

FLOWPREDICTOR

A COMPONENT OF THE AIRPORTPULSE PORTAL THAT ENABLES
A PROACTIVE MANAGEMENT OF PASSENGER OVERFLOW

With many stakeholders involved, and with ever-changing operational dynamics, airport terminal operations are challenging, and disruptions invariably lead to long waiting times and frustration for passengers. Having insight into how disruptions will affect operations, and taking proactive steps in collaboration with other stakeholders, is the key to smooth terminal operations.

ISSUES

Flight delays impact

Passenger facilitation points are planned and resourced according to planned flight schedules. As delays and deviations occur, passenger flows will change, causing knock-on effects across the airport ecosystem.

Limited terminal capacity

Due to rising passenger numbers, many airports have capacity limitations.

Complex terminal infrastructure

As airports grow over a period of time, they become more complex and scattered in terms of their infrastructure.

SOLUTION

FlowPredictor is a comprehensive, customizable airport forecasting and prediction tool that moves the airport from reactive to proactive mode throughout the day of operations. At the planning level, it provides airports with accurate passenger flow forecasts and scenario simulation modelling capability to test and validate planning and terminal flow hypotheses.

FlowPredictor is based on a simulation model providing the highest quality passenger flow prediction. The system is continuously updated with real-time operations data related to flight arrivals, departures and resource allocations. Fast-forward operational simulations are run, using most up-to-date data, to predict passenger peaks in real-time. Every corrective decision can be instantly evaluated and optimized with scenario runs. The system enables the simulation of each individual passenger, has a fully customizable passenger behavior model and requires only a few simple and clear input parameters.

BENEFITS

- Enables effective, collaborative decision-making by terminal operations stakeholders.
- Empowers users to manage terminal operations proactively, thereby minimizing the effects of flight delays and deviations from plan, including more precise resource allocation.
- More precise actual staff demand will lead to reduced planning buffers and reduced costs.
- Increases capacity without necessitating investment in terminal extensions, due to optimized usage of the existing infrastructure.
- Overall situational awareness creates the ability to manage passenger flows according to different customer-defined goals such as revenue optimization, transfer stability or balanced resource utilization.

20%
reduction in
average wait times
at process points

20%
reduction in
process costs

10%
increase in
passenger
satisfaction

HOW DOES IT WORK?

SOLUTION COMPONENTS

1. AirportPulse portal

FlowPredictor is a component of the AirportPulse portal, part of the Day of Operations BI solution. It provides KPI dashboards and a single point of access to a broad range of services, to provide end-to-end situational awareness across the airport.

2. Actual data collection

Integrating all passenger-related, real-time and forecast data (AODB, measurement systems, planning systems), all of which are analyzed in relation to the points of interest in the terminal building.

3. Operational passenger flow simulation

With every change in the collected input data, a new simulation is run within 60 seconds in order to show an updated view of the predicted passenger flow.

4. What-if scenarios

All decisions can be tested by what-if scenarios in order to qualify the effects.

5. Optimization

With regard to selected parameters, the optimization shows you what resources are required in order to keep your SLA stable.

6. Visualization

Professional views, such as heat maps, process point overview, as well as 2D or 3D view of your terminal, allow you to visualize all information relating to passenger flow and your infrastructure.

CASE STUDY

In 2009, a leading European airport experienced problems with a lack of capacity during peak times resulting in difficulty adhering to SLAs.

The implementation in 2011 of the passenger flow forecasting system enabled terminal operations to get an accurate prediction of future passenger flow.

This information was used to set up a collaborative process with security companies and the federal police to optimize staff disposition according to the forecasted demand.

As a result of this capability, the airport increased passenger throughput and reduced average waiting times at process points by 20%, while customer satisfaction increased by 10%.

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