of RM0.30 per SMS. Air Asia's SMS booking was developed through collaboration with Maxis Mobile Sdn Berhad, a Malaysian mobile phone service provider. Air Asia also encourages customers to book flights by mobile phone using wireless application protocol (WAP) technology. All mobile phone subscribers are able to access the Internet and make reservations and payment through their mobile phone and are charged based on the volume of kilobytes downloaded by the subscriber through the WAP website.

To save reservation and distribution cost, a new trend is to outsource reservation services to IT integration providers. Among these are Maintrack Services, a Netherlands-based company, which serves more than 50 airlines. "Using traditional reservation and distribution methods, airlines have to bear a heavy financial burden in building and integrating reservation and revenue management systems," says Robert Kok, joint managing partner and co-founder of the MainTrack Group. "But working with us, airlines just have to pay a small fee for reservation and distribution. It costs our customers about 12 cents per booking, while the cost would be 30 cents using the traditional model. The benefits come from the pay-as-you-go model as well as the low-cost one. If no

Automation and continual investment in IT at Southwest has allowed it to reduce its number of employees per aircraft from 95 to 73.

tickets are purchased, the airline does not have to pay any fees. This is particularly good for start-up airlines, which are not well known by passengers. Also, since airlines are using our service outside their own system, they can easily set up call centres anywhere. The only requirement is to access the internet."

Revenue accounting

Revenue accounting plays an increasingly important role for airlines worldwide. A proper revenue accounting system does not only advise the airline of its financial situation, but also improves its cash flow. Flybe, for example, can get a revenue accounting report 10 days after month-end, but tries to achieve this within three days.

Outsourcing revenue accounting to an IT provider is an economic and efficient choice for the start-ups. Air Luxor, the established charter and executive jet airline based in Lisbon, started scheduled services in 2000. The airline wished to outsource revenue accounting to minimise overhead costs.

Kale uses its Managed Process Services Centre (Kale MPS™) in Mumbai, India, to perform the complete set of revenue accounting functions for Air Luxor. Kale uses its software product, REVERA™, incorporating one of the most powerful proration systems in the world, APEX™. REVERA also includes a powerful business intelligence system – PRISM – that provides the customer with the facility to use the data available to take informed, pro-active 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 into a private website for retrieval by Kale's MPS. A broad level process flow diagram is included at the end of this document.

Revenue is declared 15 working days after the end of each month. Kale supplies a complete copy of the cumulative passenger revenue accounting coupon-level database each month. The airline analyses this using a data mining system, PRISM, supplied as part of the REVERA package. Kale also supplies standard reports like Route Revenue. Kale monitors missing inputs, such as flight manifests and sales reference numbers, to maximise the accuracy of the revenue data, achieving 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 Manugistics revenue accounting solution takes a data feed from past flights and sales for future flights. Bookings for future flights, however, often come directly from the daily reservation data capture which also provides the bookings for each price. This integration of data can be used to create the record of past and future sales when previous revenue accounting systems could not provide it.

Automation

If a start-up airline is to survive and succeed against established airlines, operational efficiency is essential. This means saving operation time and reducing operating costs. Saving operation time includes reducing aircraft turnaround time and increasing aircraft utilisation. Legacy carriers tried to achieve efficiency by streamlining their operations. New generation airlines, however, are keen to improve their efficiency with the assistance of modern IT, as well as by streamlining their working processes. jetBlue is a typical example, with 75% of its information systems devoted to new projects. jetBlue created the industry's first paperless cockpit, equipping pilots and first officers with laptops to access electronic flight manuals and make pre-flight load and balance calculations. Without this, the turnaround time would be prolonged by at least 15 minutes. The company's own developers have also built a programme called Blue Performance, to track operational data, which is updated flight-by-flight, and have created an intranet to share the information with jetBlue's 2,800 crew members.

Southwest Airlines peaked at about 95 employees per aircraft in about 2000-2001. The number has gone down to about 73 or 74. The primary areas of improvement have been reservations, where it needs fewer reservation agents per aircraft, and airports, where this company requires fewer customer service agents per aircraft.

Investment

Some start-up airlines are interested in developing their own revenue management systems. The majority of these are from developing countries, where it is cheaper to hire local IT professionals than to acquire western systems.

"An in-house system can be better for the individual business processes of the airline, but it lacks the on-going enhancement and development, which marks any product. Also, adaptation to changes in the airline and company environment are more difficult, since this requires specialists to perform the necessary updates," says Eggert.

"It is definitely better to have an integrated solution," claims Ritter. "It just does not make commercial sense for a start-up carrier to spend money and energy on developing its own system. Start-ups should be focussed on generating revenue, and not integrating systems and dealing with IT." AC