

Airlines' ultimate aim in analysing their competitors' performance involves several stages of acquiring schedule & capacity data, sales achieved, fares available through various channels, and passenger numbers. Assessments of a competitor's performance are becoming more accurate.

Systems for analysing competitor's sales

Airline commercial, network planning and revenue management (RM) departments would like to have enough information and data about their competitors' performance to know about their passenger loads, average yields and unit revenues. This would allow them to make the most informed decisions about schedule and capacity planning, pricing structures, and RM and fare availability. Specialist providers of software supply and process this information, although not every type of information that an airline would ultimately need is available. The data that are available, however, can provide an accurate picture of an airline's competitors' performance on a specific origin and destination (O&D) or city-pair market. This can then be compared to the airline's own performance to enable its network planning and RM departments to make management decisions.

Ultimate data & information

An airline would like to have different four categories of data about each of its competitors: schedule and capacity information; passenger numbers and load factors; published and unpublished fares, with taxes and surcharges; and the number of fares sold in each class, the number of point-to-point and connecting fares sold, and the average yield and revenue per available seat mile (RASM) on each O&D or city-pair.

It is relatively easy to acquire schedule and capacity data, but with more tickets being sold through airline websites it has become more difficult to collate a competitor's sales data, and identify the fare class each passenger has paid. Marketing information data (MIDT) measure the bookings made by travel agents via the global distribution systems (GDS), and would give an accurate

picture of revenue generated by airlines when the majority of sales were via travel agents. The growth of the internet, and the resulting need for more sophisticated means to analyse sales volumes, has led to the evolution of robotic webcrawler software. This mimics a buyer's activities and goes onto competing airline websites at specified times and frequencies to search for fares available on particular routes and O&D pairs. A market leader in webcrawler software is QL2.

The type of data an airline would like to see in these four categories is described in more detail.

Schedule & capacity data

Airlines need to know how attractive their services are and how these compare to each of their competitors on every route they operate. The industry standard methods of gauging this are through qualitative service index (QSI) or Logit techniques. QSI takes a large number of parameters that affect the quality of service of a particular flight number and uses them to provide a QSI value to that flight. The QSI value for all flights on the same route is then totalled. A particular airline's total QSI out of the whole QSI for all services on a route indicates the market share that an airline and its competitors can expect on that route.

Airlines can analyse the QSI values of city-pairs or O&D markets, for example: the QSI values of all the direct services on a city-pair; the QSI values for indirect and connecting services between the two cities; and the QSI values of alternative cities or one alternative city to that route. London-Frankfurt, for example, is served from two London and two Frankfurt airports for direct services. British Airways (BA), British Midland and Lufthansa fly direct between London Heathrow (LHR) and Frankfurt Main

(FRA). Ryanair operates between London Stansted (STN) and Frankfurt Hahn. Swiss flies indirect via Zurich. Flybe operates from Southampton to FRA, and Air Berlin flies from STN to Cologne.

The parameters that QSI uses, and what an airline needs to know about its competitors' services are: the route or city-pair; the possible connecting city-pairs; alternative city-pairs; the flight number and departure and arrival time of each service; the aircraft type and seat numbers for each service; the number of seats in each cabin class on each service; the connection times of connecting services; and the variation in capacity throughout each day, week, and month.

QSI values are determined by initial calibrations, which assign values to each service parameter. Widebody aircraft therefore have a higher value than narrowbodies, and A320 family types may have a higher value than a 737 because of wider seats. QSI values also take into account fares, but not cabin service levels.

QSI values constantly have to be re-assessed for each city-pair. With the increased amount of competitors' data that an airline is able to acquire, and a greater ability to analyse it, airlines are able to compare QSI and theoretical market shares and revenues with actual passenger loads, revenues and market shares in a short amount of time. These data are used to make decisions regarding schedule and capacity or pricing and fare-class availability changes. This has made the market more dynamic in recent years. QSI values should therefore be frequently re-assessed and re-calibrated to account for changes in competitors' tariffs, fares, aircraft types and schedules.

Although cabin service parameters are not included in QSI calculations, by continually monitoring an airline's traffic and revenue, sudden shifts can often be



pinpointed that result from a change in cabin service standards. An example is when one airline on a long-haul route introduces lie-flat beds in business class and gains market share, while its competitors have yet to introduce them.

Acquiring schedule and capacity data is one of the simpler aspects of assessing competitors' performance. Airlines used to publish their schedules, aircraft types and seat capacities in their own timetables, but have ceased to do so since this information is now available on their websites. Schedules, flight numbers, departure and arrival times, aircraft types and seat capacities are also filed with the Official Airline Guide (OAG).

While OAG has long been the prime source of this information for airlines, other products used to source competitors' data have diversified and now provide similar types of information.

One product is the International Air Transport Association's (IATA's) PaxIS product. "PaxIS is a one-stop shop for analysing competitors' data," says Joel Antolini, senior vice president at Seabury Airline Planning Group. "PaxIS is a software product designed for an airline to analyse its own and competitors' information relating to traffic and passenger numbers, load factors, schedule and capacity data, fares, yields and yield mixes, and unit revenues. IATA has access to airline capacity and schedule data, as well all the other types of information needed for the full analysis. The schedule and capacity part of PaxIS allows an airline to look forward several months at its competitors, and to look back so that capacity trends can be analysed."

Lufthansa Systems is integrating its NetLine/Plan product, which has a QSI and a Logit model, with its Advance

Suite. The parameters are set by the customer, and Lufthansa Systems recommends that airlines update their QSI values on a monthly basis. Lufthansa Systems also offers NetLine/Plan for providing schedule and capacity data for long-term or strategic planning. Its NetLine/Sched is for short- and medium-term planning, while NetLine/Ops is for daily operations.

Amadeus, traditionally a GDS and reservations systems provider, is also able through its MIDT product to provide airlines with schedule and capacity data. "We provide this as part of our travel intelligence product which has MIDT as the core," explains Ignacio Serra, senior manager of market intelligence and business development at Amadeus.

QL2, which has focused primarily on webcrawler software and providing website fares, also provides schedule and capacity data. "Our main product is webcrawling software to gather information on fares, but in doing this the software also of course gathers some airline schedule and capacity data," says Paul Campbell, vice president at QL2. "Besides searching for fares, our software gets data on flight numbers, dates, departure and arrival times, connecting airports, and all other itinerary information for each O&D. Airlines use our product by logging in on our website and specifying the searches they want, and then access and download the information as they need it."

Travelport is a software provider that recently acquired Shepherd Systems as data processing specialists. "Our core product and activity is processing and analysing MIDT data purchased from GDSs. Through this we get a lot of schedule and capacity data, so we are

The first step in analysing competitors is acquiring their schedule and capacity. This was traditionally acquired from OAG, but the increased functionality of the systems available has given airlines a wider choice for acquiring this data. Airlines should analyse schedule and capacity data, and make QSI evaluations on a monthly basis for most markets.

also able to provide QSI analysis," says Chris Colaco, vice president operations of business intelligence at Travelport. "These QSI values and predicted market shares can then be compared to actual market share data."

Passenger numbers & loads

The second stage in assessing competitors' performance is gauging their actual passenger numbers and loads, in particular the number of passengers in each class.

Relatively basic passenger number data are available simply by counting the number of passengers departing from or arriving at airports. Some airports even provide passenger statistics, but in many cases these are not detailed. "There are good quality passenger statistics for all routes in the US domestic market, because airlines have to file these with the US Department of Transport (DoT). This is known as T100 data," explains Adrian Hamilton-Manns, general manager commercial at Pacific Blue. "The European Union is close to having the same level of detailed passenger data, because airlines have to report passenger numbers for all flights. The data are not divulged any further, but may eventually be published."

Passenger numbers can also be acquired from air traffic control, since pilots inform the tower of numbers on board prior to take-off. Passenger data can sometimes also be acquired from local aviation authorities.

"MIDT can be an accurate source of passenger numbers where the internet has little penetration as a sales channel," explains Hamilton-Manns. "MIDT data only gives information on bookings, and not actual ticketing or sales. Non-ticketed bookings and cancellations, as well as tickets sold through other channels still have to be factored in, even in markets where there is little or no internet penetration."

IATA's PaxIS system provides some raw passenger number data and estimates of passengers on each route. "IATA has to act as a clearing house for its member airlines, in that it settles and clears ticket sale transactions made by one airline for carriage of a passenger on another carrier. This generates a lot of billing and settlement plan (BSP) data, which IATA

MIDT data used to give accurate indications of sales won by competitors in virtually all markets. The growth of direct bookings through the internet means MIDT data provides a less accurate forecasts on an increasing number of routes.

can use for its PaxIS system. There are 70 BSP offices across the world that collect information on 350 million tickets. This makes it possible to create market size information, which has better penetration than MIDT data. PaxIS allows an accurate picture of passenger numbers to be created," explains Antolini.

"PaxIS does not have any information from direct sales channels, but it can mathematically adjust the data it does have by taking into account the internet's penetration in each of the markets it serves," continues Antolini.

MIDT is another source of data that can provide a picture of passenger numbers. Like the IATA BSP data, it does not have direct sales channels data, so passenger numbers must be extrapolated. "The MIDT data we can supply at the moment is GDS data of bookings made at travel agents. MIDT data includes information relating to: flight number; departure and arrival times; aircraft type and seat numbers; the travel agent making the booking; and the cabin class of the booking," says Serra. "It does not provide any information relating to booking locator code, passenger name and record (PNR) or the actual fare class used for the booking, although it is able to take account of the fact that not all bookings are ticketed, and of those that are, some will later be cancelled.

"We will be improving our MIDT product to include data on sales made through airlines' own direct sales channels," continues Serra. "Sales made by low-cost carriers (LCCs) through their websites will also feature. We will also add sales data on rail services, such as the Eurostar, since these compete directly with airline services. We are not exactly sure when we will be able to offer this direct airline-sales channel data product.

"The current MIDT data is for bookings made for O&D pairs, not city-pairs. This amounts to about 2,000 bookings per second, and bookings up to a year in advance of a flight can be analysed," says Serra. "The core value of current MIDT data is that it looks forward. In the future some direct sales channel data will be taken from each airline, since we provide many carriers with our Altea reservation system. Through this we have sales data for 145 airlines, many of them major carriers, and when we have commercial agreements from each of them we will be able to



provide direct sales data. Although airlines will be required to disclose their own data, in turn they will get greater value by having access to the data of their competitors. We also expect to be able to provide LCC sales data. There are third parties that consolidate this data, and a lot of passenger data is publicly available from airport authorities and other sources. We have 50 LCCs in the Amadeus system."

While the internet and other direct sales channels are increasing in importance, Serra says that it is still possible to build a picture of passenger numbers. "GDSs and travel agents still account for 50-70% of sales. On some routes like Washington-New York 90% of bookings are still made through travel agents, since many passengers are business travellers, who mainly prefer to use travel agents.

"We have several MIDT packages tailored to meet different airline requirements. The most comprehensive is World MIDT, which provides data on all bookings made by travel agents using the Amadeus GDS system for all airlines in all parts of the world. This is bought by the largest airlines, such as BA, American Airlines, Continental, Northwest and Iberia," explains Serra. "The second product is International MIDT, which provides data on all extra-European bookings, that is all O&Ds except for intra-European ones. The third product is Network MIDT, which gives an airline data for all bookings for all airlines on its own network, so it is tailor-made for the airline customer. The only drawback is that it would miss connecting traffic. For example, if a South American carrier has a direct service from its hub to Madrid, the system would provide it with data on

the direct route to Madrid, but not on all the connections from Madrid to other European cities that it did not fly to.

"We also offer Custom MIDT," continues Serra. "This is fully customised for an airline, and is based on O&D pairs. The airline customer therefore has to specify cities. There are three levels of Custom MIDT: Custom 100, which has 100 O&D pairs; Custom 200, which has 200; and Custom 300, which has 300. This is usually bought by airlines that operate limited networks. Finally, Express MIDT is a smaller version of Custom MIDT, limited to 50 O&D pairs. It is suitable for small and start-up airlines."

DOB Systems of Houston, Texas has been processing MIDT data for 20 years. "We process data acquired from all nine major GDSs, and display the analysis," says Ken Boot, vice president at DOB Systems. "We provide this service globally to airlines. We get 300 million sets of GDS data per month, which is equal to 30-40 million passengers. We receive it daily, and can provide the processed information to our customers on a daily, weekly or monthly basis.

"Different airlines have different requirements from the data," continues Boot. "The large carriers just want the processed data, while others want us to analyse and display it. We have an internet display tool that allows airlines to access the analysis. The best use is for airline sales staff. The display system has two modules. The first is 'Market Focus', which allows the user to acquire information at any level from the data. People using it usually look at different markets, and can drill down a long way. The second module is 'Sales Focus', aimed at sales people, who are usually interested in finding out which travel



agents and routes or markets need to be targeted. The data is presented in an easy-to-understand way.”

Lufthansa Systems' NetLine/Market product monitors the booking situation of an airline and its competitors on a comparative basis. The Segment Capacity Report can monitor these bookings in relation to each airline's capacity for a particular segment. The cabin classes of all airlines on the segment and the airline flight numbers can also be shown, as well as total bookings for each day of the week. NetLine/Market shows the bookings for a 24-month history and 12 months forward for all airlines booking globally using GDSs. Market shares and segment capacities are also shown.

Competitors' fares

The third element in an airline's analysis of its own and its competitors position is an accurate assessment of its competitors' fares.

This has become more complex over the past 10-12 years with the advent and growth of the internet. Airlines register their published fares with the Air Traffic Publishing Company (ATPCO). These are the fares that are available through an airline's own call centres or ticket offices, or through travel agents via the GDSs. This information is available to all airlines. Published fares include all full and published discount fares for all cabin classes, as well as the rules and restrictions for each fare.

Before the internet, airlines also offered unpublished net fares through travel agents, tour consolidators and 'bucket shops'.

Airlines have several fare classes, or 'fare buckets' in each cabin class. Prior to

direct booking through the internet and simplified airline tariffs, airlines had many fare classes in each cabin class. Each fare class was assigned a letter of the alphabet, with an F class fare usually being the most expensive and least restrictive in first class; J the highest fare in business class; and Y the most expensive and least restrictive fare in economy class. There were usually another two fare classes each in first and business class, and up to another 20 in economy. These fare classes were published fares, and the cheaper the class, the more restrictive it was.

Now that the internet is a main distribution and sales channel, airline full-fares are lower, tariffs have changed, and the rules of each fare class are simpler. There are also fewer fare classes in an airline's published fares tariff and in each cabin class.

Internet fares are not published with ATPCO, but are fully visible on airline websites. While making all fare classes visible, airlines only make one fare class available at any one time according to its RM decisions.

Published fares are still available through ATPCO, as well as through an airline's call centres, ticket offices, and website, and travel agents via GDSs. Unpublished fares are discount fares placed on airline and third-party websites, and are also fares used by LCCs, which use their websites as their main or only distribution channel.

Unpublished fares pose a problem for competing airlines, since they are not listed anywhere, and can only be accessed by frequently visiting each airline's website.

Another category of unpublished fares are net fares, which are highly discounted

There are various means of acquiring passenger numbers on each flight, but none are reliable. Amadeus hopes to expand its MIDT product to include direct sales made on airlines' websites once it has the commercial agreements in place.

fares made available to tour operators and travel agents. Net fares are then grossed up by travel agents at whatever mark-up they can get. These are also hard for competing airlines to monitor.

Webcrawler software is the most efficient way of obtaining competitors' unpublished fares. "Our QL2 product is basically a web-based system where customer airlines specify the routes they want to analyse, and the times of day they want the robotic software to do the searches. Other parameters can be set, such as returning the lowest fare offered by each of the competitors," says Campbell. "By periodically checking each airline, not only can QL2 pick up the different fares each one offers, but also when it changes the availability of each fare in its pricing. This gives an airline a pattern of its competitors' RM strategy. All point-to-point and connecting fares for a particular city-pair can be analysed.

"The software can work 24 hours per day, and the captured data can be accessed and downloaded by the airline as necessary. We also now have a product that takes crawled results and integrates them with published fares, so that a customer can see the full range of fares on each of its routes, without having to manually match them."

Revenues & yields

Even once all fare classes have been determined, airlines still need a lot of information about their competitors' selling activity before they can gain an accurate picture of how each one is performing.

Several levels of information are required to make this analysis, including: the number of sales made through each sales channel; the fare classes actually being sold; the amount of time each fare class has been available through the different sales channels; and the number of sales achieved for each fare class. If available or accurately predicted, these data would allow an airline to assess the average yield and unit revenue each of its competitors were generating on every route in its network. The ultimate goal would also be to monitor the variation or trend in yield and unit revenue of each competitor by flight number and during the course of each day, week and month. These trends could then be tracked to assess correlations with changes in fare

Airlines ultimately would like to analyse each competitor's traffic volumes, load factors, revenues, yields, and unit revenues. More information and data is now available for airlines to form an accurate picture of a competitor's performance, and further product enhancements are due.

availability, and schedule and capacity changes to allow airlines to make management decisions.

Processing is required to make this possible. "An airline would like to see its competitors' booking profile through all of the sales channels it uses," says Hamilton-Manns. "These are the internet, call centres, ticket offices, external websites, and travel agents. An airline needs to know the time of day that each channel is at its peak, to help it decide when to make particular fare classes and buckets available on each one. This is part of optimising its yield mix. While it can do this analysis for itself, it cannot do this for its competitors. Competitors' fares should be analysed daily, while schedules and MIDT data should be looked at weekly, and T100 and other traffic data analysed monthly. This means that there is a huge amount of data to analyse and process, and a large number of people are needed to do it. This is where processing specialists help airlines. At Pacific Blue we get competitors' schedule data from APG and enter it into Excel to calculate QSI, and then update our expected market share. This makes it relatively easy to see who has added or deleted capacity or frequencies. Airlines publish their schedules several months prior to launching, so we have to respond accordingly. This is a first stage in setting our pricing strategy. If a competitor leaves or enters a route we can predict the change in demand, and alter our pricing and RM accordingly. We then use webcrawler software to identify if there are competitive gaps such as fares that we are unaware of.

Amadeus offers a processing service for the MIDT data it provides. "Our Express MIDT comes with a processing tool. Data can be processed by the airline customer, or a specialist processing provider such as Travelport or DOB Systems. DOB Systems is a partner with us on our Express MIDT product," says Serra. "Data starts in Excel and can be analysed and presented graphically to show booking patterns and other parameters."

IATA's PaxIS system is intended as a one-stop shop, in that it can process data for a customer if necessary. "Airlines use MIDT and BSP data to see which of their sales channels are selling what proportion of their tickets," says Antolini. "The



volume that each travel agent is selling can also be analysed, as well as how many bookings are being made by the same travel agent for each of its competitors. Although MIDT data does not give fare data, if an agent is making more bookings for a competitor the airline can then enquire why, which may give answers or clues to a competitor's RM strategy. There are now many new products an airline can use to drill further down into the data to see what drives the revenue on each route. The PaxIS product can provide airline market shares from the BSP data it has. It can also provide information on the fares of all players on a route, although it is not perfect in all markets. PaxIS can also adjust traffic volumes to take account of direct bookings and sales. The one area for which it is difficult to provide data is the yields and fares of direct-sold tickets.

Travelport specialises in processing large volumes of MIDT data to provide its clients with a picture of market activity. "We can analyse data by day of travel, by airline, or by city-pair," says Colaco. "The data volumes relate to literally tens of millions of GDS bookings per month. The main use of MIDT data is in an airline's sales department, especially in managing travel-agent sales channels. An airline can also analyse its own distribution and sales strengths and weaknesses. At a more aggregated level, because MIDT data is forward-looking an airline can analyse the effects of its pricing and fare availability decisions compared to its competitors, or how it is affected by a competitor's pricing.

"The information and data can also be used to make decisions about opening new routes. Air France, for example, may

consider opening a Paris-Tampa service if it sees a strong traffic volume between London and Tampa," continues Colaco. "The MIDT data can be used to show how many passengers are travelling direct from London, and how many are connecting at London from other European cities such as Paris, Frankfurt and Madrid.

"Travelport can also analyse how much business and economy traffic an airline and its competitors are getting," continues Colaco. "We have a suite of products to analyse the data, which we store in Oracle. It is possible to see which competitor is getting a better share than you, or why you are getting a better-than-expected share.

Travelport is bringing out a new product called Acuity. "Acuity analyses and expands data sets," explains Colaco. "This includes MIDT data, QSI analysis and an airline's own revenue data. From this a full analysis can be made so that its own revenue generated, in terms of yield and unit RASM on each route, can be analysed. Acuity also offers an 'average fare' module, which provides the airline with its average yield and unit revenue for each route.

QL2 also offers processing products. "These are all part of our webcrawling Pricetrack product," says Campbell. "We process the data and present it in terms of graphs. We also have a utility that allows an analyst to change their own prices. This can either be a ATPCO fare or any GDS or website that accepts fare changes directly." 

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