Pure LCCs and regionals affiliated with major airlines have relatively simple passenger sales IT systems. When these airlines seek to attract business passengers or increase their independence, the sophistication of sales-related IT systems has to be enhanced. A case study of four airlines that have been through this process is made.

Upgrading passenger sales IT systems for LCC & regional carriers

Rising fuel prices and static growth levels, caused by increased competition and the global economic downturn, have led many airlines to reconsider their business models in recent years. This has resulted in an increasing number of low-cost carriers (LCCs) developing hybrid strategies. Most have tried to stimulate revenues, increase load factors, and improve yield mix by developing ways to attract business travellers. This article will look at three case studies of the low-cost model, Vueling, easyJet and Norwegian, to identify how the passenger sales process must be upgraded when moving to a hybrid strategy, along with some of the options and solutions available.

It will also examine the unique case of bmi regional, an airline that was formerly owned by the Lufthansa Group, before becoming independent in 2012. This independence gave the management team the daunting task of establishing fully independent systems throughout the company. The decisions they made in their passenger sales process give useful insight into system considerations and priorities in the context of essentially starting a regional airline from scratch.

Passenger sales process

There are several stages in the airline passenger sales process: market forecasting and intelligence; distribution; reservations and inventory; pricing and revenue management (RM); e-ticketing; customer loyalty; check-in and departure control; and revenue accounting.

Some of the industry's biggest suppliers in these areas include Amadeus, Lufthansa Systems, Mercator, Navitaire, Sabre, SITA and Travelport. Although other solution providers may specialise in several areas, the companies listed above are the most established and cover the widest range of solutions.

Market forecasting

Airlines use market forecasting to try to predict what traffic volumes and revenues a particular market will generate, by analysing their own and competitors' schedule, capacity and fare data and underlying market demand.

Distribution

"Distribution is a key function in an airline's commercial department," says experienced airline executive Adrian Hamilton-Manns. "The distribution methods an airline uses are normally adapted to suit the cultural environment it is operating in." Distribution can be via: direct means such as an airline's website or call centre; indirect channels such as global distribution systems (GDSs), general sales agents (GSAs), and on-line travel agents; or interline and codeshare agreements with other airlines.

Traditionally full-service airlines focused on GDSs, while pure LCCs sold through their websites to keep costs low. The recent trend of emerging hybrid airlines has seen significant developments in this area, however. "The success of the hybrid model is determined by the ability to sell to corporate travellers, mostly through travel agents," explains Alexandre Jorre, senior manager airline distribution commercial marketing at Amadeus IT Group. Since most travel agents use GDSs to book their clients' flights, some LCCs have begun using this method of distribution.

Significant providers of traditional GDS systems include Amadeus, Sabre and Travelport which owns the Apollo, Galileo and Worldspan systems. Although distributing through GDSs undoubtedly increases an airline's reach, particularly to corporate customers, this does have extra costs, such as: GDS segment fees, which are chargeable for every reservation; travel agency commissions; and the cost of joining billing settlement plans (BSPs).

A BSP allows airlines to collect revenue from multiple travel agents or sales outlets. All agent and airline information is centralised through the BSP to avoid the need for each agent and airline to form individual connections. According to the International Air Transport Association (IATA), at the end of 2011 there were 88 BSPs, covering 176 countries, serving about 400 airlines.

Joining fees can be up to $25,000 per BSP. Local management fees will also apply. Their size is determined by the number of carriers in the BSP and the volume of transactions. Unit transaction process (UTP) fees are also charged for every transaction processed. APG-GA and IATA jointly developed an alternative scheme for joining BSPs. "The IATA BSP consolidator scheme (IBCS) allows airlines to join BSPs on a pay-as-you-go basis," explains Richard Burgess, vice president for Europe at APG-GA. The joining fee is only $1,000 per BSP, and there is a flat annual membership fee of $500 per airline, regardless of the number of BSPs joined. Commission and a UTP fee are then charged on revenue. "IBCS is well suited to airlines adopting a hybrid strategy or for start-up carriers because it

LCCs seeking to attract business passengers generally need to subscribe to GDSs, file fares and join BSPs.

removes the large up-front expenditure of joining BSPs," adds Burgess.

Other costs involved with GDS distribution can include those associated with filing schedule information with OAG and fares with ATPCO or SITA.

A new product on the market is e-alliance from Hahn Air Systems, a sister company of Hahn Air, which distributes globally via all GDSs. "e-alliance allows small- and medium-sized carriers to outsource their GDS distribution function, so that they do not need to establish their own GDS agreements," explains Kai Utermann, executive vice-president of sales at Hahn Airlines. "By distributing via Hahn Air Systems' existing agreements, they save on the expense of GDS segment fees. There are two options for covering running costs: a one-off implementation fee of Eur 5,000; or Hahn Air Systems can directly pass on the distribution costs to the passenger by adding a surcharge to the base fare."

Another option is the direct GDS whereby a travel agent connects directly to an airline's inventory without going via a traditional GDS. This has the advantage of removing segment fees so the airline only pays the travel agent's commission.

Airlines looking to increase their distribution can also use GSAs, sales offices that work on behalf of several airlines in countries where those carriers' sales are relatively low. The advantage of this is that the cost of the sales office is split across several carriers. APG-GA provides GSA or representation services in 107 countries. Services include: sales; marketing; advertising; ticketing; PR; and customer and agent support.

Interlining and codeshare agreements provide yet another option for airline distribution. An interline itinerary involves more than one flight segment with travel on more than one airline. Partner carriers benefit from feeder traffic from each other's networks. Pro-rate agreements in place between the carriers determine the resulting revenue split.

Codeshare agreements permit a flight to be marketed by multiple airlines, all of which have their flight numbers on the service, which is operated by only one carrier. Codeshare partners can increase their market presence by gaining access to routes outside their existing networks.

Reservations & inventory

If airlines do decide to increase their distribution channels, they may need to modify their reservations and inventory systems. Depending upon the airline business model these systems may need the capability to sell ancillary products, or to issue e-tickets.

E-ticketing

Airlines that wish to establish interline and codeshare partnerships will need e-ticketing capability to allow ticket numbers and passenger name records (PNRs) to be issued. The e-ticketing module can be connected to other parts of the sales process that include revenue accounting, departure control and reservations systems. Some providers have hub solutions to simplify e-ticketing between partner airlines.

APG-GA's interline hub does not have a joining fee, but there is a commission charged on revenue. The hub makes it possible for airlines to start many interline relationships without the need for large upfront capital expenditure.

"Travelport's E-Ticket Interchange™ solution includes connectivity to more than 400 airline and ground-handling participants using industry standard communications protocols and Edifact messaging," explains Reg Warlop, vice president product at Travelport. "This significantly reduces the costs and time to market for member carriers to establish new interline e-ticket relationships. Airlines need to have an e-ticket database and Edifact message handler to store and exchange e-ticket data with their partners using industry-standard Edifact messaging."

E-ticketing is not a necessity for distributing via a GDS. Ticketless distribution is possible and has been adopted by some carriers. This has the advantage of still reaching a wider corporate audience without the need for joining BSPs. However, instant payment is required on booking, and interline and codeshare partnerships are not possible.

Pricing & RM

There are a number of considerations in this area for airlines looking to adapt their business models. Those carriers following a pure low-cost model will have simple point-to-point fares with few rules attached. If they decide to target corporate travellers by distributing through GDSs and forming interline and codeshare partnerships, they will have to file fares and create more complex fare rules. They may also need an origin and destination (O&D) pricing approach.

Ancillary revenues are also an important consideration. The unbundling of the traditional airline product is a key feature of the pure low cost model. At its simplest level the passenger is paying for a seat only. All other services, including catering, baggage and assigned seating, are optional extras and incur additional charges. Airlines also partner with third-party providers for services such as car hire, holidays and hotels. It is not as easy to offer such ancillary offerings via the traditional GDS format as through an airline's own website.

More recently there has been a trend for airlines to offer re-bundled options. "Airlines are starting to build packages to

Vueling has increased the sophistication of its sales systems and now 44% of its traffic is classed as business passengers.

be more attractive to certain segments, mostly business passengers," explains Jorre. A bundled offering might include a hold bag or complimentary food and drink. It is easier to distribute bundled products via the traditional GDS method than via multiple individual ancillaries.

Customer loyalty

Frequent-flyer programmes and customer relationship management are important functions. Loyalty reward schemes are often avoided by airlines following a pure low-cost model because they want to avoid the system or staffing costs needed to run them. However, for those aiming to increase their appeal to corporate travellers, loyalty schemes are seen as an effective way of incentivising regular travel with the carrier.

Departure control systems

Departure control systems (DCS) and check-in are at the centre of the passenger sale and handling process. In recent years more ways of checking in passengers have been developed, including self-service kiosks and on-line solutions. The DCS needs to communicate with inventory and reservations systems, revenue accounting and loyalty programmes. As more airlines distribute via GDSs and enjoy the benefits of interline and codeshare partnerships, the DCS must also communicate with an airline's e-ticket database.

Revenue accounting

Revenue accounting becomes more complex when airlines distribute through GDSs and form interline or codeshare partnerships with other carriers. In the pure low-cost context it is simpler because payment is received instantly through a direct channel. Under a hybrid system, revenue may need to be reconciled from different countries and travel agents, and airlines, taking into account pro-ration agreements between partner airlines, GDS and BSP processing fees and travel agency commissions.

When airlines adopt a ticketed sales model with more complex fare rules they need to protect against revenue leakage. This involves ensuring the removal of dubious, unticketed or double bookings that are unlikely to be ticketed. It also requires checks that the correct fares and pricing rules have been applied.

Case Studies

Vueling

Vueling is a Spanish airline with its main base at Barcelona EL Prat, and operates a fleet of 70 A320 family aircraft. It has other significant bases in Spain, including Madrid, Bilbao, Seville, Malaga, Alicante, Valencia, Ibiza, Mallorca and A Coruna. It also has bases in continental Europe, including Amsterdam, Florence and Rome.

Vueling was launched in 2004. "We originally started as an LCC, focused on keeping costs as low as possible" explains Julio Rodriguez, chief commercial officer at Vueling. "From 2004 to 2006 our entire focus was on direct sales, mainly through our website, with a few through a call centre. Although this was the most efficient way to sell in terms of keeping down costs, it had the drawback of ignoring those customers, such as corporate travellers, that buy through travel agencies," continues Rodriguez. In recent years Vueling has adapted its business model to target more of them.

"Over the past three years we have been converting Vueling from an LCC to offering a product closer to that of a traditional airline," explains Rodriguez. "We now sell through GDSs." Vueling has a number of strategic agreements, both interline and codeshare, in place with airlines such as British Airways and Iberia. "These agreements allow us to take advantage of partner airlines' distribution outside our core markets of Spain, France and Italy."

Vueling's strategy is now to offer a rebundled product with fares classified as Basic, Optima or Excellence. "We offer the options of a tailor-made product or a bundled product offering. The latter is designed to appeal to passengers looking for a pre-designed product at a very competitive fare," says Rodriguez. "Vueling's Basic Fare offers a no-frills product, which allows the passenger to add specific services such as bags, seats or insurance coverage based on their needs. The Optima Fare includes the most requested services such as one checked bag, seat assignment in the front rows of the aircraft, the ability to board an earlier flight at no extra cost, and other services. The Excellence Fare is a fully flexible and refundable business class fare that includes dedicated check-in desks, preferential boarding, an empty middle seat in row one, complimentary catering, and other services," continues Rodriguez.

In another move to appeal to corporate customers Vueling introduced a loyalty programme called Punto. "We have kept Punto clear and simple," continues Rodriguez. "Points are earned and burned based on the ticket price." In fact Vueling offers two loyalty programmes, with passengers able to choose to earn miles with Iberia Plus.

To make these changes in its distribution strategy, Vueling now has to file fares with the Airline Tariff Publishing Company (ATPCO) and uses an e-ticket system to file ticketed booking details according to IATA standards. Vueling's reservation system is NewSkies by Navitaire and it uses airRM from Revenue Management Systems Inc.

easyJet has benefitted from joining GDSs, and has gained from being able to pass the GDS segment fees on to the passengers.

"airRM is a leading dynamic RM decision tool," explains Rodriguez. "In addition, Vueling has developed its own RM system with innovative features providing a competitive advantage, which is used in conjunction with airRM."

"Because 83% of our passengers are travelling on a point-to-point basis, we have maintained a point-to-point pricing strategy and saw no need to incur the additional expense of adopting O&D capability. We have also kept our fare rules simple," continued Rodriguez.

Vueling has built its own revenue integrity tool to guard against revenue leakage and its revenue accounting function is outsourced.

The changes to attract more corporate passengers seem to have been successful, with 44% of Vueling's customers saying they are travelling on business. "We need to understand passengers' needs, and what they consider essential, then offer it without increasing the cost base," says Rodriguez. " We have the second lowest cost base of any European airline."

easyJet

easyJet is the UK's largest airline in terms of passenger numbers, with its headquarters at London Luton airport. It has 22 operational bases across Europe, the largest of which is London Gatwick. It currently has a fleet of more than 200 aircraft, made up of A319s and A320s.

The airline began life in 1995, and for many years stuck to its original low-cost principle of distributing directly via its website and call centres. Like Vueling, easyJet saw a need to adapt in an attempt to attract more business traffic.

"About five years ago we changed the strategy to target more corporate travel companies," explains Paul Simmons, UK director at easyJet. "We now distribute via GDSs including Amadeus, Galileo and Sabre." easyJet decided to remain as a ticketless operator. "We do not file fares, we have not joined any BSPs, we do not use general sales agents and we do not have any codeshare or interline partnerships with other carriers," says Simmons. "Our success is based on keeping things simple. We want to reach more people by using the GDSs, but we do not want to lose out financially to achieve this. We therefore charge a small premium of £3.30 for every booking that is not made through the website. This covers the extra cost of GDS distribution such as segment fees," says Simmons. By staying ticketless easyJet avoids the costs associated with filing fares, joining BSPs and setting up an e-ticket server.

Together with its distribution partners, easyJet has developed advanced protocol interfaces (APIs) that link to its in-house reservation host system e-res, allowing GDSs and Travel Management Companies to see its live inventory. Working with the GDSs, easyJet has also developed the ability to sell its add-on ancillaries via this indirect sales channel.

Other strategic moves designed to appeal to corporate travellers involved changes to the schedule with multiple frequencies added on some of the top point-to-point routes in Europe.

The airline also introduced its own rebundled offering in the form of its Flexi Fare product. Unlike standard fares these include unlimited free date changes from one week before, to three weeks after, the original travel date. The fare also includes one piece of hand luggage, one piece of hold luggage up to 20kg, front-row seats, and speedy boarding.

To keep costs down, easyJet has focused on developing its own IT software in-house. "Some of our key IT systems, such as our revenue management software and e-res, are bespoke," says Simmons. "In terms of fares we remain very much a point-to-point carrier." The airline's DCS is linked to e-res. Revenue accounting is carried out in-house, while third-party provider QL2 monitors competitors' fares for business intelligence purposes.

Norwegian

Norwegian is the third largest LCC in Europe. It operates more than 300 hundred routes to over 100 destinations with a fleet of 10 737-300s and 58 737-800s. It has crew bases at Oslo (Gardermoen), Stavanger, Trondheim, Las Palmas, Alicante, Malaga, Helsinki, Copenhagen and Stockholm. It will soon open another base operation at London Gatwick. In 2013 it will launch long-haul services to New York and Bangkok from Oslo and Stockholm using 787s.

Norwegian originally commenced services in 1993 in cooperation with Braathens S.A.F.E. With the purchase of Braathens by SAS in 2002, Norwegian repositioned itself as an LCC. "The domestic Norwegian routes we were targeting in 2002 were four of the biggest in terms of passenger flows in Norway, and two of these were in the top 10 in Europe," explains Lars Sande, director of sales at Norwegian. "We had a lot of business travellers on these routes, so from the outset we needed to distribute via GDSs. Initially we had agreements with Amadeus, Worldspan, Sabre and Galileo. Since our main focus was on domestic routes in Norway, and some of the GDSs did not have high market share there, we decided to come out of them and focus on Amadeus," says Sande.

The imminent launch of long-haul services will see another change in the GDS strategy. "We will be going back to Sabre," explains Sande. "We think the incoming market from the US will be significant for our long-haul routes, and Sabre has the biggest presence of any GDS in the US."

One change Norwegian made to make the process of using GDSs easier was to introduce e-ticketing. It has also signed up to BSPs and GSAs, while keeping its fare structure simple.

There is a difference between the product offered via the website and via a GDS. "We do not have product parity between GDSs and the website," says Sande. On the website it is possible to buy a base fare and then add various ancillary products, such as a hold bag.

"The solution to allow various ancillaries to be added to a base fare when buying through a GDSs is more complicated," adds Sande. "We therefore bundle some of the most popular products to make them available through the GDS channel. For example, each GDS booking includes a bag, so the cheapest fares are not available through the GDS, but via the website. Until there is a cheaper ancillary sales solution for GDS distribution we will continue to do things this way."

Norwegian offers a bundled Flex fare to appeal to business travellers. This includes: seat reservation; one checked bag; name, date and destination changes up to 30 minutes before departure; and free cancellations.

"We have joined BSPs in the Nordics, UK and Germany and will be joining the ARC in the US for our long-haul flights," says Sande. The airline also uses GSAs, but only in the UK. It does not have any codeshare or interline agreements.

"Until three years ago we used our own ticketless system for distribution," says Sande. "This had limitations when selling through GDSs. It required a more manual process, and as we began moving out of the home market it became harder to encourage travel agents to go through the necessary procedures with bookings. We now use the Amadeus e-ticketing function, which is far more streamlined, and will simplify things if we establish interline partnerships in the future."

Amadeus e-Ticket server gives access to Amadeus' e-ticketing network, which connects over 300 airlines. It is included as part of the Altea Reservation product but is also available as a standalone solution. Norwegian uses Amadeus Altea for its reservations and inventory, and check-in and DCS functions.

Where RM and pricing are concerned the airline uses the Sabre Air Vision system. "We have a point-to-point pricing policy," explains Sande. "O&D pricing is obviously much more complex, although we are always evaluating our options, especially as we move into long-haul." Fares are filed with ATPCO, but the airline has tried to keep things simple. "We have more than 20 fare classes, but only two fare rules: those that apply to flex fares and to standard fares."

The airline has a loyalty scheme known as Norwegian Reward. This is a frequent-flyer programme which rewards passengers with 'Cash Points' for flights with Norwegian. Points can be redeemed against payment for future flights, flight changes, assigned seating, and baggage.

Norwegian's revenue accounting functions are performed in-house. "We previously had our own systems to manage revenue leakages," says Sande. "However, as we have expanded and moved into new markets, we need more automation, so we are buying system licences for a more efficient solution."

Norwegian does not have MIDT data as part of its market forecasting and intelligence functions. "We receive data from airports that allow us to see our market share on various routes," says Sande. "We also use software from Infare to monitor competitors' fares."

bmi regional

bmi regional is a British regional airline with its main operating base at Aberdeen. It also has significant operations from Glasgow, Edinburgh, Manchester, Leeds Bradford, Bristol and East Midlands. Its administrative headquarters is at East Midlands airport where finance, commercial and IT functions are based. It has a fleet of 18 aircraft: four Embraer 135s and 14 Embraer 145s.

The past 12 months have been eventful for bmi regional. In early 2012 the bmi group, consisting of bmi regional, bmi mainline and bmi baby, was sold by Lufthansa to International Airlines Group (IAG). The mainline operation was absorbed into British Airways, while the low-cost airline was closed down. Only bmi regional remains after being bought by Sector Aviation Holdings. As part of the purchase, the new owners took on the regional operation and the ability to continue business under the bmi brand.

The new management team faced a significant challenge. A transitional contract signed with IAG allowed bmi regional to continue using support services from the bmi group for key IT functions, including reservations, revenue management, distribution and accounting. However, this support would not be available after October 2012, by when the former bmi group would be fully absorbed into British Airways.

"Our challenge from June to October 2012 was to set up a complete infrastructure for bmi regional," explains Cathal O'Connell, chief executive at bmi regional. "We had to identify the dependencies we had with the bmi group and work out how to deliver those functions independently on an extremely tight timescale. Throughout this period we continued to operate all services as normal on the systems managed by bmi, while we created the replacement structure for the end of October 2012."

"In terms of setting up new systems, we prioritised services that would ensure continued safe operations and the ability to sell," explains O'Connell. "We needed to create a totally new IT infrastructure for all parts of the airline, including Operations, Engineering, Finance and Commercial. This was to ensure we could *bmi regional was forced to establish an entire sales IT system in 2012 after becoming independent. This includes subscriptions to GDSs, use of GSAs, a reservation system, the use of e-ticketing, and a new revenue management system.*

continue to operate fully, take reservations throughout the transition period and have all functions ready for our October 28th 2012 deadline."

"A key driver in selecting passenger sales process systems was our business model of a full service airline serving business and connection markets," says O'Connell. "We therefore had to adopt a reservations system that would support all sales channels. The Radixx system met our needs for direct web and call centre sales, full connectivity to support GDS sales by agencies and corporates, and interline sales by our airline partners."

A Florida-based provider that was created in the mid 1990s, Radixx designed its system to meet the needs of all airline business models. "Our goal was to open up and manage all channels of distribution," explains Ron Peri, chief executive at Radixx. "Even if an airline does not want a particular function, the capability is built into the system so that it can activate it at a later date. We are proud of our ability to migrate airlines from other systems to our own solution with minimal disruption. Throughout the three-month migration process we went through with bmi regional, they were able to continue taking bookings."

"Radixx worked with us to ensure delivery within the required timelines, including migrating existing bookings from the bmi host system and setting up our website," says O'Connell.

"We set up links between Radixx and the major GDSs suppliers Travelport, through their Worldspan and Galileo systems, Amadeus and Sabre," explains Steve Hoy, chief commercial officer at bmi regional. "At the same time we had to change our two-letter IATA designator code from BD to BM. We joined 10 BSPs in the European markets most relevant to our operation. We also use a mix of GSAs and our own representation in Europe, depending on the size of the market.

"It was also a priority for us to have certain interline agreements in place to allow our passengers to continue connecting on to other networks," continues Hoy. "We anticipate that we will also have codeshare agreements in place in the 2013 summer schedule. The advantage of these is that they can give us a stronger marketing presence outside our core markets, and so stimulate feed traffic on to our network."

bmi regional uses the Radixx product to provide other solutions in the passenger sale process. "The system has a built-in tool for revenue leakage monitoring," explains O'Connell. "It ensures that inventory is being held legitimately, and will be paid for. This is particularly important when operating regional aircraft, as unticketed bookings holding space can have a more significant impact on overall performance."

"When we selected the Radixx product we also considered its capability to manage loyalty schemes," says O'Connell. "When it was part of the bmi group, bmi regional benefited from its parent airline's Diamond Club reward scheme, along with those of Star Alliance partner members. Since gaining independence, bmi regional has not had a loyalty scheme, but we realise the importance of recognition and reward for our regular customers. Benefits such as lounge access, and airport fast tracks are generally well appreciated by the core business market we serve. Radixx has an in-built loyalty programme capability, and we plan to use this to establish a rewards scheme in the coming months.

"We are also rolling out the departure control capability in the Radixx system at our Aberdeen base, and will be deploying this further throughout 2013," adds O'Connell. "Initially third-party ground-handling companies have provided our check-in and departure control facilities. With the short time frame we had during our transition project, we decided to prioritise other areas because it was more straightforward to use the handling company's DCS function for the time being. Online, mobile and through-check-in with partner carriers are also planned, with the latter through the use of Travelport's through-check-in hub."

With interline agreements in place, bmi regional needed interline e-ticket capability. "We have an e-ticket database connected to Travelport's e-ticket interchange," explains O'Connell. "This simplifies connecting with other carriers, and makes future interline agreements more likely."

"We provide a full service product with complimentary catering and baggage, and business and economy fare structures," says O'Connell. In deciding upon its RM system bmi regional wanted a solution that suited its scale. "We implemented airRM by Revenue Management Systems Inc. Its quick implementation time and flexibility for future growth were key factors for us."

"The main value proposition of airRM is that it is a highly capable system that can be quickly and inexpensively deployed," says Eric Nordling, chief operating officer, RM Systems Inc. This ability for fast implementation was clearly another advantage given bmi regional's timescales. The airline also uses airRM in conjunction with Radixx as a powerful reporting tool. Other tools used for market intelligence include QL2 for monitoring competitor's fares.

"As far as revenue accounting is concerned, reconciling revenues for a carrier with interline agreements in place is quite complex. We were mindful of the complexities and skillsets required for the interline pro-ration process and opted to outsource this function to Accelya Kale Solutions, rather than creating our own in-house process," says O'Connell. AC