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Aviation 2010

Achieving efficiency
and differentiation in
turbulent times

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Aviation 2010

Achieving efficiency and differentiation in turbulent times

By Charles Vincent, Maureen Stancik Boyce, Jordan Strik and Douglas Polizzi

Airlines and airports face escalating costs, revenue growth constraints and an increasingly dissatisfied customer base. By offering passengers a highly differentiated experience and simultaneously enhancing its operational efficiency, the aviation industry can position itself to become and remain profitable in a volatile business climate. To accomplish this, we believe the industry should adopt a new business model that combines distinctive customer services, a flexible infrastructure and greater collaboration, both among partnering airlines and between airlines and airports.

Introduction

The world of commercial aviation has changed dramatically during the past few years. If anticipated trends come to pass, these changes will continue – and in a fashion likely to make the business climate even more difficult for airlines and airports.

Challenges in operational costs and increased competition

- Jet fuel prices more than doubled between 2001 and 2005, and most analysts believe prices will remain volatile for the foreseeable future.¹
- Global public- and private-sector spending on anti-terrorist goods and services reached US\$59 billion in 2006 and is expected to virtually double by 2010.²
- Low-cost carriers now account for 16 percent of all flights worldwide, compared with just six percent in 2001.³ The number of low-cost airlines continues to increase, and some are beginning to enter longhaul markets.

Challenges regarding differentiation and the customer experience

- The airline industry earned a lower customer satisfaction score than all but two other industries in 2006, according to the American Customer Satisfaction Index.⁴
- Low-cost carriers surpassed the traditional network airlines in at least one major customer satisfaction survey by J.D. Power and Associates.⁵
- The global average rate of self-service check-in via kiosks is expected to be 38 percent by the end of 2007 and is forecast to reach 50 percent by 2008, a shift that will transform passenger processing and give customers much greater control over their journeys.⁶

All of these challenges point toward the need to develop a new business model for the aviation industry. The current business model is based on a trade-off between cost and quality of service. But research by IBM Global Business Services shows that, to improve

their customer image and help increase their profitability over the next three years, leading airlines and airports will likely need to adopt a hybrid business approach, which we have called the Smart Aviation Model.

To create the Smart Aviation Model, three attributes are particularly important:

- A differentiated passenger experience that gives customers more choice, while remaining cost-effective to deliver
- A flexible infrastructure that can be scaled up or down with fluctuations in demand
- Greater collaboration, both among partnering airlines and between airlines and airports.

In short, this business model is designed to simultaneously provide service differentiation *and* operational efficiency.

In the fourth quarter of 2006, IBM conducted a survey of senior aviation executives to find out what most concerns them (see sidebar, *Survey methodology*). We have now identified the emerging technologies that can help them achieve their goal – delivering a profitable service that meets or beats the expectations of their customers.

- *Self-service solutions:* Self service has become a cost-effective way of giving passengers the choice and control they expect. Close collaboration among travel providers is essential to deliver end-to-end service, as is a shared infrastructure to increase the range of self-service solutions that can be offered, while reducing the costs of providing them.

- *Integrated baggage handling:* Joint IT systems and processes, electronic tracking technologies, such as radio frequency identification (RFID), and the separation of baggage handling from passenger processing can help enable airlines and airports to reduce their baggage-handling costs and offer customized baggage services, while reducing the high percentage of lost and delayed bags.
- *Shared services:* The aviation industry has considerable experience in outsourcing, but is much less accustomed to using shared services. An advanced form of service sharing enables multiple organizations to share commodity applications and substantially reduce their infrastructure costs.
- *Modular, flexible airport operating systems:* If airports are to keep up with the growth in air travel and deliver better service, they will need to become more efficient. They will have to adopt a modular, flexible architecture that can receive and route data to multiple points within the network, including flight information display systems, ground crew systems and catering systems.
- *New security technologies:* The growing threat of terrorism has sent security costs soaring and has alienated passengers. Several emerging technologies can help alleviate these problems, including fingerprint recognition systems, automated document identification systems, iris-scanning systems, facial-recognition technologies and data analysis systems for pre-screening passengers.

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A rapidly changing industry

The aviation industry is changing rapidly – and we believe this pace will accelerate over the next two decades. The Airports Council International (ACI) predicts that the number of global passengers will rise from 4.3 billion in 2006 to more than 5 billion by 2010 and more than 9 billion by 2025.⁷ Much of this growth will take place in Africa and Asia Pacific, where passenger traffic is forecast to increase by at least 7 percent and 6.8 percent a year, respectively, over the next three years.⁸ By 2025, Asia will be the world's largest aviation market – up from third place today – as a result of fast-growing economies like China and India.⁹

The freight market is expanding even more quickly. The ACI estimates that it will nearly triple between now and 2025, with particularly rapid growth in Africa, Asia Pacific and the Middle East. Total aircraft movements will almost double over the same period, with the result that substantial investments in new airport infrastructure will be needed, as will enroute and terminal air traffic control systems.¹⁰

Survey methodology

We surveyed senior aviation executives working for more than 20 airlines and airport authorities in North America, Europe and Asia to identify their key concerns, strategic focus and investment priorities. Our survey included chief executive officers, chief information officers, chief finance officers, corporate planning directors and heads of IT customer strategy. We supplemented our findings with interviews with a number of industry executives, secondary research, and input from IBM industry specialists around the world.

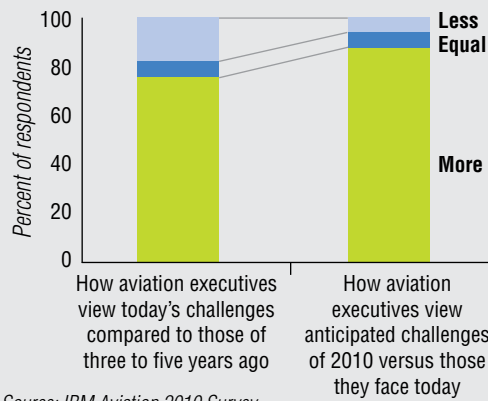
As the volume of global passenger and cargo traffic continues to rise, and the threat of terrorism becomes more acute, the safety measures required to protect the traveling public will also increase. But passengers dislike the additional time they have to spend going through security checkpoints and the restrictions on what they can carry onboard. Together with the increasing number of lost or delayed items of baggage and declining levels of customer service, this helps explain why airline customer satisfaction has been steadily declining and is now lower than for almost any other industry.

Moreover, aviation passengers are becoming more demanding about what they get for their money, and the competition among travel providers is so intense that they have been forced to keep fares quite low. Competitive pressures and low-cost initiatives have jointly transformed the market dynamics of the aviation industry to a greater extent than they have other sectors, such as the rail industry. A standard open return train ticket from London to Manchester (which is about 200 miles north) currently costs US\$436 (£219), for example. But for just US\$757 (£380), it is possible to fly from London to Bangkok and back – a one-way distance of nearly 6,000 miles.¹¹

However, even though the aviation industry has already undergone many changes in the past few years, most aviation executives believe the environment in which they operate will become still more turbulent in the future. Eighty-eight percent of the aviation business leaders who participated in our survey anticipate that the challenges they face in 2010 will be greater than those they face today (see Figure 1).

Jet fuel prices more than doubled from 2001 to 2005 and are expected to stay volatile.

FIGURE 1.
Industry executives believe that the landscape will be more challenging by 2010.



The priorities of the aviation industry

Our survey also shows that aviation executives have some common concerns, although the challenges facing airlines and airports differ in certain respects. These priorities can be clustered into three broad categories: managing rising (and increasingly volatile) costs, removing or reducing the constraints on revenue growth and pleasing customers (see Figure 2).

Rising costs

Rising costs have already taken a heavy toll on the industry. Jet fuel prices more than doubled between 2001 and 2005 and are expected to stay volatile. In 2005 alone, higher fuel prices pushed up costs per available seat kilometer (ASK) by as much as 10 percent.¹² The industry's profit margins and returns on invested capital (ROIC) have fallen accordingly. Between 2001 and 2004, the leading airlines realized an ROIC of just 3.3 percent – little more than half the 6.3 percent they realized in the four years prior to 2000.¹³ The situation was particularly parlous in the United States, where the ROIC fell from 7.2 percent to 2.5 percent.¹⁴

The network airlines have worked hard to reduce their operating costs and close the gap between themselves and the low-cost carriers. However, they are still trailing significantly behind these more cost-effective rivals. The differences are smallest in the United States, where there is strong competition on most routes. But in Europe, the leanest low-cost carriers have costs per ASK between US\$0.04 and US\$0.12 lower than those of the network airlines (see Figure 3).¹⁵

FIGURE 2.
The common concerns of airlines and airports can be clustered into three broad categories.

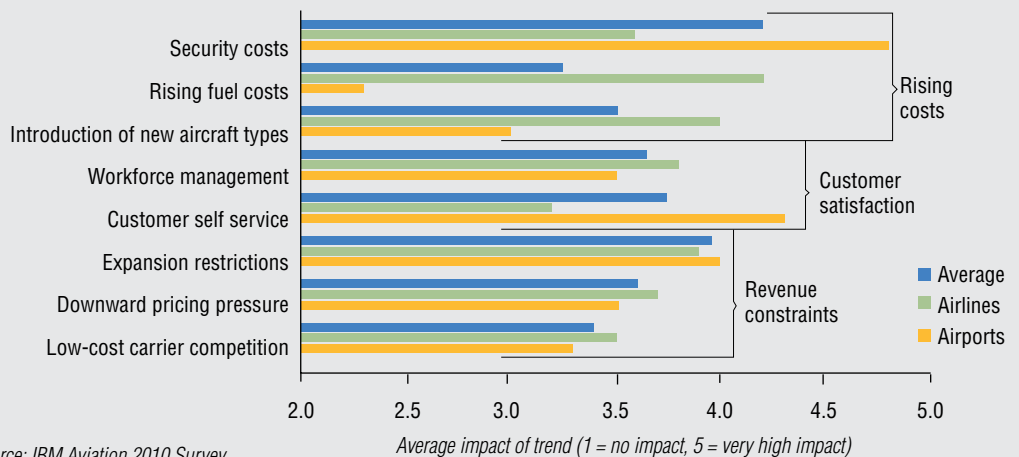
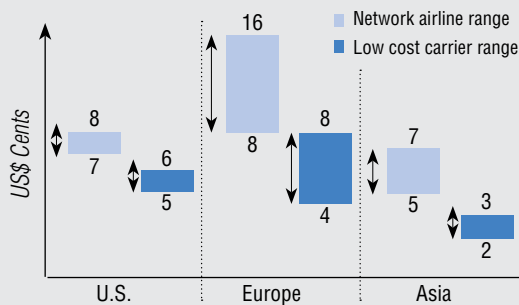


FIGURE 3.
Costs per Available Seat Kilometer varied substantially between the network airlines and low-cost carriers in 2006.



Source: International Air Transport Association, "Airline Cost Performance Briefing," 2006; IBM Global Business Services analysis.

Revenue constraints

Several factors have also constrained the industry's ability to increase its revenues, a trend that may well get worse as fears about global warming escalate in political agendas. Environmental issues have already resulted in the delay or cancellation of a number of airport expansion projects in the United States. The introduction of tighter federal regulations on de-icing operations and oil spill prevention planning, together with new state and local agency directives to control air pollution, is expected to compound these difficulties.¹⁶

The situation in Europe is similar. Only two major new airports (in Berlin and Lisbon) and two new terminals (in London-Heathrow and Frankfurt) are currently under construction, and all four programs have encountered considerable political and legal obstacles.¹⁷

Conversely, the transport infrastructure in Asia Pacific is expanding rapidly. Countries like India and China are building numerous new

airports, although the initial beneficiaries of this expansion will be the low-cost carriers and airports serving regional flights. In March 2006, for example, Malaysia and Singapore both opened "no frills" terminals specifically for budget travel, but not all airports have the space to accommodate different kinds of terminals.¹⁸

These restrictions on the aviation industry's expansion have been exacerbated by the relentless downward pressure on prices. Between 1996 and 2006, the U.S. Air Travel Price Index – which documents quarterly changes in airline prices for U.S. carrier itineraries originating in the United States – rose by just 14.8 percent, barely half the 28.5 percent by which inflation increased over the same period.¹⁹

Customer satisfaction

Meanwhile, the drive to control costs has compromised the passenger experience. Many of the network airlines have cut the number of customer-facing staff they employ, with a correspondingly negative impact on their customer service; in the 12 months before February 2007, for example, there was a 49.6 percent increase in the number of passenger complaints about U.S. domestic scheduled-service flights.²⁰ The leading carriers have also reduced the emphasis they place on investments to improve customer intelligence and upgrade or replace aging loyalty systems, the IT infrastructure that runs customer retention programs. Moreover, although they have increased the number of self-service options they offer and implemented customer relationship management systems, they have failed to integrate these solutions across multiple channels – such as the Internet, call centers, PDAs and airport agent desks.

In short, our survey shows that customer satisfaction is one of the major concerns of airline executives (as Figure 2 indicates), but cost-cutting measures are directly affecting the level of satisfaction customers feel. Yet lower costs do not automatically lead to lower levels of customer satisfaction; on the contrary, low-cost carriers JetBlue and Southwest now garner higher scores than the network airlines in customer satisfaction surveys conducted in the United States.²¹ Thus, any airline that wants to reduce its costs must think very carefully about how it does so.

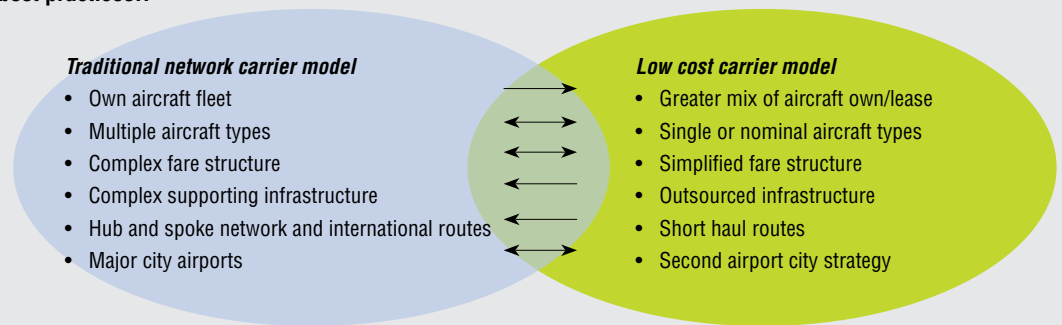
The emergence of hybrid models

The traditional network airlines and low-cost carriers have responded to all the pressures they face by borrowing from each other's operating principles. Most network airlines have reduced their fares, increased the number of direct flights they make and switched to more fuel-efficient aircraft, while

most low-cost carriers have expanded the services they offer to attract business travelers and extend their market reach (see Figure 4).

However, aviation executives everywhere recognize that this will not be enough. The majority of those we surveyed think that major changes in the industry's revenue/cost model and processes will be required to improve its operational efficiency. U.S. and European executives also said it would be necessary to negotiate new employment contracts and persuade employees to adopt new working practices, while Asian executives expressed concern about the difficulties in recruiting good personnel and the higher costs associated with employing an aging workforce. But enhancing the passenger experience is the single most important issue on which industry executives believe they should focus over the next few years, even though it is more costly than other options (see Figure 5).

FIGURE 4.
Hybrid models are developing as network airlines and low cost carriers borrow from each other's best practices..



Source: IBM Institute for Business Value.

FIGURE 5.
Aviation executives believe enhancing the passenger experience is the most important area on which they should focus over the new few years.



Source: IBM Aviation 2010 Survey.

The Smart Aviation Model

A strategy based solely on cost or service will not, in our opinion, solve the problems faced by the aviation industry. The leading airlines and airports will have to master the art of differentiating themselves and becoming more efficient.

Our research shows that there are three key features that can positively influence the aviation operating model.

Key attributes that can positively influence the aviation operating model

1. The passenger experience
2. Development of a variable and agile infrastructure and organization
3. Partner collaboration.

Some of these features are more important in some regions than in others. The consolidation and rationalization of the North American aviation industry has resulted in a highly commoditized market, for example, with limited variance in differentiation among the domestic carriers. They have already outsourced many of their non-core activities, reduced their costs and improved their operational efficiency – largely because fierce competition and bankruptcy restructurings have forced them to do so. As one North American survey respondent noted, “There probably are still some additional outsourcing opportunities, but the business case has gotten tougher as the legacy carriers have cut costs and become more efficient.”²² The key challenge for most U.S. airlines, then, is to cost-effectively differentiate themselves from their rivals.

In Europe, by contrast, there is a much greater degree of differentiation in the products and services airlines offer, but there are equally major variations in efficiency. The profitable network airlines will, therefore, become increasingly vulnerable to increased competition from low-cost carriers such as Ryanair (Ireland), easyJet (UK) and Wizz Air (Poland). Unless they can proactively cut their operating costs, reduce mean connection times and collaborate much more extensively – both with each other and with the airports where they operate – European airlines might face the same low-cost competition as U.S. carriers.

In Asia Pacific, there is also high a degree of differentiation among airlines as a result of cultural and geographical elements. The rapid expansion of the market in this region will support a wide range of operating models. But the competition is increasing, as a growing number of low-cost carriers are launched. This trend is already forcing some network airlines

The ability to deliver a passenger experience both differentiated and operationally efficient is of paramount importance.

to focus on their core networks and services – or launch reduced-service airline subsidiaries to compete on specific routes. In 2004, for example, Qantas set up Jetstar specifically to address the threat posed by low-cost airline Virgin Blue, with which it competes directly in Australia, and to provide a service for the budget-conscious international market.

The challenges facing airlines in each region vary somewhat, but the ability to deliver a passenger experience both differentiated and operationally efficient is of paramount importance everywhere (see Figure 6). More specifically, airlines and airports need to:

- Create a better passenger experience by implementing a much wider range of self-service solutions that give customers more choice, flexibility and control over their travel
- Build a variable infrastructure by focusing on their core business functions and outsourcing non-differentiating processes and services to external providers, which should, in turn, enable them to adjust their costs in line with demand
- Use shared processes to a much greater extent.

Five key technological innovations

We have identified five technological innovations that can help the industry deliver these features over the next three to five years.

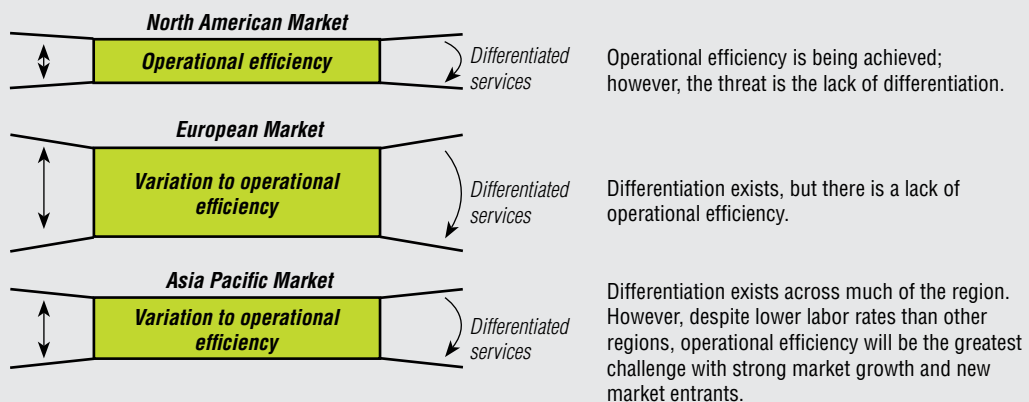
These are innovations we believe are both feasible to implement and promising – in terms of the opportunities they offer for optimizing capital resources, reducing costs and enhancing the customer experience.

Self-service solutions across the whole travel chain

Self service began as a means of cutting costs, but has now become a way of giving passengers the choice and control they expect. However, many airlines and airports still use separate systems for managing different customer touchpoints and channels. If they are to cater to the projected increase in passenger numbers and become more efficient, they will need to collaborate more closely and migrate to a shared infrastructure to optimize the range of self-service solutions they can offer, while reducing the costs of providing them.

FIGURE 6.

The Smart Aviation Model combines efficiency with differentiation.



Source: IBM Institute for Business Value.

The predominant form of self service is currently the check-in kiosk, which is now reaching the mature stage of adoption. Providing more benefits is the Common User Self-Service (CUSS) check-in kiosk, which enables different airlines to provide passenger facilities at a shared kiosk and split the running costs. As well as reducing the amount of space airports need to dedicate to such facilities, CUSS kiosks are much more economical – and the arguments in their favor are compelling. The average cost of checking in a passenger through a human agent is US\$3.05, while kiosk check-in is between US\$0.14 and \$0.32 and online check-in is even less.²³ The International Air Transport Association (IATA) reports that, in 2006, the average savings at the 33 airports that used CUSS kiosks were US\$2.50 per check-in.²⁴

Forrester, an independent technology and research company, estimates that nearly 70 percent of business travelers used airport kiosks in 2005.²⁵ And when British Airways moves to its new headquarters at Heathrow's Terminal 5 in 2008, it aims to get 80 percent of its customers to use self service.²⁶ IATA estimates that, if 40 percent of all check-

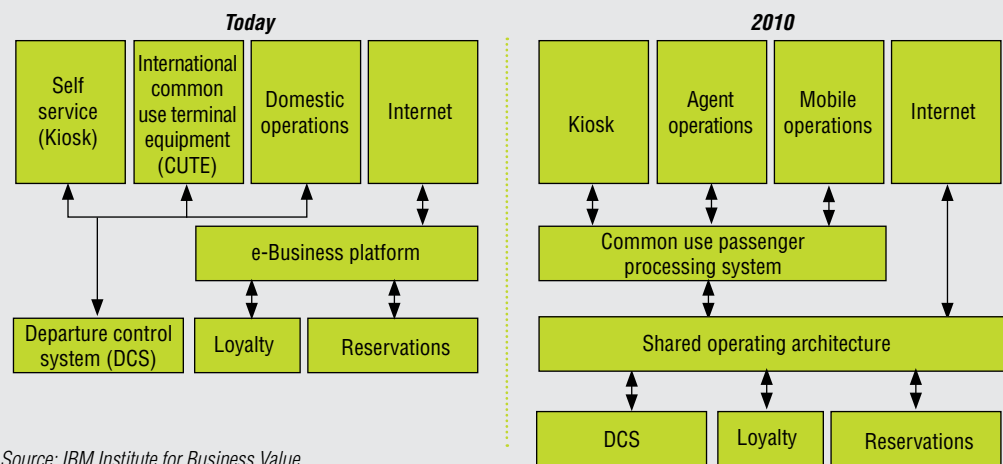
ins were performed using CUSS kiosks, the industry would save US\$1 billion a year.²⁷

As passengers become more and more comfortable with self service, we anticipate that the industry will also expand the range of self-service solutions it provides. The next generation of self-service solutions will encompass reservations, loyalty systems and departure control systems – delivered via the Internet, kiosks, and text messaging – and will enable customers to control more of their end-to-end travel experience.

However, the industry will have to provide multiple service channels, since different age groups adopt new technologies at different speeds and access to the Internet is not always available. It will also have to migrate to a unified multichannel platform that supports multiple touchpoints and transcends existing channels. One of the key components required to support this infrastructure is a service-oriented architecture (SOA), which uses a “hub-and-spoke” configuration to link different legacy systems independently of the platforms on which they operate (see Figure 7). The development of the Common Use Passenger

FIGURE 7.

A service-oriented architecture and the CUPPS standard will play a major role in enabling the aviation industry to offer a wider range of self-service solutions.



Source: IBM Institute for Business Value.

Processing Systems (CUPPS) standard will also facilitate the creation of new common-use airport implementations.

Integrated baggage handling

If the aviation industry is to manage bigger passenger loads, while reducing its overall handling costs, it will need to lower irregularity (IR) rates – the number of bags that are delayed or permanently lost. Mishandled baggage currently costs the airlines about US\$2.5 billion a year, and more stringent security requirements will likely exacerbate this.²⁸ When the ban on the inclusion of liquids in hand luggage was introduced in August 2006, for example, there was a 25 percent increase in the number of bags that had to be checked in rather than carried on board.²⁹ The strain on the industry’s infrastructure caused a huge surge in the amount of baggage that went astray.³⁰

The need for tighter security has also driven up costs. The U.S. Transportation Security Administration (TSA) spent US\$3.1 billion on baggage screening in 2002 in the wake of September 11, 2001, and is currently planning to invest as much as US\$7 billion in a new state-of-the-art screening system.³¹ Many airlines and airports have also been forced to make substantial investments in extra security measures.

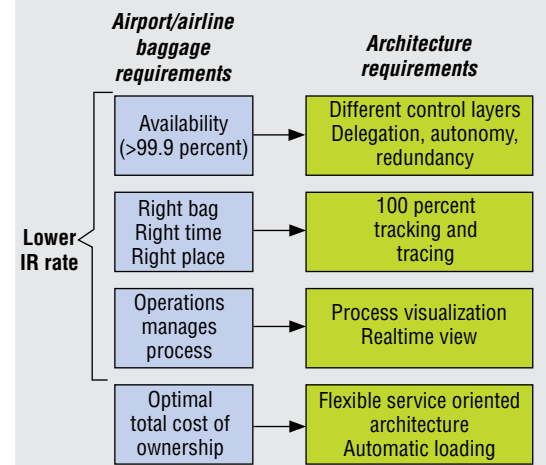
In addition, poor baggage management drives up fuel costs (since weight is the single biggest factor determining fuel consumption), landing fees and other expenses. It is also, of course, a major factor in contributing to low levels of customer satisfaction. And, with the volume of passenger traffic forecast to double over the next 15 years, the already high peaks in baggage loading during the day will probably become even worse.³²

One of the biggest issues to be resolved is the fact that airports and airlines do not generally take a holistic approach to baggage handling; they use different systems and processes

– and, during peak periods, even a five-minute period of downtime for baggage-handling systems is enough to affect thousands of bags. Baggage systems are also configured for a continuous flow of baggage, but flight arrivals and departures are more frequent at certain times of day. And most airlines and airports use manual processes to communicate any changes in schedule to the workforce.

So, airlines and airports need to work together much more closely. They need to create an integrated, automated infrastructure that not only links the baggage-handling systems and processes of different service providers, but also links the baggage-handling process with other key processes such as reservations (for load estimates) and check-ins. Using joint IT systems and common baggage identification standards, and sharing financial and administrative responsibility for the process, can enable the industry to develop baggage-handling systems that are better able to cope with peaks in baggage loading and capable of detecting disturbances before they become critical (see Figure 8).

FIGURE 8.
Aligning the different technologies used for baggage handling will improve the process.



Source: IBM Institute for Business Value.

Most airlines and airports will probably make the transition to shared services gradually.

The network airlines will also have to separate the financial and physical processes for managing baggage from those for dealing with passengers, as most low-cost carriers already do. The current system, where passengers are automatically entitled to take a certain amount of luggage with them, is expensive and ignores differences in travel habits. But, if the network airlines separate the two processes, they can outsource baggage handling to third-party specialists and concentrate on their core business. In addition, they can offer customized services like offsite baggage pick-up and delivery, as well as baggage status updates. This would have two advantages: it would save passengers from having to carry heavy bags themselves, and it would enable the airlines to balance loads more effectively by sending bags in advance outside of peak times.

Lastly, the industry will have to invest in track-and-trace technologies such as RFID. According to air transport communications specialist SITA, 45 percent of all airports worldwide already use RFID in their baggage-handling processes – or plan to use it by 2010.³³ And, as the technological costs continue to fall, the business case for investing in RFID is becoming increasingly persuasive.

Next-generation shared services

The aviation industry has considerable experience with outsourcing, but it is much less accustomed to using shared services – and, as a mature industry, which has already engaged in considerable cost-cutting, this is a radical change it must make to further reduce costs. There are three levels of service sharing: traditional application hosting, where a third party provides a single organization with a dedicated infrastructure, hardware, software and resources; common services hosting, where a third party provides multiple clients or partners with a dedicated infrastructure,

enabling them to share newly implemented and in-use applications; and an advanced form of service sharing, where a third party provides multiple clients or partners with the same commodity infrastructure and manages it on their behalf.

The last form of shared services offers substantial advantages. It enables companies to reduce their infrastructure costs dramatically by sharing an infrastructure with other organizations and reaping the resulting economies of scale. It allows them to vary with fluctuations in demand the applications they use and the extent to which they use them. And it relieves them of the need to purchase, manage and maintain their own applications.

Most airlines and airports will probably make the transition to shared services gradually. They will start by outsourcing fringe elements of their infrastructure and progress to core activities once they are confident the shared-services model works. In fact, we believe common fare engines would provide a good testing ground. The industry has already started to experiment with alternative distribution systems, and many of the new entrants that supply these services use a shared-services platform for collecting payments.

Modular, flexible airport operating systems

In order to keep up with the growth in travel and meet rising passenger expectations for an easy transit, airports should also improve their operating systems. The ACI estimates that demand for flights will outstrip the global airport infrastructure by about 1 billion passengers in 2020, leaving airports with only two options: expand or become more efficient.³⁴

However, both routes have their own challenges. Most North American and European airports are severely constrained from expanding much further, as we have already indicated. And, even if they could, building new terminals or airports is a very expensive and time-consuming business. Furthermore, most of the airport operating systems currently in use are based on point-to-point connectivity. They are also difficult to maintain and expensive to change.

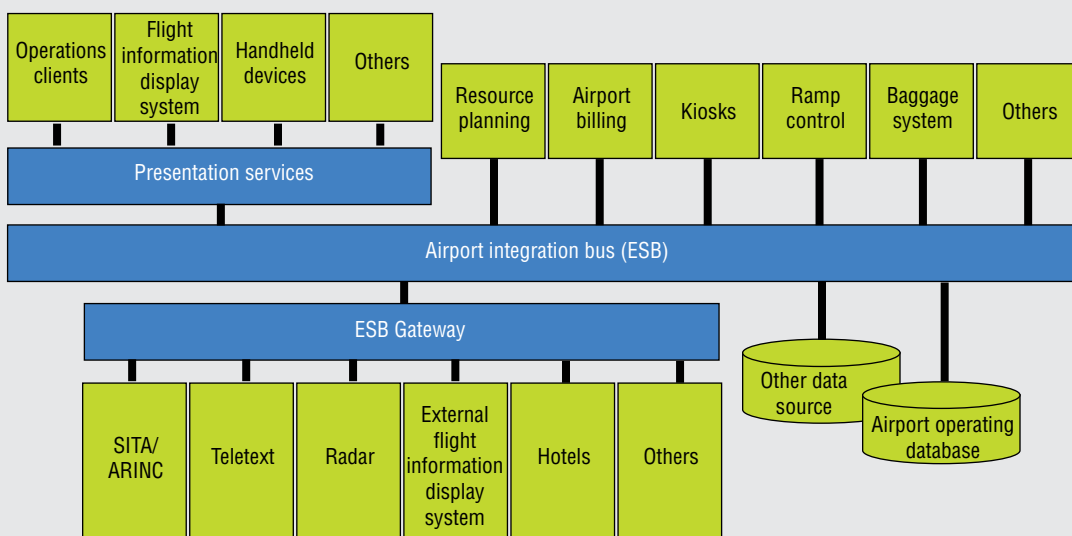
This means that they cannot easily cope with changing customer requirements – at a time when passengers want more self-service options, fast-track customs and immigration lines, and are no longer willing to accept a “one-size-fits-all service.” Nor can they easily cater to variations in the arrival, transfer and departure processes of different airlines and aircraft, or the increasing array of onsite service providers, including ground crew, catering and cleaning staff.

By 2010, then, most airports will need new, more versatile operating systems. They will have to adopt a modular, flexible architecture that can receive and route operational data to multiple points within the network, including flight information display systems, ground crew systems and catering systems. Again, one of the best ways of connecting these disparate systems is to use a service-oriented architecture and an airport integration bus to provide different applications to multiple users (see Figure 9).

New security technologies

The growing threat of terrorism has resulted in the introduction of more rigorous border controls and safety procedures. The TSA has issued various directives to strengthen U.S. security at airline checkpoints and passenger screening locations, as well as tighten the rules on cargo shipments.³⁵ Britain imposed strict safety controls in August 2006, following the discovery of a suspected plot to blow up

FIGURE 9.
The new breed of airport operating systems uses a single platform to integrate different data sources and applications.



Source: IBM Institute for Business Value.

By 2010, most countries will use machine-readable passports – and more sophisticated systems will include biometric data.

several airplanes in mid-air.³⁶ The European Union followed suit in October 2006, and IATA has been working on the development of harmonized global security standards.³⁷

These measures have come at a very high price. Homeland Security Research of Washington, D.C., estimates that global government and business spending on anti-terrorist products and services reached US\$59 billion in 2006, nearly six times more than in 2000. It predicts that homeland security spending will almost double by 2010.³⁸ Passengers also resent many of the restrictions imposed on them, including the long queues and sometimes intrusive searches to which they are subjected.

However, innovations in security management will gradually change the way in which passengers are screened. By 2010, for example, our analysis indicates that most countries will use machine-readable passports, and the most sophisticated versions will include biometric data. More widespread use of biometric passports and self-service scanning technologies will eventually accelerate the security process.

Advances to improve customer security processes are already being adopted. For example, Schipol Airport has just introduced The Security Scan for passenger, security and customs control, enabling persons to be scanned in three seconds in lieu of a hand search.³⁹ Furthermore, similar security innovations to enhance the customer experi-

ence and improve operational processes will continue to be adopted in coming years. We anticipate that the aviation industry will introduce fingerprint recognition systems, automated document identification systems and Web technologies that connect customs, airlines and airports within the next one to two years. Our analysis suggests that iris-scanning technologies and wireless technologies will be increasingly adopted within the next two to three years, while facial-recognition technologies, closed-circuit TV surveillance and data analysis systems for pre-screening passengers will be more widely used by 2012.

The industry still has several barriers to overcome before it can reap the full benefits of these advances in security management. They include funding and interoperability issues, as well as public wariness about the exchange of passenger data between transport providers and governments. There was considerable criticism of the European Commission, for example, when it agreed to allow U.S. security agencies access to personal data about European passengers traveling to the United States. The agreement was subsequently annulled by the European Court of Justice, although the court allowed it to stand until September 2006 in order to preserve “legal certainty” and avert transatlantic air chaos.⁴⁰

Nevertheless, while terrorism remains a threat, governments everywhere will insist on tighter security checks. These new technologies have the potential both to strengthen security screening and to make the process more pleasant for passengers.

Conclusion

If the aviation industry is to cater to the global growth in air travel, satisfy an increasingly demanding customer base and remain profitable, we think it will have to make major changes to its business model. It will have to offer passengers greater choice and a more differentiated experience – and simultaneously control its costs by creating a variable infrastructure, using shared processes and collaborating much more closely. Elements of this new business model should include:

- More collaboration across airlines and airports, while implementing CUPPS, to provide passengers a broader range and availability of services through next-generation, self-service options
- Collaboration across airports and airlines to integrate and manage baggage-handling systems, both mechanical and information systems, to reduce the number of mishandled bags
- More shared services to outsource more commodity applications and reduce costs
- New airport operating systems designed for better information sharing across airports, vendors and airlines to enhance operational efficiency and throughput
- New security technologies, prioritized and implemented via collaboration across airports and with airlines.

The emerging technologies we have identified above can play a major role in helping the industry achieve all these objectives. While the number of collaboration partners required for airports and airlines has soared, so can the potential benefits. The technology is ready – are you?

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