A new generation of ticket sales and distribution technology is ermging. This has been spurred on falling yields as a result of airline competition and changing business dynamics. These new technologies will not make travel agents and direct booking obsolete, but they will reduce airlines' reliance on them.

Emergent distribution channels for ticket sales

In the past five years airlines have invested heavily in research into developing new distribution channels. This investment has been dictated by developments in technology, as airlines attempt to place their products in front of an increasingly mobile and internet-connected public.

Airlines are seeking to make their products available via an increased number of platforms for passengers which increasingly have less time to investigate fares and book tickets. Technological development has enabled airlines to develop more ways for passengers to purchase tickets, many of which have grown from the internet.

The internet was a catalyst for change for most airlines. While some airlines were slow to recognise the reach and benefit of the internet, most have now altered their business processes to make internet-based sales a high priority. Airlines are investigating new ways for customers to access fares, and are using the internet as the backbone of their future sales strategies. New distribution methods are intended to reach people while they undertake daily tasks. Television, mobile telephones and bank automated teller machines (ATMs) have all been identified as new distribution options. Technological evolution has spurred airlines' investment in research and development (R&D) to find methods of linking emerging technologies into new sales methods.

Changing business dynamics

The changes in the airline industry are primarily an evolutionary process, but have also been spurred by pressure placed on existing carriers by low cost airlines. The advent of low-cost airlines. In combination with economic pressure and internet availability, low-cost airlines have altered passenger expectations of travel. Passengers are more willing to trade-off quality of service to secure a reasonable ticket price.

Airlines traditionally charged a premium for on board service, with high service airlines able to charge more than competitors on a given route. This has changed. Travellers are willing to pay some premium for service, but the differentiation between full service and no-frills service is extremely price-sensitive.

Fares transparency is now commonplace, with travellers being able to query research options via the internet. Passengers are also more sophisticated, and more aware of their options and pricing levels than ever before. As a result, the benefit of sales through travel agencies has diminished, requiring airlines to find more efficient methods of distribution.

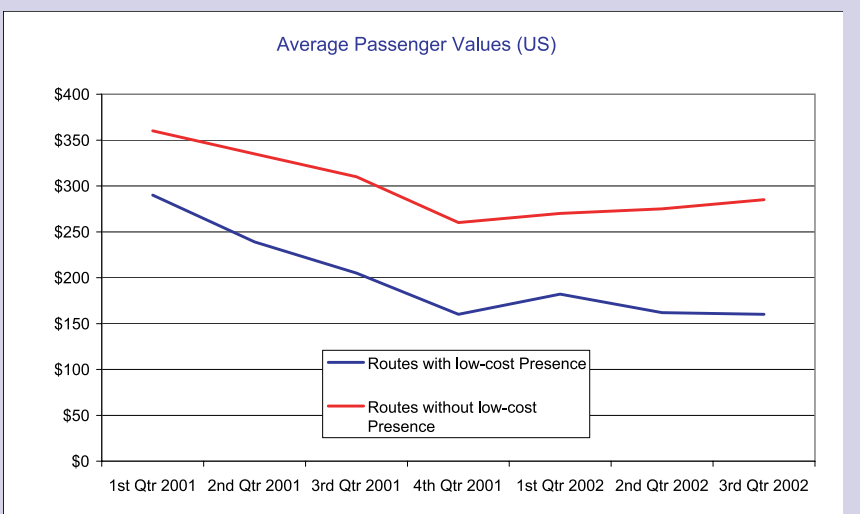
Decreased revenues

The impact that low-cost airlines have had on fares is significant. Network-based carriers have had to reduce ticket values by up to 70% to remain competitive in the new environment. This has permanently reset the value of air travel to a lower level.

Passengers are now more price-sensitive and are willing to fly with a competitor if they are unable to secure service from their preferred carrier at a low and competitive price.

In the US, Europe and elsewhere, airlines have embarked on price wars to maintain their market share. Delta has reduced fares wherever AirTran has launched operations to remain competitive. United, Continental and US Airways have taken the same approach with JetBlue.

In Europe, BMI British Midland, Aer Lingus, British Airways and Lufthansa,



Airlines are being forced to develop new ways to distribute and sell tickets because of downward pressure on fares due to increased competition, and passengers' increasing lack of time to search for fares and schedules.

among others, have matched the fares of low-cost competitors. This trend is repeated worldwide since failure to match fares would result in empty planes.

Analysis of US DoT revenue data *(see table, page 21)* shows the steady yield decline in the US domestic market. The decline is greater in markets where low-cost airlines operate. Those routes with a low-cost airline presence experienced a quicker rebound after September 11th, 2001. The continual decline is more pronounced in these markets, however.

Yield decline, while a constant phenomenon, has accelerated in recent years. The DoT's revenue data, while US-based, is generally representative of the industry as a whole: revenues are constantly decreasing and airlines need to find cost effective methods of reaching passengers in the new low-fare environment.

While low-cost airlines no longer have a significant price advantage, with network carriers matching their fares on all competing routes, the sustainability of this practise has been questioned. To this end carriers are constantly evaluating their cost bases to find greater efficiencies. The distribution cost is one area that all carriers are focusing on, evolving their existing business practises to harness the potential cost savings and revenue benefits.

Current distribution options

The different ways the public can purchase an airline's product are defined as distribution channels. The more distribution channels an airline has, the greater is its ability to reach potential customers and reduce its reliance on any one individual distribution source.

Airlines currently have three primary distribution options: travel agents, internet bookings and direct channels. Direct channels are airline-specific and include telephone reservations, the airline's own website, airport and city ticket offices, corporate travel staff and any other method where the client deals directly with the airline.

Emergent distribution options generally involve the use of internet platforms, because they provide the greatest flexibility, and rely on electronic commerce (e-commerce) development.

E-commerce is frequently assumed to mean using the internet to conduct business, but this is not strictly true. While the internet has initiated the rapid expansion of e-commerce by providing a low-cost platform for business transactions, the use of electronic platforms to manage the transactions of goods and services is well established. The airline industry has pioneered many groundbreaking e-commerce applications; the development of computer reservation systems (CRSs) to manage the sale of inventory is the most notable. Any new distribution option requires a link to the airline's CRS to enable booking management, with some distribution options being directly linked to the airline's CRS, thereby bypassing intermediary systems, including the internet.

Distribution control

Airlines control and manage the sale of their seats, generally defined as inventory, by using revenue management (RM) systems to determine what inventory to display in the CRS. A CRS is the airline's system that informs travel agencies and other booking systems what seats, or inventory, it has available in each class of travel.

Airlines invested in CRSs from the 1980s onward, with many airlines developing their own system. These early systems, termed legacy systems, are primarily transaction-focused. The CRS does not interact with a passenger beyond holding the booking, decrementing the inventory and pricing the itinerary. In response to the need for a more interactive passenger system, airlines developed direct booking channels, which direct the passenger straight to the airline without having an agent act as an intermediary.

Direct booking channels

The percentage of total bookings processed through direct channels varies, depending on the airline's direct booking strategy. Most US airlines average 42% direct bookings, with online bookings accounting for over 70% of that amount.

European carriers, which have been slower to respond to the internet, average 28% direct bookings split nearly 50/50 between the internet and call centres. Airlines place the majority of their super-

discounted fares on the internet in an effort to encourage customers to use internet booking.

Airlines have seized on the internet as a method of ensuring high visibility in all regions, while reducing their reliance on travel agents. Airlines have embraced the idea of direct selling, which allows them to bypass travel agents, thereby gaining significant savings by avoiding commissions and GDS fees.

"Direct sales certainly save the airlines on the cost side of the equation," says Steve Hendrikson, partner with Sabre Airline Solutions' Airline Consulting Services. "However, in the drive to push the passenger to direct booking via the internet, airlines often forget to check the revenue side of the equation. The discounts they offer to get people to move to direct bookings can often be greater than the commissions they would be paying an agent, so the net result is that airlines are diluting their own revenue streams. Airlines need to look at the price and cost sensitivities to determine what they can sell at, what is revenue positive, and what is revenue negative. Many airlines do not do this and erode their revenue levels as a result."

If used properly, the internet can be a powerful distribution tool, providing airlines with greater reach to customers than previously possible. Ryanair launched its website in 1997, and within eight months internet sales accounted for over 65% of total sales. By 2003 internet bookings accounted for 95% of Ryanair's total booking volume, or about 16.5 million passengers.

Low-cost airlines do not use travel agents as a distribution channel; the public are drawn to their websites through marketing and price sensitivity. Additionally, a passenger's itinerary is simple and does not require other services, like visas, which would increase demand for travel agency options.

Travel agencies

Travel agencies still account for the majority of airlines' revenues, and are the preferred option for most passengers, but they are the most expensive distribution method airlines have. Airlines pay travel agents a commission, normally about 7-9%, for each ticket that is sold. Airlines also agree to pay a further incentive, termed an override commission, if the agency achieves an agreed sales target, of a further 4-5%. For a $100 ticket an airline may be paying up to $14 in sales commission to a travel agent.

The other cost incurred by airlines is the payment of distribution costs to a global distribution system (GDS).

A GDS is a computerised system that checks each airline's available seats, provides a journey price, and makes the reservation if the passenger agrees.

GDSs charge airlines about $2.70-$3.40 per booking segment. A person on a return ticket from London to Frankfurt has two booking segments: London-Frankfurt and Frankfurt-London. An airline must therefore pay an additional $5.40-$6.80, taking the previous $100 ticket down to a net fare of about $80.

GDS fees vary depending on the system, but airlines must have arrangements with all of them. The four major GDSs (Amadeus, Galileo, Sabre and Worldspan) each control different geographical areas. Not participating with a GDS means the airline is not shown in a travel agency display, and no sales occur.

Airlines have repeatedly tried to remove their reliance on travel agents, because they do not wish to be anchored to one distribution channel. In the US and Europe airlines have reduced commissions, and some bookings are now zero commission based. Airlines have achieved this by working in unison to influence change. In other areas where agencies have more power, for example Africa or Asia, airlines have been unable to reduce commission rates.

Third-party internet sites

The other distribution option available is indirect internet distribution, which involves the use of a third-party websites, such as lastminute.com, Orbitz, Travelocity and Opodo, to sell tickets. These sites have been developed either by a conglomerate of airlines (Opodo and Orbitz), or by entrepreneurs (lastminute.com).

Airlines must pay to be represented on these internet sites, but can reap benefit from selling available seats for a lower cost compared to the higher cost of selling through travel agents. Lastminute.com and similar web-sites are termed opaque booking sites, because they do not let the purchaser see the airline offering the special fare until after the reservation is made.

Airlines have not invested significant energy into third-party sites, preferring to focus on their own dedicated internet site. However, with Opodo and Orbitz are both investigating new ways to reach customers, airlines may use these

websistes as a testing ground for improving the existing range of distribution channels.

Improved distribution options

Partly to reduce reliance on travel-agency distribution, and partly to reduce costs, airlines have embraced the flexibility that the internet provides.

Many future distribution strategies are built around internet options. "The internet is evolving into the backbone of future distribution platforms," says Hendrikson. "Airlines are pushing the idea of internet-supported platforms to distribute their products, as they provide 24/7 availability and can be targeted to specific customer requirements. The distribution options available are certainly burgeoning, with airlines now offering travel options via means that range from automatic teller machines (ATMs) to mobile phones. Travel has become a commodity item. You buy an air ticket like you buy any other consumable item: when you can afford it or when you feel like it. Airlines are beginning to tap passengers' impulse purchase nature by offering their product via multiple points, so people can access air travel easier. Only the internet can allow this to happen. While the methods of booking may evolve they will retain internet procedures because this is the only system that can provide the flexibility required."

The new booking channels that airlines are investigating are generally clustered around the development of mobile commerce (m-commerce).

The increased importance of internet-based distribution allows passengers to research and compare travel options easily and effortlessly. Wireless technology (Bluetooth), hand-held devices and mobile phones are all predicted to grow in preference as reservation interface tools. The most likely winner in the current distribution channel development is short messaging service technology.

SMS

Short messaging service (SMS) technology has been adapted to enable users to purchase air tickets. The SMS design requires users to establish a profile, complete with credit-card details, seating preferences and meal requirements, with the airline. The passenger completes a standard form that includes travel date and destination. The CRS processes the request and sends back the price, which the passenger can reject or accept. The acceptance procedure requires the user to input a personal identification number (PIN). When the PIN is received by the CRS the booking is confirmed, reservation finalised and credit card debited. The passenger is sent a confirmation SMS which includes the passenger name record reference. Several airlines are investigating this process, including Lufthansa and British Midland, but Emirates is the most likely launch customer.

WAP/Bluetooth

Wireless application protocol (WAP) and Bluetooth are both systems that allow mobile phone users to access the internet.

These allow systems to access the internet through them, like a wireless internet link for a computer, or to access the internet directly. Direct access requires the use of 3rd generation (3G) phone systems, which are only just being adopted in the UK and in Europe.

Users can use their phone to browse for flights in the same manner that they do on the internet. However, airlines are looking to send SMS alerts to 3G phone users, to make them aware of fare incentives that fit their profile. Some airlines are cautious about this technology, since it requires the acceptance of both 3G phones and internet access via phones, something that has been slow to occur. JetBlue investigated the options of offering this service to its customers, but decided that the risk of the technology being ignored was too great and is instead concentrating on its website.

Digital assistants/Tablet PCs

Personal digital assistants (PDAs) and tablet PCs are identified as the most likely channel to develop in popularity. The mobility function available to the user has seen their popularity increase, while the use of digital assistants has prompted manufacturers like Palm and Sony to invest considerable funds in linking them to the internet. Newer versions can now connect to the internet via a mobile phone (using WAP or Bluetooth), giving the user complete internet capability combined with mobility.

Many airlines, including Swiss, Delta and United have created significant download options that include schedules, booking profiles and frequent flier management software to ensure that the

In addition to new distribution mehtids, more airlines are increasing the use of self-service ticket kiosks and check-in desks to reduce all costs related to distribution and passenger services.

user's reliance on their PDAs translates to a preference for one particular airline. Bookings and confirmations are done in the same manner as internet bookings. The only difference is the mobility the PDA provides to the user.

ATMs

Bank cash machines have long been a target for airlines, but the banks have generally blocked moves to place air travel within the ATMs' function.

With banks now allowing users to top-up their mobile phone accounts and pay bills at ATMs, it is only a matter of time before tickets are also available.

South African Airways is investigating the possibility of using ATMs, as are German Wings, Virgin and Qantas. The link between an ATM and an airline's CRS is relatively simple, and payment is a very straightforward process. As banks are becoming more aligned with other key institutions, of which airlines are one, the possibility of using ATMs has increased. Several airlines claim they are in advanced stages of testing. No pilot programmes have been identified as yet, however. ATMs are a logical evolution for airlines, and this form of distribution will soon become commonplace.

Distribution benefits

The different distribution channels enable airlines to diversify their sales methods, relying on a combination of internet based options: web-sites; WAP/Bluetooth; e-commerce; and other options with direct links to the airlines' CRSs, such as ATMs and SMS.

Airlines are offering varied distribution channels to meet passenger needs as well as target their potential passengers better. "Airlines can really benefit by diversifying their distribution channels," says Hendrikson. "The targeting of passengers can become very specific. Sending messages to customers during the commuting period about available flight specials will certainly increase the booking volume. People will book spontaneously especially if they do not have to sit in front of a computer or visit an agent to purchase a ticket. This increases the airline's reach, which is vital to ensure that the airline 'owns' the passenger. Developing new distribution channels is important, not just from a diversification standpoint, but from a service standpoint. Offering greater service and convenience to passengers is always going to be a winner, providing the investment required is not excessive."

Challenges

The majority of airlines still operate legacy platform CRSs. The IT architecture utilised to operate these systems was first initiated in the 1960s and 1970s, with most systems having an operating lifespan of more than 20 years.

The industry has changed significantly since the launch of CRSs, including RM processes, frequent flier programme demands, electronic ticketing and internet booking. These operations must be tied to the CRS in a patchwork effect because the systems were not designed to perform these functions. The creation of global alliances has further complicated procedures, since each alliance member must be able to access other members' systems. This process requires an open architecture design that is not compatible with legacy-based CRSs.

Significant programming is required for legacy CRSs to provide operational effectiveness; the continually reducing pool of skilled programmers also affects overall efficiency. Carriers are often the owners of their own CRS, requiring them to absorb the cost of research and development (R&D), maintenance and usability.

Airline reservation systems must be altered to cater for each new distribution channel, adding a higher cost component to each distribution option. Distribution options must be balanced against the cost of integrating into the distribution channel. For example, it is inefficient to make an airline's reservation system Bluetooth-compatible if the cost makes return on investment minimal. This potentially restricts airlines from assuming a presence in all emergent distribution channels, resulting in lost revenue opportunities.

Third-party developers of CRSs have seen this market need and have designed systems to cater for this type of emergent technology that require no system modifications. At time of publication only two manufacturers have new-generation systems available (SITA and Amadeus) although other manufactures are expected to enter the market shortly.

Summary

While there is no risk that the internet will become obsolete, the way people connect to the internet is evolving. The use of internet-capable mobile phones, handheld organisers and other systems has led to the burgeoning of mobile commerce (M-commerce), which allows people to access the internet while on the move is a significant change.

Airlines, spurred by low-cost competition, are searching for new distribution methods. While thee need for travel agents will not disappear, airlines are seeking to reduce their reliance on them. The new distribution options are not designed as a total replacement for older distribution options, but they do allow airlines to spread their sales opportunities via multiple distribution channels. Changes in the airline industry, combined with technological evolution, have led to the development of new distribution options that provide airlines with the ability to place their product in front of more people at a cheaper price. This trend will continue as airlines seek new distribution methods. AC