Global alliances, e-commerce, revenue management, customer relationship management and no-frills carriers are effecting the design of new information technology systems. This has triggered a new era in airline information technology development.

Customised Reservation Systems

In today's marketplace airline managers are faced with a multitude of options when selecting central reservation systems (CRS) and central management information systems.

Numerous internal and external factors need to considered when an airline selects the technology for its needs. There are a number of major players providing complex complex reservation and revenue systems.

A shopping basket of options are available in varying forms and combinations. One has the ability to go to a vendor and have one-stop shopping. There is also the possibility of going a la carte and combining various IT pieces to best fit ones needs.

It could be inventory management, reservations, pricing and ticketing or revenue accounting. Capital costs, size of the organisation, time to marketplace, competition, the internet, and the advent of airline alliances all affect how decisions are made and what is required.

This article will look at the various indirect and direct inputs that affect the decision on purchasing a customised reservation system. Understanding how advances in new software development will be key to selecting a long-term IT partner or provider.

Because the industry is maturing, a major rethink on how business is going to be conducted needs to be made from an IT perspective. Six key elements have the most influence in deciding a technology partnership. The major areas include:

- Information technology (IT) logic of a host provider
- Marketing alliances
- Revenue management
- Customer relationship management (CRM)
- E-commerce
- The decision to become a no-frills carrier

The current marketplace for IT distribution and management solutions around the world is about 1,200 airline customers. The airline market can be categorised into three segments:

i) Tier 1: 100-200 major airlines, which each carry more than 7 million passengers annually.
ii) Tier 2: 400 no-frills airlines, which each carry more than 250,000 and up to 7,000,000 passengers a year.
iii) Tier 3: 600 small airlines, such as companies in the Caribbean, Africa which carry less than 250,000 passengers each year.

Suppliers

The marketplace is divided between a few suppliers, which provide the bulk of service for tier 1 and tier 2 customers. They include Speedwing a British Airways affiliate, Sabre with ties to American, Atraxis a Swissair subsidiary, Sita operating its Gabriel reservation system and Lufthansa IT division. All companies offer a full solution, but some have alliances with third party vendors for some of their core product, such as revenue management systems.

A third provider, Sita, a non-airline operating company, has developed an extensive a la carte list of products and services. Today it serves about 170 airlines. Its customers tend to be small and medium sized airlines which prefer not to take the service of the large IT producers. This gives them a higher degree of independence.

When buying these systems an airline basically buys the IT logic of that airline. If you purchase Sabre components you get American airlines logic, if you purchase Speedwing you get British Airways logic. Essentially all the major suppliers have all the same operational characteristics and all generally do the same job in a very competitive marketplace. They sell tickets to passengers through various Global distribution systems (Sabre Galileo, Amadeus), manage and account for revenue, provide airport check-in systems and get passengers on the aircraft.

Several new providers have recently started to show strong inroads to the marketplace. Hewlett Packard's (HP) Open Skies and Emirates' IT subsidiary Mercator both have customised solutions for their market segments, ranging from no-frills carriers to all-inclusive solutions for scheduled airlines. Mercator has gained valuable knowledge through an extensive technology agreement with Atraxis.

Mercator is quickly developing a

Mercator has a technology agreement with Atraxis and also teamed up with Sita to co-market the Rapid revenue management system. Mercator has customised the revenue management systems for cargo.

unique position in the marketplace. It had core product from the Swissair group and has a highly skilled software development group that is gaining foothold in several areas. Mecator has been moving ahead quickly by signing several co-operative agreements this year. It has teamed up with Sita to co-market the Rapid revenue management system, formed an alliance with Oracle to provide end-to-end integrated accounting and implemented Rapid revenue management and Oracle financial for Air New Zealand, Royal Brunei, Air Lanka, and Olympic. It has also customised the revenue management systems for cargo and sold it to British Airways.

HP Open Skies has built a turn key system for no-frills airlines. It has been successful at selling its logic to almost every new no-frills carrier.

It is a case of the operating system's logic being perfectly tailored to the needs of the new carrier's requirements. Open Skies is a comprehensive "airline in a box" solution. Unwrap it, plug it in and infrastructure will be operating in 60-90 days.

In either case both Mercator and HP Open Skies offer one-stop shopping for the market for tier 1 and 2 airlines. They both offer a fee structure based on how many people actually get on the plane, which makes an attractive solution for small to medium sized airlines. The suppliers can provide an out-sourced data centre. This reduces capital investment, IT administration and required technical knowledge. They provide a quick implementation time and also the ability to pay-as-you-go for future products upgrades.

Marketing alliances

Just as the market has matured from a major IT suppliers' perspective, the evolution of airline alliances is quickly evolving and starting to have influences on what IT airlines need to purchase. The desire to become part of an alliance is starting to mean accepting the logic and products of the major carriers within the group.

The traditional pricing structure was always cost prohibited for some of the tier 2 airlines to purchase systems, as the major suppliers never came up with a pay-as-you-go system, such as HP Open Skies or Mercator.

Today there is a direct benefit to the IT subsidiary of an major alliance partner by bringing in tier 2 customers to further enhance the major carriers' market coverage. If American Airlines wants an airline as a franchise then it will get all the benefits of Sabre.

If the decision is to join the alliance is determinant on gaining additional revenue through increased market coverage (code-sharing and higher yield (interlining and enhanced revenue management), then this criteria may outweigh the decision to purchase an independent or competing reservation product. There is also the ability to mix and match products, but there may be restrictions placed by the alliance partner as it tries to secure a stronger market and take total control of the tier 2 partner.

The Qualiflyer alliance members use a similar reservation system of the partner IT company Artaxis; a subsidiary of Swissair. Even within the smaller tier 2 group commonality of reservations systems is key to providing maximum co-operative marketing and revenue generation. Commonality brings with it a high degree of control which can further strengthen a disjointed group. Such a group would be looking for economies of scale. Membership may have its benefits, but the privilege may bring a more restrictive environment.

Revenue management

As these global alliances grow so is the interaction in revenue management systems. Take for instance the Star alliance. There are several members which use the same revenue management systems. They have the opportunity to work together with code-share flights for true origin and destination traffic.

Eventually the interaction of several carriers can be operated as one aggregate network. If one is a small airline partner joining a large alliance group, the sophistication of revenue management may be determined by the group where it looks at the connectivity benefits, rather than the small carrier looking at its requirements for a single sector trip.

One has to decide whether strategy is a bottom-up approach, where the gist of marketing is to sell cheap seats first and adjust the inventory allocation (the no-frills carrier). Conversely an airline could sell high yield fares in a premium service, which are yield managed to be sold at a priority, while the back of the aircraft is discounted.

The two approaches are different, but the traditional airline model has been built around the hypothesis of selling top-down.

When is comes to using revenue management tools for either group of airline classification, the principles are the same. Maximise revenue through managing availability within certain fare bands tied to historical demand, which in turn maximises total revenue.

Scheduled full service tier 1 airlines have made enormous efforts to keep the availability of high yield fares open to the last minute traveller, while taking the risk of letting seats go empty. This is different to the no-frills airline strategy of filling the aircraft with the lowest fares first and possibly letting the aircraft go out full. No-frills strategy reduces the risk of not filling seats in event of a high yield customer coming in at the last minute.

There are numerous revenue

management systems that do an excellent job of providing a complex set of forecasting and inventory. Revenue management tends to increase yields by about 5%. There are packages that work well for the no-frills market, while others are sophisticated enough to provide yield increases for airlines that are partners in global alliances. In the no-frills market a system can be managed by one or two people, where manually it may require five or six which are highly qualified in operations research.

A survey of HP Open skies customers revealed that all customers purchased or leased the revenue management package at the beginning to supplement their central reservation systems.

While profitability seems to have eluded most of the traditional airline market, Southwest has virtually written the book on how to be successful using the bottom-up strategy and customised revenue management systems.

Customer relation management

Everyone is talking about customer relationship management (CRM). This issue is just in its infancy phase. In the traditional sense most information about a customer had been held either as a passenger name record (PNR), or within the frequent flyer database.

What is needed is an integration with new database structure to fully capitalise on the information. Airlines need and should be able to take full advantage of a passenger's entire user profile at the time of reservations. It would seem logical that a passenger profile should be the foundation of a booking system with airline's segments added as appendages.

The technology in place today has been around for many years. Numerous airline reservation companies are now in the process of looking at how to transform their processes as customer demands are getting more and more sophisticated. If Internet companies can have intelligent profile engines like Amazon.com, it can only be a matter of time before airlines reap the same benefit. In the near-term we should start to see direct marketing technology that will go far beyond the static information stored in the database.

In a new frame set a customer would give its name and its entire profile would appear with all their relevant history. In spite of whether this would be through the internet, or directly dealing with a passenger agent, the entire communications and booking history would be outlined instantaneously.

Reservation agents will be able to see exactly what has been built on the internet. They will have available to them numerous items such as:

- What fares one paid recently.
- When a passenger last travelled.
- How many times a passenger called in for a confirmation or change of reservation.
- What continuous special requests a customer has, beyond meals and a seating preference.
- Whether the passenger had problems on its last flight.

Although some of this information is held within the PNR, it is static and held within the booking itself. It has not been extracted and tied a to customer management profile. It could be argued that information like this is within the frequent flyer database, but it is not systematically tied to the PNR structure.

While we have all dealt with various companies making requests for services, it seems that the airlines' environment has lagged behind in bringing all the pieces together. Many IT departments with the companies that sell systems are working on CRM products that will enhance the customer's service aspects.

The formation of airline alliances has meant that all members are likely to have to adopt the revenue management systems of the major members in the group.

E-commerce

The travel industry, specifically the airlines, was the first group to embrace the power of the internet. It has provided an effective communication distribution tool for the industry, introducing a high level of dis-intermediation and the ability of carriers to take a substantial part of the distribution and turn it into direct on-line marketing.

We have seen specialised auctions sell off all sorts of direct marketing schemes coming from the airlines. Even consolidators which have bulk contracts tied into on-line reservation systems are competing with the airlines themselves at times. In the past we had the travel agent and airlines, and markets could be segmented effectively. Now someone can purchase consolidated tickets from an on-line e agency in London, while sitting at home in Los Angeles. Now internet web sites are simultaneously searching airline websites for specials and comparing them to rates published in the global distribution systems that sell to travel agencies.

It will not be long before software companies build software that constructs fares as connections between scheduled and no-frills carriers. Can it be long before you can purchase a British Airways long-haul ticket in conjunction with a Virgin Express short-haul ticket?

The advert of e-commerce means it may not be long before software companies construct fares that make connections between short-haul no-frills flights and long-haul flights operated by traditional carriers.

The possibilities are endless when one starts to consider the opportunities in selling additional items to people when the passenger books. This could include duty free items, on board services such as renting a digital video disk player, with your pre-order selection of movies, or customised prepackaged food like lunch boxes. We will also start to see more co-ordination between airport related retail activities and the flight.

Airline passengers have a long period of dwell time at airports with a lot of disposable income. All the major airline software companies and airlines themselves have committed large sums of money development to e-commerce solutions. One should determine where in the development phase many of these companies are, and how it can assist an airline in achieving marginal revenue.

Cost savings are also coming through electronic tickets, which has allowed no-frills start-ups to sell directly cheap. Easyjet in the UK is now selling 40% of its tickets on-line. Several US based carriers charge extra for telephone reservations when buying surplus tickets from the internet inventory.

Although it is only in its infancy today, the use of internet-based technology will have a major effect on all aspects of the airline business in selling to its customers. E check-in is appearing on many fronts, lessening the work-loads on airport staff. E–commerce will also take grasp of the other airline services from cargo to e-billing of airline charges from airports and other suppliers. Significant savings will start to be realised when business-to-business intranet solutions are built with organisation to minimise the human factor.

Criteria for no-frills

Several key elements must be looked at when deciding whether an airline has the foundation for being a no-frills carrier. The major differences are in the distribution environment. This aspect has allowed the proliferation of no-frills into the market. Elements that need to be examined include:

- Is code-sharing required to achieve maximum coverage?
- Is interlining a requirement to attract as many customers as possible?
- Does inventory need to be listed in numerous global distribution systems to maximise the chances of obtaining more customers and higher yield?
- Is your marketplace sophisticated enough to use new technology to purchase tickets directly?
- Does the short- to medium-term strategy depend on being a participant in a global or regional marketing alliance?
- Do you want to have a top-down revenue management strategy like a scheduled airline?

If the answer is no to most of the above items then you will not achieve significant revenue opportunities participating in a traditional airline distribution environment. A no-frills system such as the HP Open Skies product would then best fit an airline's needs.

Senior airline managers today are faced with an expansive range of scenarios, and decision criteria in contractual obligations of starting a new carrier or upgrading a CRS. The scope and magnitude of options can sometimes be overwhelming.

The traditional marketplace has been driven by large companies which operate in a global marketplace. The single most important criteria, is does your solution provider understand the complexities of how your connectivity relationship needs to work, and do they have a set of products or products under development that meet anticipated needs of the areas mentioned with this article? The basic underlying criteria would be to work with a solution provider which understands your marketplace and needs and can provide local support.

Summary

When looking at the aspect of customisation it can be broken down into several categories:

1. Is there a single-source vendor who has a product that fits my needs exactly? Yes there are vendors to supply no-frills airlines and provide services for traditional code-sharing.

2. Is there a vendor which has a geographical presence that can support an IT infrastructure and assist us in migrating to a new systems? Yes all IT vendors have these capabilities, and they are located in all regions around the globe.

3. Is there an IT company that can provide all these services for less than 250,000 passengers a year. Yes, Sita has tremendous experience in the tier 3 market and has been very successful in the charter market. Sita is used by 600 airlines around the world.

4. Are all the major providers working feverishly to implement e-commerce solutions? Yes they are.

The largest difference between competing IT companies in the future is who is going to have the best set of products of e-commerce, customer relationship management and data warehousing tools. As one-to-one marketing relationships become commonplace, IT will once again become a competitive advantage.

Understanding where a potential IT provider is in an airline's development cycle will greatly enhance the ability to differentiate itself, at least for a short time. Customised information systems are available at your finger tips, with lots of new capabilities and systems being developed. AC