Airport Industry Trend Report 2015

visitorM

Executive Summary

An Industry in Flux

Airport management has been undergoing major change in recent years. Today's airports have shifted their focus toward a more holistic experience, in which every aspect of the passenger journey represents a key business touchpoint.

Although the ultimate goal of every airport is still to provide a safe and efficient travel hub, more attention is being paid nowadays to everything else that happens in the hours spent in the airport – especially the periods of time in between check-in and boarding.

For example, efforts are being made to improve the retail, dining and amenity options in airports to cater to increasing numbers of customers looking for local atmosphere, luxury shopping and the types of conveniences generally associated with the hospitality industry.

Also relevant to non-operational airport revenues, as customers become more accustomed to online shopping, airports are integrating ecommerce options as well.

Other initiatives to forge excellent guest experiences at airports include communicating directly with passengers via digital channels, offering fun and relaxing activities such as yoga and butterfly gardens, and installing more comfortable seating. Free Wifi, charging stations in armchairs and sentiment feedback kiosks utilize technology to constantly improve the customer experience.

To create an attractive and distinctly memorable space for customers, new airports no longer have a generic look and feel; instead, they are designed to resonate with the character of their home cities, with regional architecture, shops specializing in local brands and restaurants dedicated to local cuisine.

Airports have also been growing to gargantuan proportions so they can include services that are not native to airports, such as hotels, housing, hi-tech office complexes and conference centers. These mega-airports, called aerotropolises, are basically fully self-contained cities-within-cities which offer

many services for the convenience of travelers and employees.

Moreover, spiking air travel volume has caused many leading regional airports to build additional terminals. Planning and construction of entirely new airports has also been accelerating around the globe. These modern facilities are designed to cater to the needs of the 21st-century traveler and are often conceived with future expansion in mind.

We're also in the midst of a new age of connectivity, customer experience tracking and consumer-centric service. New technology such as feedback kiosks and mobile apps allow for increasingly helpful and accurate data collection and analysis. Airport managers are using data to simplify processes such as security, passport control, baggage handling and check-in. They're also leveraging technology to monitor passenger flow through their terminals and pinpoint any opportunities for improving operational efficiency, optimization of business units and the overall customer experience. This data can be used in real-time to identify and address unexpected challenges — and can be analyzed over time to discover long-term opportunities.

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Chapter One

Airport Retail Trends

Issues Today's Airports Face with Growing Emphases on Retail, Dining and Concessions

How Retail and Dining Are Changing in Today's Airports

In the 21st century, airports are no longer just stations along the way - they have become destinations unto themselves. Airport management leaders and local governments are currently investing heavily in creating hospitality experiences that will positively reflect on the airport and on the city it serves. As a result, today's passengers are spending more money on food, conveniences and souvenirs at airports than ever before.

The Airports Council International 2012 Airport Economics Report shows that 44% of global airport revenue comes from non-aviation sectors, at a total of approximately $46 billion annually.[1] In order to tap into these revenue streams, airports are mostly focusing on experiences such as dining, retail and concessions.[2]

And according to a recent Airport Cooperative Research Program ACRP report, the target customer for dining and retail is primarily the international departing passenger.[3] These passengers pass through check-in and security as quickly as possible and then find themselves with spare time before they must board their flights. Arriving passengers spend almost no time in the airport, so they need not be targeted for retail. Domestic travelers have limited time before departure, so they are being viewed as secondary customers.

Other potential customers include visitors to the airport who are seeing passengers off or welcoming them as they arrive, and airport employees who may take advantage of the convenience of buying food and beverages during breaks from work.[4]

In order to cater to these categories of customers, airport managers can determine how to divide their concession areas to properly allot space for the types of shopping that appeals to each sector. According to a study conducted by AirProjects Inc., in today's airports, on average, a full 54% of concession space is allocated to food service, 36% is allocated to non–duty-free retail, and 10% is for duty-free retail.[5]

Dining

As far as the bottom line goes, food and beverages make up 7% of the revenue earned in airports from non-aviation services, with annual revenues totalling some $539 million. North American airports earn the most from concession stands and restaurants, with these business units driving 6.7% of all non-aviation revenue. Latin America-Caribbean airports are next, with 5.9%, followed by European airports with 5.4%.[6]

As part of the move toward creating unique experiences in airports, dining options now reflect the specific culture and ambiance of the city the airport is located in.

The Dubai government, for instance, set up a dedicated dining and retail space with the express purpose of promoting the Dubai International Airport and the city of Dubai. The airport and Jack Daniels recently won an award for their collaboration on Jack's Bar and Grill. A luxury steakhouse featuring Jack Daniels liquor, the restaurant is an oasis in the middle of a busy airport.[7]

At London's Heathrow Airport, dining options reflect British culinary culture. The airport is soon to be home to a restaurant run by famous British chef Heston Blumenthal, with a typically British menu that also includes dishes familiar to most international travelers, like fish and chips and pizza. And Michelin-starred chef Gordon Ramsey already runs a restaurant at Heathrow called Plane Food. In addition to fine sit-down dining, the restaurant also boxes up food to be eaten at the gate or on the plane for customers in a hurry.[8]

American airports are also bringing in celebrity chefs to cater to passengers who want to enjoy some good California cuisine before they fly. The brand new Tom Bradley Terminal at LAX focuses on giving travelers a taste of LA's local flavor. The 150,000-foot restaurant pavilion soon be home to 31 different dining options, 18 of them featuring local LA concepts.[9]

Retail

Many airports are renovating or building new terminals to accommodate increased air traffic, and they are investing in retail spaces in order to increase their revenues from passenger shopping.

The 21st century traveler expects convenient luxury shopping integrated with the latest technology, and airports are aiming to provide this.

An example of an airport creating innovative shopping opportunities is Madrid Barajas, which has recently opened the largest luxury shopping area in a Spanish airport. This area is devoted to fashion, with shops offering

Photo via Flickr by inrsoul

clothing, jewelry, accessories and watches. It is called The Fashion Gallery and is designed to exude sophistication and luxury, imitating the feel of a fashion show's catwalk.[10] Luxury shopping is popular with many air travelers, but particularly with Asian travelers. The Asian travel market, especially travelers originating in China, is growing in leaps and bounds, and is an excellent source of shopping revenue.[11]

Catering to Asian Travelers

According to Tax Free World Association (TFWA), Chinese travelers constitute the fastest-growing demographic making purchases from duty-free and travel retail, with a 63% rise in spending in the last year.

The Chinese economy is booming, and airline travelers tend to be those with more disposable income - people who want to demonstrate their wealth by buying luxury goods. They are avid internet users, familiar with international brands, and interested in purchasing items not available in their own country. They are wary of purchasing imitations in China, so they prefer to buy from trustworthy brand-name stores.[12]

Asian airports have already begun making adjustments to better serve these passengers. Beijing, Mumbai, Macau and Seoul are all in the midst of building new airports with large and luxurious shopping centers. These airports are likely to rely on duty-free and travel retail for at least half their revenue. Airports which are popular destinations for Asian travelers - bigger cities in Asia, Australia, Europe and the US - can tailor their retail offerings to appeal to this market.[13]

For example, Helsinki Airport is also in the process of a major renovation, with an eye toward catering to Asian travelers passing through on their way to other destinations. The nearly two million Asians who fly through Helsinki each year will soon enjoy a broader range of high-class products and excellent customer service. Helsinki is also collaborating with major international restaurant and retail brands to serve the 20 million yearly travelers expected by 2020.[14]

Technological Solutions for Airport Retail

Both Asian and non-Asian passengers are interested in purchasing their luxury goods as

60% to 80% of travelers said they would like to use an app that offers them products related to the specifics of their personal journeys.

seamlessly as possible and to leverage mobile connectivity as a tool that enhances the shopping experience. New technology allows for purchase of various travel-related amenities such as reading material, parking and entertainment via mobile phones. There is a lot of potential in this market, which is not yet being taken advantage of.

An online poll of approximately 6,000 adult consumers, NCR Company's 2014 Traveler Experience Survey revealed that although only a third of travelers report having used such a service, 60% to 80% of travelers said they would use such an app if they knew it was available and accessible to them. The majority of respondents said they would even be willing to share personal information in exchange for targeted offers. Data about demographics and destinations could be used to directly provide the customer with relevant offers in real time.[15]

Some airports have already taken first steps toward integrating new retail and social media technologies into the shopping experience. Heathrow Airport in London allows passengers to reserve items before they reach the airport, which they will pay for and pick up when they arrive. Singapore Changi Airport is even more sophisticated, handling

the payment transaction online as well. Changi also engages its audience on social media, offering $50 vouchers for fans who share their wish lists on Facebook. Both Heathrow and Changi use Facebook to promote specific stores and products in their airports.[16]

Technology can do a lot more for airport shopping with a little creativity. In fact, it can solve one of the biggest problems airport retail stores face: limiting and confusing regulations which discourage shopping.

For instance, if a customer buys a product in one airport and it is confiscated when he gets on his connecting flight at another airport, he is likely to become reluctant to make duty-free purchases in the future.[17] Also, customers who have the time and energy to shop in duty-free stores may be deterred by the new "one bag rule" which applies on many flights.

Consumers need to be able to fit their purchases into their carry-on bags, so they can't buy anything too bulky. And if they have already packed their bag pretty tightly, they can't even purchase something small, like a newspaper or food item if they can't fit it into their bag. At small and regional airports which are are served primarily by lower-cost carriers, this problem is acute and has resulted in as much as a 40% drop in sales.[18]

Passengers are often confused about the rules on their particular airline. This leads to angry patrons complaining about not being able to take their purchases on the plane and others simply refraining from shopping to avoid getting in a pickle.[19]

Tech can address these challenges, if airport retailers begin implementing systems to deliver products at different destinations. About two-thirds of travelers say they'd like to purchase a product from airport retailers on a self-service kiosk and have it delivered to their final destination. Up to 55% say they've left a duty-free shop without making a purchase because the item they wanted was out of stock.[20]

New technology also allows airport management to stay informed in real-time on how their retail spaces are resonating with passengers. Customers are looking for different things at different phases in their journey, so it's helpful to track sentiment to maximize profits. This can easily be done with sentiment tracking kiosks that allow passengers to share quick feedback in different sections of the airport. Data is collected and analyzed to provide a broad picture of customer satisfaction.

Looking Towards the Future

Airports will continue to focus on retail and dining as a way to differentiate their brands and capitalize on growth in luxury shopping. As Asia's affluent travelers continue to fly overseas more often, more airports will find ways to cater to this lucrative market. And technology will play an increasing role in the shopping experience before and after arrival at the airport.

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Chapter Two
Creating the Guest Experience

Initiatives at Airports around the World

How Airports Are Creating Positive Guest Experiences

Countless factors converge to determine whether a customer has an enjoyable experience at an airport or not. Some of these factors are beyond the control of airport management, such as freeway traffic on the way to a departure or flight delays due to weather conditions.

But managers are doing more nowadays to take the reigns on the factors that *are* under their control. Many are using creative thinking about how to enhance the "guest experience" for passengers, in order to increase revenue and make the airport a place worth returning to. In addition, increased collaboration between airlines, retailers, customs officials and airport management is succeeding at making customer satisfaction a primary goal.[21]

Training courses for ground personnel on subjects such as safety and service quality are likewise critical to making air travel a positive experience.[22]

Innovative Technology Enhances the Guest Experience

New technology plays a big part in the guest experience at today's airports. Savvier customers use their smartphones to simplify processes in their daily lives, and travel is no exception. Here are some examples of airports getting creative with technology to enhance the guest experience:

• Stockholm Arlanda Airport has recently refurbished and expanded its old terminal and placed the "guest experience" at its center. Innovative technologies are being used to streamline the process of check-in at the airport.

• Self-service bag drop is being used by some of the airlines, and passengers report that the system is reliable, fast and easy to use. Automated check-in machines speed up the process even more. The new terminal also uses space and light to create a bright, open feel and let nature in. The airport added more seating, play areas for children, more space for retail stores, plus facility-wide free WiFi and scores of cellphone charging stations.

• The guest experience can also be enhanced by direct communication with the customer via mobile phone. One of the more unpleasant aspects of airline travel is the constant need to check flight information screens for updates on arrivals. New technology allows airports to send passenger-specific information directly to his or her mobile phone, using dedicated apps or Twitter. Leeds Bradford International Airport tweets relevant flight information to travelers, and Frankfurt Airport offers push notifications on the newest version of its smartphone app.

• The Excess Baggage Company uses technology to mitigate one of the most burdensome parts of air travel. It helps passengers wrap and weigh baggage and provides courier services. At London-Stansted Airport, the company operates stand-alone weighing machines which advise passengers if they will incur overweight charges. Customers can then go the company's store for help in reducing their overweight luggage.[23]

One of the negative effects of using technology in airports is that it can marginalize the human touch of customer service. Automated solutions are great when everything is going right, but the downside is that they lead to understaffing, which can be problematic when unforeseen urgencies arise. For example, when a storm hits and flights are delayed, a robust ground crew becomes pivotal for rerouting flights and finding car rentals and other arrangements for stranded passengers.

And in some cultures, travelers are simply not interested in dealing with machines instead of people. Self check-in is a buzzword in European airport management, but in other markets, the personal touch is still king.

Turkey, for example, is currently planning construction of the Istanbul New Airport, where check-in will be facilitated by 500 desks around the airport, manned by flesh and blood personnel.[24]

Amenities for Business Travelers

Passengers often have an abundance of free time to spend at an airport before their flight takes off. Some airports have thought beyond shopping, to offer business travelers productive ways to spend this time.

• At both Heathrow and Gatwick, passengers can enjoy the use of a private office space, where they can answer emails and stay up-to-date with the latest financial news while they wait for their flights.

• United Airlines has installed charging stations at gates so that travelers can charge their phones, tablets and e-readers and don't

> In some cultures, travelers are simply not interested in dealing with machines instead of people. Self check-in is a buzzword in Europe, but in other markets, the personal touch is king.

have to worry about running low on batteries while working during flights.[25]

Fun and Relaxation in between Flights

For non-business travelers, airports are creating spaces for fun and relaxation.

• Chicago O'Hare International Airport offers a yoga room, with instructional videos and a screen showing flight information so passengers don't have to worry about missing their connections.

• In Helsinki and Munich, dedicated relaxation zones allow for some quiet time away from the bustle of the busy airport.

• Singapore Changi Airport is equipped with a swimming pool, a butterfly garden and a movie theater.

• Turkish Airline passengers arriving at Istanbul Atatürk Airport with a stopover of six hours or more are treated to complimentary tours of Istanbul.

•To mitigate some of the stress of travel, companies such as the American XpresSpa

and the French Be Relax provide passengers with spa services such as massages, manicures, haircuts and facials.

• Japan's Narita International Airport begins flights at 6:00 AM but has very limited public transportation to the airport in the late night and early morning hours. Many passengers on the early flights choose to sleep the night at the airport in order to be on time for their planes. The airport has developed an innovative solution for these travelers: small pod-like spaces for sleeping which are much more inexpensive than a hotel, and offer only a bed and the option of a shower.[26]

Seating Arrangements

Airport seating conjures up visions of rows upon rows of hard chairs, but modern airports are offering innovative seating arrangements in the main halls and gates.

Designers of seating areas now recognize that different types of passengers need different kinds of seating. Travelers in transit require comfortable seating, while business travelers may prefer seats grouped together for impromptu meetings. Some passengers want to sit at tables near the food concessions, but others do not want to feel obligated to purchase food while they rest their feet. Studies show that when seating is only adjacent to restaurants, customer satisfaction plummets, but when the option for sitting next to the concessions is one of many, purchases of food and drinks rise.

Almost all passengers enjoy seating with built-in electricity for charging mobile phones and other devices.

Seating located near retail areas which integrates charging stations increases sales,

Photo via Flickr by ninayasmine

since customers sit facing the shops for longer.[27]

An airport in Portland, Oregon saw a 12% increase in customer satisfaction ratings after a seating adjustment, and other airports have reported 12% to 15% jumps in revenue thanks to new seating arrangements.[28]

More Hospitable Shopping Options

Retailers at 21st century airports are finding new ways to encourage shopping.

In order to entice the customer away from sitting in front of the gate until boarding is announced, airports offer fun, welcoming and easy ways to shop.

For example, many brands are now offering self-service shopping kiosks with convenience-themed products.

• Amazon-branded kiosks dispense Kindles and Kindle accessories at various airports around the USA.

• Customers can have their glasses cleaned with Opticwash automated kiosks.

• And for those passengers who insist on getting to the gate as early as possible, many airports have introduced vending carts in holding rooms which offer newspapers, drinks, snacks and other items that can be easily carried on to planes.[29]

Even "boring" shops like currency exchange stands are finding new ways to bring in customers, taking cues from the hospitality industry. Moneycorp at London-Gatwick Airport is revolutionizing airport currency exchange. Instead of the usual money changing booths, the company is currently developing sit-down lounges, with hostess service and easy to use technology for a streamlined experience. Moneycorp will also soon offer Cash Redemption Terminals, online currency ordering and in-store ordering via tablet.[30]

Feedback from Customers

Another way to ensure a positive guest experience for travelers is for airports to ask their customers whether they are enjoying their stay. Putting the passenger at the center of all decision making is a big component in providing a positive guest experience, so instituting a solution for tracking reactions to different touchpoints is pivotal. Feedback kiosks situated at different points in the airport can ask passengers to spend a few seconds and provide immediate feedback on satisfaction levels. The data is then analyzed

and used to make improvements where feedback shows them to be necessary.[31]

Looking Towards the Future

Providing a positive guest experience is a primary mission of contemporary airports, which have become hospitality destinations as well as travel hubs. Self-service conveniences will continue to become more prevalent. New technology will further enable personalized communication with customers, empowering management to learn from feedback data. Airports will continue to find ways to provide a more enjoyable experience preflight, with original entertainment, leisure and shopping.

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Chapter Three
Local Flavor

Infusing an Airport with the Character of its Home City

How Local Flavor is Being Integrated in Today's Airports

Travelers usually form their first opinions of cities when they first land, while still in the airport. And some passengers arrive in an airport just to connect to a different destination, so the airport is the *only* impression they get of the city. Airport branding and destination branding are clearly intertwined. For this reason, modern airport planners have abandoned the old generic look and are seeking to infuse their complexes with distinctively local atmosphere.

Dining Options Reflect the City's Culture

One way to showcase local culture in an airport is through sourcing local products and offering dining and food shopping opportunities which speak to the uniqueness of the city and country.

Here are some examples of airports that do this especially well.

• Budapest Airport focuses on homegrown brands and native foods such as Szamos chocolates, Zwack Unicum liqueur and Pálinka Hungarian brandy. The theory behind the move is that tourists prefer to bring home souvenirs they can't buy anywhere else. This theory has paid off for the airport, where sales of Hungarian goods increased 300% over the course of 2013.[32]

• Before the construction of Heathrow's new terminal, research revealed that customers wanted Heathrow to feature more premium restaurants and a focus on British brands. As

> As part of its efforts to exude "Britishness," the new terminal at Heathrow provides passengers with the option to have a relaxing pint in a British pub.

part of its efforts to exude "Britishness," the new terminal provides passengers with the option to dine in a typically British restaurant or have a relaxing pint in a British pub.[33]

• Singapore is known for its hawker food culture, in which customers purchase food from open-air street stalls instead of restaurants. Changi Airport has recreated this experience by introducing Singapore Food Street. Here, 13 local hawkers, including some of Singapore's household hawker names, sell regional delicacies in a dedicated marketplace area.[34]

Airports Focus on Retail Shops Unique to their Country

In the same way that dining options reflect the culture of a city, emphasizing local retail gives a traveler the ability to take home and share the feeling of being in the city itself. Here are some prime examples.

• At Copenhagen Airport, the entire architecture and decor reflect Danish and Nordic culture. There is a duty-free shop devoted entirely to Danish products.[35]

• At Amsterdam Schiphol, local goods reign. The airport aims to reinvent the liquor,

tobacco, confectionery and flower shopping experience. Shops here are designed with local ambience in mind, each one with a different architecture and different music playing in order to enhance curiosity. Holland Boulevard houses a museum with an adjacent shop; there's a library of books dedicated to Dutch history, culture and literature; and several nationally themed restaurants serve typically Dutch cuisine.[36]

• Heathrow's Terminal 2, called The Queen's Terminal, opened in June 2014 and was designed to celebrate the relationship between the airport and Her Majesty. The duty-free shops in the new terminal feature more local British brands than any other English airport.[37]

Design Reflects the Personality of the City

Another way to reflect the local culture and values is through the architecture and interior design of the airport complex. New airports and terminals are increasingly being built with the intent of giving visitors a crash course in the uniqueness of the city.

• Amsterdam Schiphol has been outfitted with a "green" design, and has actually achieved carbon neutrality, echoing the ecological values of its host city. Investments in heating and lighting efficiency technology; electric, hybrid or natural gas-powered vehicles and public transport incentive schemes have made this airport much more friendly to the environment.[38]

• The Istanbul New Airport, currently in planning stages, will be built by a Turkish consortium and will reflect Turkish values and heritage. The airport will have a "sense of

Photo via Flickr by changyisheng

place," according to planners, in order to found an institution which the Turkish nation can be proud of.[39]

• Another terminal reflecting local architecture is the retail section of the new Terminal 2 at Heathrow, which is modeled on the British High Street and, more specifically, swanky Bond Street. Every aspect of the terminal's architecture makes it clear that this airport is in London.[40]

• Lastly, Jordan's Queen Alia International Airport, opened in 2013, incorporates natural elements and Bedouin culture in its architecture. The roof is made to look like a network of palm fronds from the outside. The domes, pillars and mosaics of Amman feature in the interior design. A canopy of domes represents Bedouin tents and natural elements provide a feeling of timelessness and a sense of place.[41]

Looking Towards the Future

The generic airport look is going out of fashion, and it's being replaced by airports

which reflect their home city and country. Local dining options, shops selling homegrown brands, architecture and design are all converging to infuse airports with the atmosphere of their geographic locations.

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Image via Airport City Stockholm

Chapter Four

The "Aerotropolis" Trend

Mega-Airports May be the Future of Air Travel

How Aerotropolises Are Changing The Face of Today's Airports

Airports used to be just about flying from one place to another, but a new trend has airport management thinking on a larger scale. Mini-cities sometimes called "aerotropolises" are being built and planned around the world, and some are already operational and going strong. These hubs contain shops, offices, event centers and even housing adjacent to traditional terminal complexes, making them self-contained destinations.

Why This Makes Sense for the Future of Air Travel

Air travel has been increasing exponentially in recent years, and the volume of passengers making their way through larger airports is mind-boggling. In 2012, 70 million passengers passed through Heathrow. The newly built Incheon International Airport in South Korea expects to serve 62 million passengers by 2018. With all this traffic, regional travel hubs now require massive airports, such as the Istanbul New Airport, currently in planning stages, which management hopes will be able to efficiently serve 150 million people annually.[42]

A complex this large is already practically a city, so it makes sense to include features and services normally associated with cities in the plans.

A business and hospitality hub adjacent to the airport has many economic and logistical benefits, such as promotion of trade links and

> Stockholm Airport City has been divided into six urban districts, so that each business can be placed in the correct environment.

external investment in airports. In the same way that thriving cities have traditionally sprung up around river deltas, sea bays, highway interchanges and major railway centers, it is natural for a city to be built around the contemporary transportation hub.

The Challenges and Disadvantages Involved

One major disadvantage of building an aerotropolis is cost and time of construction. In London, for instance, experts have estimated that construction of such a complex would cost approximately $113 billion (£70 billion), with about $48 billion (£30 billion) coming out of taxpayers' pockets.[43]

Also, large airport complexes can be lacking in the cultural fabric of their locales. On a visit to South Korea's Incheon, Richard Sennett, professor of sociology at the London School of Economics, commented on the cold homogeneity of the city that has sprung up around the airport, calling it a place where "there is nothing to be learned from walking the streets."[44] In this sense, the aerotropolis trend may be in direct opposition to the current trend of bringing local color into airports.

And in many cases, construction of an aerotropolis leads to mass displacement of

residents. In order to build an aerotropolis in London, for example, about 20,000 residents would have to be moved out of their current homes.[45]

Another concern is that scaling up so dramatically may reduce convenience for passengers. Travelers may feel lost, uncomfortable and overwhelmed in an aerotropolis. They are not likely to even see all the dining and retail options available[46] and may end up unsatisfied with the ones they were able to experience. However, a combination of intuitive design and excellent customer service can solve this issue and make even a huge airport friendly and welcoming.

Stockholm Airport City - An Aerotropolis Already in Action

Directly connected to Stockholm Arlanda, Sweden's largest airport, Stockholm's Airport City is a great example of how successful aerotropolises can be. Airport City Stockholm currently employs 20,000 people and plans are underway to raise this number to 50,000.[47]

During the planning stages of the aerotropolis, designers were careful to avoid creating a bleak and inconvenient space. Instead, they focused on the human aspects and the guest experience.

The airport city has been divided into six urban districts, so that each business can be placed in the correct environment. Sky City is the "city center" with restaurants, shops, parks, offices and conference centers. Park City is where the parking lots, car rentals and hi-tech companies are located. And Cargo

Image via Airport City Stockholm

City houses businesses in need of direct access to the aircrafts.[48]

Another focus of this aerotropolis is its sustainable urban design. Sweden is known for its environmental goals, and Airport City is being built according to national and international standards for sustainable policies.[49]

Due to the size of Stockholm Airport City, high quality public transportation is key. The airport city is currently equipped with a bus line, and plans are underway to add a tramway service.

Asian Airports as Templates for Aerotropolis Design and Functionality

Many large cities in Asia have already committed to the aerotropolis trend, with a number of airport cities already built or in the planning stages:

• Korea's Incheon International Airport includes offices, apartments, huge duty-free shops and public spaces. It's even home to a golf course designed by famed American golfer Jack Nicklaus.

• Hyderabad International Airport in India is a complete city – it even includes a hospital and a university campus.

• Beijing is in the process of planning a new airport complex with a budget of $11.2 billion, for construction in the city's Daxing district.

John Kasarda, professor of strategy and entrepreneurship at the University of North Carolina, warns that if European airports don't build international hubs, they will lose air traffic to competing airports like the modern aerotropolises of Asia.[50]

Looking Towards the Future

Despite the challenges presented by mega-airports, it seems inevitable that aerotropolises will continue to grow in popularity. Asian cities have already embraced the idea of mini-cities being developed around airports, and Europe is following suit. As the world's populations grow accustomed to them and aerotropolis experience feedback data provides more insights to managers, aerotropolis planners will surely begin to find the sweet spot in balancing sustainability and business growth with convenience and distinctive character.

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Chapter Five
Airport Growth

Airports Making Headlines for Passenger Volume Growth, Business Growth and Innovation

How Air Travel Growth is Changing Today's Airports

In recent years, the popularity of air travel has greatly expanded, and revenue has risen as well. New airlines have been established, airports have built extensions, and new airports have been constructed. The Middle East has experienced the most significant rise, currently boasting an annual growth rate of 6.9%. Asia Pacific has seen a year-over-year growth of 6.5%, and growth around the globe is holding steady at 3.3%.[51]

Despite the challenges involved, this trend is expected to continue, with even more air travelers and bigger airports. Considerable pressure falls on airport management to ensure that efforts to scale go smoothly and successfully.

Growth in Traffic

With the end of 2014 now in sight, it's amazing to see the growth in air traffic that many airports have been clocking around the world since the beginning of the year.

• Saint Petersburg Pulkovo International Airport achieved 16% growth in January 2014. A new terminal has been built to accommodate this growth, and a number of Russian airlines have transferred all their domestic flights to the new terminal.

• Another airport experiencing dramatic growth is Portugal's Sá Carneiro Airport, which has been ranked as the third best airport in Europe by the ACI ASQ. From November 2013 to January 2014, it experienced 10% growth in air travel.[52]

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• Heathrow Airport is also feeling the rise in air traffic. The airport has reported a 4% growth rate, which has led to a serious flight delay problem. Heathrow has recently introduced a new traffic management system in order to reduce the number of delays, possibly even halving them.[53]

• It looks like Dubai International Airport has beaten out Heathrow for the title of the busiest international airport in 2014. In 2013, it handled 66.4 million passengers, second only to Heathrow. The airport is currently undergoing a runway overhaul for increased efficiency, and plans are underway to expand the airport to include a mall of duty-free shops and a complex of Zen gardens.[54]

• From 2009 to 2011, Japan experienced a downturn in tourism as a result of the global financial crisis and the 2011 tsunami, but tourism is now solidly on the rise again. Air traffic is now expected to reach 96.9 million, and annual inbound tourism 11 million by the year 2017.[55]

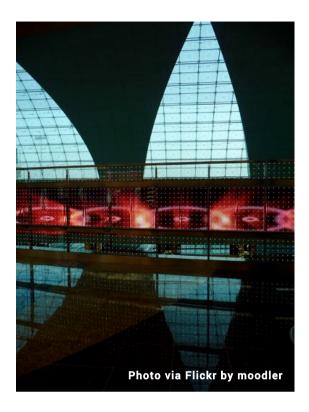• Growth is also expected at Sabiha Gokcen International in Turkey, which should finish

2014 with almost 24 million passengers having passed through the airport.[56]

Construction of New Terminals and Airports

The rapid expansion of air traffic in the last decade has led many cities to expand their airports or even build entirely new ones.

• Lynden Pindling International Airport in the Bahamas has a new 226,000-foot terminal that includes lounges, six hotel reception lobbies, four restaurants and an advanced baggage handling system. Rededicated in September, the renovation gives Nassau the ability to accommodate 50% more passengers than it previously had.[57]

• England's Bristol International Airport is also expanding, and is in the process of doubling the size of its terminal, adding two multi-story parking lots, a hotel and more aircraft parking.[58]

• Copenhagen Airport handled 24.1 million passengers in 2013[59] and in June 2014 has its busiest ever month, with over 98,000 passengers.[60] Airport management plans to double annual air traffic by expanding its Pier C to accommodate up to 40 million passengers. The larger pier will be more comfortable for travelers, with special attention paid to comfortable and spacious seating at the gates. New stands with larger air bridges will increase the number of large planes which can land at the Danish airport.[61]

• Adelaide Airport in Australia plans to invest $1 billion in an expansion that would accommodate an anticipated international passenger growth of 5.8% and a domestic growth of 4.1% per annum over the next 20

Photo via Flickr by moodler

years. The expansion will include a larger terminal with more arrival gates, retail spaces and airline lounges. The airport will also build a 250-room hotel, a light-rail corridor and a dedicated taxi drop-off area.[62]

• Oslo Gardermoen Airport is also currently undergoing a major renovation, set to be completed in 2017. The dual purpose of the expansion is to boost capacity while simultaneously increasing convenience for travelers. Passengers will be required to walk much less and will enjoy easily accessible retail and dining options. Since public transportation is a popular means of getting to Oslo Airport, the railway station is being expanded to encourage more passengers to arrive via train. When completed, the capacity of the airport will be 28 million passengers per year.[63]

• Jordan has seen tourism industry growth recently, thanks to its reputation as one of the more liberal Middle Eastern countries and its location in the Holy Land, home to many

significant religious sites. The newly built Queen Alia International Airport has been designed to be easily expanded as necessary. Its capacity currently stands at 3.5 million passengers per year, and expansion plans are already underway to accommodate 12 million per year by 2030.[64]

Looking Towards the Future

Since the world economy began recovering from the troubles of 2008, air travel has been showing consistent year-over-year growth, and experts expect this trend to continue. The trend is forcing more airports to build newer and larger terminals – and new airports to crop up around the world. Many of these new terminals and airports are being built with an eye toward future expansion, since the growth trend shows no signs of slowing down.

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Chapter Six

How Data is Shaping
the Future of Airports

**Improving the Guest Experience
with Technology and Data**

How the Use of Data is Changing Today's Airports

Airports operating in competitive markets attract and keep customers by delivering a seamless passenger flow, from check-in to take-off. That's why many airports are testing innovative services that leverage data to improve the guest experience.[65]

Managers of contemporary airports are investing in technology and business intelligence systems that allow them to increase revenues. This data is collected from passengers who volunteer information in in the name of helping to forge more efficient processes, and an overall more pleasant experience, in the airport.

Many are finding airport-branded mobile apps to be powerful tools for personalized customer engagement and for the collection of intelligence data. Beyond general demographics, an app which facilitates check-in or advance shopping can collect specific passenger information such as name, email address, phone number and physical address. A better understanding of the mix of passengers passing through the airport can help management maximize non-aeronautical revenue.[66]

A recent authoritative industry survey has revealed that airports invested $6 billion in information technology in 2013. Some 80% of airport representatives said they plan to soon invest in new business intelligence solutions to optimize airport management and increase revenue. But only 8% reported to have fully achieved the data quality requirements for the BI programs they are already running.[67] There is still a long way to go before BI is operating

at its maximum potential, but a variety of compelling data initiatives has already been implemented at many airports around the globe.

Uses of Data in the Airport

In order to maximize revenue, airport planners need to understand their customers' values, buying and travel habits.

A recent data-driven study conducted by the International Customer Loyalty Programmes consultancy shows that airports are missing out on a lot of retail opportunities. One in four airline passengers said they were were open to shopping in the airport but only half of them actually found something they wanted to buy. A better understanding of the customers' shopping habits and tastes allows for targeting messages and offering relevant deals.[68]

One company to recently experiment with large-scale data collection and analysis is the Australian-based Flight Centre, which revealed information about its customers and helped the company improve its marketing efforts and increase sales.[69] Data about how customers are responding to the retail spaces in the airport is used to identify weak concessions and help analyze their failures and increase revenue.[70] Moreover, before embarking on an expansion or renovation, it is especially important to review data on what the airport's customers want in terms of travel conveniences and shopping experiences.

Technology makes it easy to collect and analyze this type of data. As problematic as they may be, customer survey programs can

enable managers to optimize the passenger experience. Copenhagen Airport is in the process of planning an expansion, and management is using surveys to find out what travelers feel is missing in the airport. Every year management interviews 100,000 passengers who pass through the airport, now also actively seeking out feedback from potential customers. The airport is looking for innovative ideas from other airports and fun suggestions for facilities that would make Copenhagen Airport more attractive to travelers.[71]

Expansion isn't always necessary, though. One of the most efficient ways to increase retail revenue in an airport is to focus on bringing in more customers to existing shops. Digital advertising based on data about a customer's location and preferences is an excellent use of business intelligence. Sending a coupon via smartphone to a nearby retail store will encourage the passenger to leave his comfortable seat and cross the short space to the shop. Advertising can also be targeted to passengers on specific flights, so that US travelers to Europe can receive promotions for electronic adapters and passengers on stopovers from exotic locations can be offered souvenirs from that country.[72]

Another benefit of data integration is to help travelers keep track of their luggage. Baggage handling is a sensitive subject for most passengers. They prefer fast check-in but what they are really concerned about it is getting their luggage back at the end of the flight. To streamline this process, and to avoid lost luggage woes, airports are tagging luggage electronically and keeping tabs on each item until it reaches the traveler at the end of his or her trip. Air France-KLM even offers a customer-facing bag tracking system,

Staff members use Google Glass to greet passengers by name and provide them with up-to-the-minute information on flight departure times, as well as seating availability.

which the customer uses to access the location of his or her own bags using a smartphone. The eTag automatically updates and displays flight details and a barcode when a passenger checks in online from home. The passenger then hands over the bag at a drop-off point in the airport and tracks it until landing. The service is very much in beta and currently available only to members of Air France-KLM's frequent flyer program, but Air France has plans for expanding this industry-leading initiative.[73]

Big data is also being used to increase efficiency and personalization of the boarding process. Many delays are caused by passengers who fail to board on time. Electronic data makes it easier to find out whether the passenger has arrived at the airport and even pinpoint his or her location to bring him or her to the boarding gate quickly. Helsinki Airport has recently implemented a new system which tracks passengers' movement through the airport via their cell phones. This technology allows airport management to identify passenger bottlenecks, as well as gather information about where travelers are stopping and spending time. Marketing can be honed according to this information and passengers can be offered location-based promotions.[74]

Virgin Atlantic Airways is pioneering the personalization of boarding with the use of Google Glass. Staff members use the devices to greet passengers by name and provide them with up-to-the-minute information on flight departure and arrival times, as well as seating availability. Future plans include the ability to provide travelers with refreshments according to their preferences.[75]

Sentiment kiosks collect real-time data on customer satisfaction at different locations in the airport. They allow management to solve problems such as service line bottlenecks or unexpected cleaning needs quickly. And they offer a wealth of data for determining what areas of the airport – physical areas and business units alike – are and are not providing consistently positive customer experiences.

Using big data to electronically map out what is happening in various parts of the airport can assist in traffic control as well. Replacing the pilots' paper maps with digital information about available runways can cut delays, increase safety and save fuel. Incheon Airport in Seoul instituted a digital runway system in 2009, which has helped to generate significant operational benefits. A 2013 five-day validation exercise at Frankfurt Airport reduced the time needed to guide planes around the airfield, saving money for the 20 airlines that participated.[76]

Implications and Challenges

Access to personal data about individual passengers can help speed the process of moving through the airport. As processes are streamlined, passengers will have more time to spend in the airport, putting up their feet

Photo via Flickr by lazurite

and relaxing. They will also have more time to spend shopping and paying for conveniences and entertainment. Integrating flight data with retail data allows the airport to offer a passenger waiting for a delayed flight a discount on shopping or an upgrade to a luxury lounge, for example.[77]

Today, each division in an airport collects its own data, but this information is not shared with other divisions, so few stakeholders have access to the full picture. Integrated processes between divisions means more passengers can pass through the airport with greater efficiency and delight. For example, take-off schedules can be formulated more effectively if all parties involved were to share their operational data. More exact take-off times would allow management to schedule more departures, leading to an increase in passengers, which would then increase revenue from parking, shopping and dining.[78]

Looking Towards the Future

Data collection in airports is still in its infancy, but the potential is almost endless. Kiosks, apps, location tracking and electronic mapping are just the start. To an increasing degree, data is being used to gather feedback and improve the guest experience – both in real time and strategically. Soon enough, it

seems that data will also be leveraged ubiquitously for decision-making in current terminals and in the design of new terminals. Accurate data will speed up all of the relevant processes in our airports, enabling the delivery of a more memorably pleasant experience among passengers.

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