Airport Analytics

Enhancing operational efficiency to help border agencies achieve high performance
If you have ever waited in an airport queue that has ended up being longer than your flight, you have experienced first-hand the powerful impact of increasing numbers of travelers and more vigilant security measures that beset the modern world.

With the current economic climate driving an expectation to reduce operational costs and streamline processes, the insistence of national security agencies to increase safety and protect our borders, and consumer demand for an improved service, airports are under pressure from all sides to achieve high performance.

So how can our borders be flexible and cost-efficient while offering a positive customer experience?
Prepare for take-off

For any flight, take-off procedures are fundamental to being adequately prepared to safely reach your destination. To manage today's demands and prepare for the future, airports and global border forces need to fully assess their environment and its heritage. Accenture is working with border management agencies around the world to help keep them ahead of developments in this complex area. We believe key factors affecting airport angst include:

Rapid technological change
As with all sectors of modern living, new technology can create challenges but is largely a positive force for change. Indeed, the European Commission is proposing legislation for a "smart borders" initiative in June 2012 to simplify life for foreigners traveling to the European Union and to better monitor third-country nationals crossing the borders. Whether taking advantage of eGates to reduce passport queues or employing biometrics to ease identity management issues, technological techniques require investment in both time and resources. Without doubt, transaction times at the border can be realized and operating expenses can be reduced. However, for some airport organizations, until they gain confidence in the return on investment, such technology improvements are consigned to their longer-term strategies.

A dearth of data management
While the quality and amount of information on flights and passengers is increasing, airports do not always have the tools and processes to make the best use of this data. Indeed, 11 Member States are currently implementing national entry/exit systems, which systematically collect all entry and exit records of third-country nationals crossing their respective external borders. However these national systems are not linked to similar systems in other Member States.1

Increased demand on border agencies
Every year more than 700 million EU citizens and third-country nationals cross the European Union’s external borders. This number is expected to rise significantly in the future. By 2030 the number of people at European airports could increase by 80 percent, which will result in longer delays and queues for travelers if border checking procedures are not modernized in time. This escalation in airport traffic is placing an even greater strain on border agencies to keep wait times low while balancing cost reduction.

Daily operational challenges
Alongside these functional and marketplace challenges and constraints, border forces need to be agile enough to deal with the unexpected. Every day, major airports around the world handle unplanned crises as a result of weather conditions, maintenance issues, security threats, and workforce responses such as illness and strikes.

Accenture believes analytics is fast emerging as a source of competitive advantage. Informed executives can make insightful decisions that can bring better business outcomes. In particular, operations analytics is being increasingly adopted to improve business performance. Analytics can be used to help achieve operational excellence by reengineering key processes, focusing on lean processes and operational effectiveness, and sourcing operational excellence.

2 Source: http://www.planetbiometrics.com/article-details/i/885/
Progress timeline for airports and technology

Revenue Passenger Kilometers (Trillions)

1970 - 2000

- 1972: Paper tickets issued via machines - Tokyo Airport
- 1979: Global Distribution System (Galileo) - United Kingdom
- 1981: Introduction of automated ticket and boarding pass
- 1992: Air-to-ground telephony system (AIRCOM)
- 1978: SITA’s passenger check-in application (part of departure control system)
- 1994: E-Ticketing - United Airlines
- 1995: World’s first online booking engine - launched by British Midland Airways
- 1999: Self-check-in - Continental Airlines/ Newark Liberty International Airport
- 2001: Self-service - Continental Airlines/ Houston International Airport

2001 - 2010

- 2007: Automated baggage handling system - Copenhagen Airport
- 2008: Border Apron pre-editor passenger risk assessment - South Africa
- 2009: iBorder APPLive - pre-arrival passenger risk assessment - South Africa
- 2010: NoQ Trial - facial recognition-based security - Netherlands

Source: http://www.planetbiometrics.com/article-details/i/885/
With the brakes released, an airplane builds speed rapidly. Accenture aims to help you power-up your progress toward achieving greater operational efficiency and enhanced services. We bring together a breadth of services in operations consulting, operations managed services, and technology, coupled with deep knowledge of airports and the border agencies that support them.

In addition, we have an innovative team of more than 5,000 analytics professionals. With more than 150 analytics offerings, thought leadership that includes the creation of leading analytics publications, and dedicated analytics centers of excellence in Milan, Barcelona, and Chicago, Accenture is well-placed to advise on how to better employ analytics to your advantage.

Follow our three steps to reap the rewards from employing analytics in the airport industry:

Step 1: Drive operational efficiencies

Through our work as management consultants and our skilled workforce specializing in operations and process transformation we recommend the first stage toward operational excellence is conducting a formal assessment. Following this review, Accenture helps you identify and then execute strategic and tactical areas of operational improvement. For instance, in assessing visual work controls we can identify collaborative ways of working that help introduce greater flexibility into the organization. Such flexibility means that airport staff can accommodate unexpected demand from aircraft delays or cancellations or improve the customer experience by allocating resources to that airport’s areas of need.

We help you drive operational efficiencies by:

- Identifying of longer-term strategic decisions to reduce operational expenditure (for example, automating baggage handling systems).
- Identifying operational or tactical “quick wins” (for example, cross-training resources to provide a more flexible workforce).
- Using management information, such as passenger arrivals, casework, baggage volumes, immigration/customs risks per flight, to develop business cases to inform decisions around prioritization of improvement opportunities.
- Using advanced analytics, modelling and simulation to more accurately forecast, plan, deploy and manage resources to meet the airport Key Performance Indicators or targets surrounding end-to-end queue time service level agreements (arrivals, security, baggage claim, immigrations), customs seizures targets, referral and casework workload and “perfect storm” scenarios that are triggered in exceptional circumstances.
- Developing formal planning processes, operating model and governance model
- Establishing a continuous improvement programme for the forecasting, planning and deployment cycle to help improve operational effectiveness.

Step 2: Design new processes through managed services

Too busy to project manage the full scope of your operations? Accenture can help. Our Innovation Center in Barcelona, Spain, offers a managed service to handle your planning, forecasting and process modelling needs. By outsourcing to us, you can access analytics capabilities that will better plan and forecast the end-to-end processes a busy airport needs. As recognized by a recent European Commission Communication white paper, by fully understanding the functions and demands of check-in, immigrations, customs, baggage claim, and retail, airports can seize on opportunities to improve the customer experience, reducing the wait time and improving customer service into the bargain.

We provide managed services to help you drive new processes by:

- Creating a staff augmentation model based on passenger demand which takes into account trends in elements such as passenger flow or high risk flights to help optimize operational expenditure and staff utilization.
- Simultaneously evaluate multiple levers which can impact passenger flow through airports (airline sales/promotions, weather conditions, global catastrophes, and so on); often, the sheer complexity of this analysis can be difficult to manage in your own organization.
- Design processes to better help manage and plan for the unexpected.
- Support airports in modelling or simulating new technologies, processes, or structural changes to estimate the return on investment and impact of change prior to capital investment. Our thorough approach helps inform strategic decisions and give you confidence when presenting business cases.
- Continuously improve processes with the help of our advanced analytics software.

Accelerating analytics
Step 3: Implement technology solutions for long-term improvements

Accenture offers an integrated approach to border and identity management, securing citizens, preventing threats and improving enforcement. Whether seeking automated border clearance or employing the latest biometrics capabilities such as large-scale matching and face-in-the-crowd technologies, Accenture is helping to facilitate the movement of people and cargo across borders while enhancing the security of travelers.

We implement technologies to help you achieve long-term improvements by:

- Validating your business case to articulate the anticipated return on investment.
- Implementing new airport technologies such as facial, fingerprint, iris and voice recognition technologies (one-to-one verification and one-to-many identification). We collaborate with different biometric vendors and have experience in mobile biometric devices. We can also advise on biometric smart cards, for example, e-passports, registered traveler cards and video analytics.
- Using modelling techniques to simulate an environment before you commit resources to making it a reality.
- Supporting ongoing planning and forecasting once changes are agreed.
- Using cloud computing as an enabling technology to help with resource planning and improving operational efficiencies. Accenture draws on cloud computing technologies as part of our managed service capabilities or as a means to access and share information across multiple parties.
- Welcoming you to our live automated border clearance showcases, where border management agencies can experience first-hand the processing of different traveler documentation in an automated border clearance environment and understand the benefits that they provide.

3 Publications include “Competing on Analytics” and “Analytics at work.”
Planning and forecasting in the United Kingdom

Case Study

Accenture worked with the UK Border Agency (UKBA) to develop a data-driven model to more effectively plan and schedule border resources. The UKBA needed to significantly drive down costs following the Government Comprehensive Spending Review; for instance, reducing operational costs by 15 percent (£12 million) between 2012 and 2014. The overall UKBA business objective was to maintain the effectiveness of border operations, whilst simultaneously managing an increase in the volume of passengers at the border.

Accenture was able to help by:

• Defining processes to capture and fully utilize key management information (data) that can be used to clearly quantify workload across terminals, highlight operational inefficiency, drive performance targets and provide greater resolution on customs and immigration risks.

• Creating a planning process with a forecasting tool using simulation software to optimize the deployment of resources across Heathrow. The output of the model identified the required resources by hour across all terminals to meet passenger wait time service level agreements, showing an increase in average daily border force utilization from 40 percent to 70 percent across Terminal 1.

• Identifying tactical "quick wins" to improve operational management through visual work controls in the terminal hall, performance management boards, and cross-training of primary and secondary lines to help increase resource flexibility and mobility.
Take flight

With “chocks away” and the airplane off the ground, every pilot is hoping that reaching a safe altitude and landing will follow. Accenture believes airports and border agencies can fly high by outsourcing time-consuming and manually intensive back-office functions, allowing them to focus on the tasks that bring real value—improving service and customer satisfaction. Reduced wait times in airport lines allow customers to spend more time in retail areas. And greater confidence in presenting a business case to rationalize your investments means that you can concentrate on leading efforts rather than justifying them. Teaming with Accenture, organizations are able to design and test to-be processes and transformations offline without impacting their day-to-day business operations. What is more, due to our size and scale, Accenture is able to maintain competitive prices through cost-sharing models such as one customer across multiple airports or multiple customers in one airport.

Having Accenture on board with your organization is like the airplane’s Bernoulli effect—a our services and skills can create the lift you need to improve your flight path toward high performance.

5 The Bernoulli Principle states that pressure in air decreases as the speed of the air increases. Faster air over the top of the wing lowers the pressure, and the difference created between the top and the bottom of the wing creates lift.
About Accenture

Accenture is a global management consulting, technology services and outsourcing company, with more than 244,000 people serving clients in more than 120 countries. Combining unparalleled experience, comprehensive capabilities across all industries and business functions, and extensive research on the world’s most successful companies, Accenture collaborates with clients to help them become high-performance businesses and governments. The company generated net revenues of US$25.5 billion for the fiscal year ended Aug. 31, 2011. Its home page is www.accenture.com.

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