TRANSFORMING TRANSPORT

MOBILITY MEETS BIG DATA

NEWSLETTER

002 | August 2017

ATHENS AIRPORT BECOMES TESTBED FOR SMART PASSENGER FLOW

Athens Airport becomes testbed for smart passenger flow

It has become almost impossible to achieve significant double-digit potential savings in aviation by introducing aerodynamic improvements or more efficient engines. Instead, the use of Integrated Intelligent Information can bring an increase in the predictability and coordination among the stakeholders involved in all airport processes, resulting in significant potential savings.

> *Under the* Transforming Transport *project, the Smart Passenger Flow Pilot is going to validate the way Big Data technology can help to achieve these savings.*

Focusing on the passengers, the Smart Passenger Flow pilot aims to use Big Data technologies to improve the turnaround process in three different ways: increasing the operational efficiency, improving passenger satisfaction and reducing operational costs.

The key operational actors in this pilot are Athens International Airport (AIA) in Greece and the country's main national carrier, Aegean Airlines.

AIA was established in 1996 and has earned numerous international awards and distinctions. Despite the global economic crisis, the airport has seen one of the highest growth rates in Europe over the last few years. In the face of ongoing growth, one of the main challenges for AIA is to optimise the management of its infrastructure in order to handle more flights and passengers.

Aegean Airlines on the other hand recently received the award as Best

Regional Airline in Europe in 2016. Having AIA as its hub, it manages 57% of airport's flights in Athens, carrying 49% of AIA's passengers. Thus, the efficiency and quality of AIA services will have a strong impact on the passenger experience of Aegean's travellers.

To achieve the pilot's aims, project partner INDRA will act as technical player by conducting Big Data analysis, defining descriptive and predictive models, and developing a prototype which will validate the accuracy of the predictions with real-time figures at AIA.

Another project partner, AIRPORT GURUS, will provide its expertise on the link between airport operations and technology, contributing to the pilot on the current business and existing technology analysis. This will identify potential areas of improvement and define Key Performance Indicators to drive the pilot design.

Passenger arrivals at Athens International Airport (AIA)

Legend: Annual number of passengers

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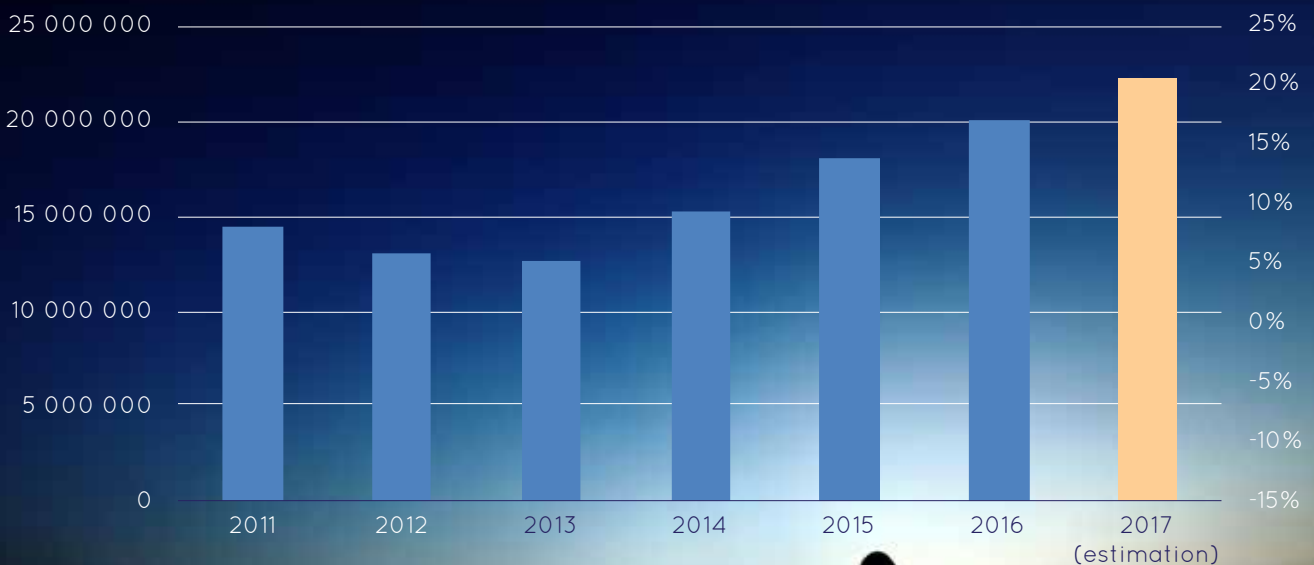
Big Data to improve passenger flow

The implementation of typical continuous improvement processes based on the Plan-Do-Check-Act cycle has reached a point where it has become more complex and difficult to extract any more benefits. Improvement based on traditional data management and exploitation is being increasingly exhausted, and can no longer support optimising operation in a highly competitive market such as air transport.

The identification of complex information by applying Big Data management paradigms will help identify hidden trends regarding different airport processes which will offer the airport market sector a new dimension to grow by identifying passengers' behavioural patterns.

This pilot is focused on understanding passenger flow within the airport, highlighting its impact on other airport processes such as aircraft, security and retail. Passenger descriptive models will be defined based on historical data. The combination of these models with flight schedules for a specific period will enable the pilot to predict when each type of passenger (business, economy, groups, etc.) will arrive to the airport and how he or she will circulate within it.

Benefits of the Pilot

Predict aircraft delays due to late passengers

Improve the transfer process and identify passengers who might miss connections

Support the scheduling of daily operation and resources required in security areas

Allow the creation of new business models based on data-driven decision making in retailing

Retailers can anticipate passenger preferences before their arrival to the airport, enabling the provision of customised offers.

Marketing strategies can be adapted to the expected passenger typology per time slot.

Current business and approach can be exploited using new insights to create new market niches.

Less delays, more business

The understanding of everchanging preferences, priorities and motivations of passengers will allow AIA to improve their business both directly and indirectly. More specifically, this will happen directly by enabling the implementation of smart and directed marketing to the airport users, but also indirectly through passengers' experience improvement which will facilitate their return to an easy-to-use friendly airport.

The pilot aims to apply the findings and insight gained from the Big Data analysis to help airlines and airports make better decisions about the passenger process and improve passenger flows, identifying areas of improvement and increasing passenger satisfaction.

Besides operational efficiency, passenger satisfaction will also significantly increase through more efficient use of resources. This in turn will streamline demand during peak hours by assigning systems and workforce where needed based on real time situation analysis and offer tailored services according to passenger segmentation. The future of Athens International Airport, and by extension all major European ones, looks brighter than ever.

Contact Us:
communication@transformingtransport.eu

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