

Six Must Have
Capabilities to Improve
the Passenger Experience



Introduction

At their worst, airports, both large and small, are noisy, crowded and stressful. As global air traffic continues to grow—the International Air Traffic Association estimates the current volume will double by 2035—airports everywhere are feeling the impact¹. Crowded terminals and runways, longer queues and wait times and more frustrated passengers who spend less money while at the airport have become the norm.

Airport operators who cannot expand their infrastructures due to environmental issues, space restrictions or a lack of capital must find new approaches to be more efficient and responsive to passenger needs. This paper discusses how technology and greater access to accurate data can greatly improve an airport's operational efficiency and ensure decision making across all partners is more collaborative and purposeful. It also highlights six technology-driven capabilities airports are adopting to alleviate many of their issues and improve the passenger experience.

The Drive to Improve the Passenger Experience

Passenger experience is the great differentiator of the current aviation landscape. International hubs such as Dubai, Changi and Helsinki, as well as regional airports like Cincinnati and Dublin, are no longer simply focusing on optimizing airport processes. Rather they are concentrating on how to deliver high quality service and a pleasing experience to ensure passengers choose them instead of a competitor airport.

While much has been written about massive airport expansions and an emphasis on creating Zen-like atmospheres, designing more open spaces and enhancing airports with additional facilities, most airports do not have the budget or space for such updates or expansions. Nonetheless, while extra runways and gates will alleviate many flight delay issues, they do little to tackle common issues that fuel passenger frustrations.

What is needed to deliver the best possible passenger experience involves synchronizing multiple operations and stakeholders. A problem in one area can have a cascading and potentially disastrous effect on others, which, unfortunately, impacts passengers in some way. Next generation airports are getting ahead of issues, before they become disruptions, with a variety of technologies and a focus on increasing collaboration and information sharing between airport stakeholders—a strategic approach called Total Airport Management (TAM).

1 "IATA Forecasts Passenger Demand to Double Over 20 Years," 18 October 2016, International Air Transport Association, Accessed 17 January 2018 <http://www.iata.org/pressroom/pr/Pages/2016-10-18-02.aspx>

Better Information Leads to Better Outcomes

By using real-time data from a variety of sources and applying innovative data management, planning and forecasting tools, airport operators and stakeholders are detecting, and even predicting, passenger needs hours in advance—and working together to deal with emerging situations before they become problems.

At the heart of TAM is a holistic view of the passenger that begins before passengers even leave their homes. Weather, road and rail conditions can impact passengers' likely arrival times, while flight delays can change departure times and in turn affect their inbound journey to the airport. Knowing these factors beforehand, ticketing agents, baggage handling and security can plan and staff accordingly.

At the airport, understanding passenger volume and activity helps airports optimize wait times and better coordinate the passenger experience. Retail partners better anticipate foot traffic and revenues. Using data on meteorological conditions, flight prioritization, runway traffic loads, aircraft turn-around times, and baggage and passenger operations means reduced delays, unnecessary fuel burn, and cost savings for airlines and better service to passengers.

To drive this level of understanding and improve the airport experience, here are six of the most important capabilities operators should consider investing in.

Benefits of Total Airport Management

- ▶ Greater end-to-end visibility across landside and airside operations
- ▶ More accurate passenger movement predictions
- ▶ Increased non-aviation revenue
- ▶ Improved resource planning
- ▶ Prevention of end-to-end travel disruptions
- ▶ Improved passenger experience
- ▶ Improved competitiveness of an airport in a changing market
- ▶ Key enabler for collaborative planning processes

1. AIRPORT OPERATIONAL DATABASE

At the heart of airport operations is data—thousands of pieces of information on flights, passengers, baggage, equipment and more which typically exist in isolated systems. Bringing this data together into a centralized operational database unlocks its potential and boosts efficiency. Access to this real-time, accurate information enables airports, airlines and ground handlers to better prepare for the day ahead, proactively manage operations throughout the day, and prepare for future operational demands. Outside data sources, such as weather and traffic information, can be pulled in to support decision making (e.g. by anticipating flight delays due to early morning storms, airports can call in more staff to handle the forecasted spike in passengers arriving to the airport). In addition, data can be organized and pushed to digital displays and mobile devices for faster information delivery.

2. PASSENGER MEASUREMENT SYSTEM

How much do really know about your passenger and their journey throughout your airport?

- ▶ When do they arrive?
- ▶ How do they arrive?
- ▶ How long are they standing in queues?
- ▶ Where do they spend their time in airport retail and for how long?

Answering these questions can provide a range of benefits to airport operators and their partners; improved resource planning, increased retail revenues and enhanced passenger experience to name a few. Using measurement sensor technologies, airport operators can baseline performance, track progress against key performance indicators and extract a wealth of information on passenger habits and their experience as they journey throughout the airport.

3. SCENARIO PLANNING AND FORECASTING

What passengers want from air travel is to get to their destinations on time with minimal inconvenience and stress. To provide this experience for growing volumes of passengers, airports must forecast capacity demand years, seasons, months, weeks, days in advance, to be as prepared as possible. Airports must also accurately forecast demand on the day, analyzing real-time data on current conditions to proactively manage operations.

With Airport Scenario Planning and Forecasting software, like Leidos' BEONTRA, airports are developing comprehensive "what-if" scenarios and forecasting plans covering all time horizons from hours ahead to the next 30 years. Combining real-time air traffic information from sources such as FlightStats, the Airport Operational Database, or a Flight Information Display System, with existing information regarding bookings, schedule changes, passenger manifests and staffing plans provides a unified view that helps drive resource planning and predict issues early. Typical forecasting tools for airports offer:

- ▶ **Strategic Forecasting (3 to 30+ years):** Utilizing traffic forecasts and modelling against their own resources enables airport operators to identify their strategic requirements such as whether they can accommodate larger aircrafts or if an additional runway will be needed to handle more flights.
- ▶ **Seasonal Forecasting (1-24 months):** Seasonal planning simulates the effect of seasonally adjusted passenger projects, such as holidays, large social or sporting events, as well as the imminent technology advances that could affect the passenger process.
- ▶ **Tactical Forecasting (next 3 months):** Modelled passenger figures in relation to the immediate future enable staff and resource planning. Assists airports with addressing elements such as seasonal traffic spikes, passenger travel needs (e.g. business versus leisure) and staffing coverage.
- ▶ **Real Time Forecasting (on-the-day prediction):** Real time forecasting proactively monitors passenger figures throughout the day as operational situations evolve. Helps airports predict and prevent disruptions to travel, such as anticipating how delayed flights will affect operations, how road delays will affect passenger arrival times, and how adverse weather conditions will affect ramp operations.

4. RESOURCE MANAGEMENT SYSTEM

Disruptions are a common occurrence at airports, which makes automating the allocation of resources against a schedule impractical. Using the scheduled and real-time data from the Airport Operational Database with a Resource Management System (RMS), such as Chroma RMS, gives airport operators a critical tool for managing and allocating key resources, such as aircraft parking bays, check-in desks, boarding gates, etc., as efficiently as possible.

By using an intuitive, nontechnical, resource optimization rule builder for both landside and airside areas, airport operators can further define rules to ensure efficient resource utilization and set alerts to highlight resource constraints during the operational day. When schedules go awry, an RMS adjusts operations quickly according to built-in checks against conflicts and custom business rules, eliminating the use of manual workarounds.

For airport operators, Chroma RMS provides a multi-airport capability. For example, Avinor AS, which operates most of the civil airports in Norway, uses Chroma RMS to run and manage their resources across dozens of their airports.

5. AIRPORT COLLABORATIVE DECISION MAKING SYSTEM

An Airport Collaborative Decision Making (ACDM) system is about airport stakeholders (airport operators, airlines, ground handlers and Air Traffic Management) working together and making decisions based on more accurate and higher quality information, and adopting common operational procedures and processes. Put simply, "It ensures the right partners get the right information at the right time."

An ACDM, such as Chroma ACDM, gathers and processes essential airport-wide, real-time data on flights, boarding times, resources, passenger movements, fueling, de-icing, catering and weather delays. With this information, stakeholders can monitor and manage all operational areas and calculate variable taxi times to generate efficient pre-departure sequences that account for airline, aircraft size and wake vortices. As a result, airspace and airport capacity are increased, while aircraft taxi/runway queue times, CO2 emissions and operating costs are reduced.

6. INFORMATION DISPLAYS

Beyond simply providing flight information, new technologies, like Leidos' Chroma FIDS, enable airports to expand the use of their digital information display systems to improve the passenger experience, drive retail revenue and support airport operations. Here are some of the ways digital displays are being leveraged:

- ▶ **Queue Management:** Reassure passengers with information on estimated wait times for security screenings, customs processing and baggage arrival.
- ▶ **Passenger Entertainment:** News, weather updates and branded videos can be streamed to entertain passengers, significantly reducing their perceived wait time.
- ▶ **Self-Service:** Push information frequently asked at the airport and gate, such as questions relating to boarding zones, departure times, passenger upgrade lists, and luggage belt assignments.
- ▶ **Flight Updates:** Manage passenger expectations with real-time updates on arrivals, departures, flight status, flight numbers and more.
- ▶ **Wayfinding:** Used as interactive wayfinding stations, airport displays can provide airport maps and show passengers how to get to where they need to go. Some wayfinding solutions can send turn-by-turn instructions to passengers' mobile phones.
- ▶ **Airport Protocol Reminders:** Displays can be used to remind passengers about the check-in process, mandatory security checks, baggage policies and other airport protocols.

- ▶ **Passenger Safety Broadcasts:** In the event of an emergency, airport digital signage can broadcast disaster updates, including passenger evacuation plans, instructions on how to get to safe zones and even first aid tips.
- ▶ **Retail Advertising:** Location and targeted multi-media advertising can be aired to promote terminal stores, restaurants and their products, helping drive traffic and revenue.
- ▶ **Marketing Support:** Digital displays can be used to support an airport's branding strategy by sharing passenger interviews, airport changes/expansion plans and airport support services.

Bottom Line

As air travel increases, airports that lack the funding and/or space to expand their facilities must find ways to minimize disruptions and deliver exceptional service to passengers and airlines alike—or risk losing market share. The key to success is to adopt technology-driven capabilities that provide greater end-to-end visibility and planning across landside and airside operations and facilitate increased collaboration and information sharing between airport stakeholders.

Investments in a centralized Airport Operational Database, passenger measurement tools, scenario planning and forecasting software, Resource Management System (RMS), and Airport Collaborative Decision Making System are enabling airport operators around the World to detect, and even predict, passenger needs hours in advance—and work collaboratively to prevent end-to-end travel disruptions and enhance the passenger experience. Additionally, these “next generation” airports are expanding use of their digital information display systems to improve the passenger experience, drive retail revenue and support airport operations.



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