The digital transformation of passenger flows and queues

Rising passenger numbers demand the optimised use of existing capacities. Internet-of-things queue measurement technology – such as the Passenger Tracking System created by **Xovis** – digitises analogue passenger flows, with the gathered real-time data helping airports to eliminate queues.

The airport industry is on the rise, and so are the number of landlocked airports worldwide. As IATA expects 7.2 billion passengers to travel in 2035 – almost twice as many as today – airports of the future will need to do more than simply increase in size. In order to keep passenger satisfaction at a high level, they must also focus on optimising the use of existing capacities.

Real-time data to minimise queues

A smart way to boost passenger throughput without building new facilities is to prevent queues from building up. Hence, airports need robust real-time data to tackle the issue before it starts to damage their reputations and frustrate passengers. Unsurprisingly, tenders for queue measurement systems have been increasing in recent years.

Advancing the digital transformation at airports, Swiss-based company Xovis has equipped 293 sites – including check-ins, gates and taxi ranks – at 61 international airports with the Xovis Passenger Tracking System (PTS). The internet-of-things (IoT) system combines Xovis 3D sensors and software solutions to measure KPIs such as waiting times, process times and passenger throughput. This real-time data allows airport operators to remain in the know on queueing situations and take proactive measures.

Expectation management of waiting times

How does a queue measurement system like Xovis PTS work? Ceiling-mounted 3D sensors count and track all passengers anonymously. The software receives data streams from the sensors and calculates the targeted KPIs. The real-time data can be accessed by airport staff members and shared with passengers via a simple mobile application.

At Dubai International Airport (DXB), the third-largest airport in the world, 5,000 staff members use the Xovis data on their mobile phones and tablets to monitor and identify bottlenecks; should a waiting time exceed a defined threshold, the team is alerted and can send staff members to open more counters. DXB also keeps passengers informed by displaying the measured waiting times on screens and the airport's mobile app.

Benefits for all airport stakeholders

Helsinki Airport (HEL) is not only an important hub for air traffic between Europe and Asia, but also a good example of the positive impact a reliable queue measurement system can

Xovis PTS monitors passenger flow to identify bottlenecks.

have. Currently, HEL intends to increase its annual passenger throughput from 19 million to 30 million.

Antti Tikkanen, business analyst within the digitalisation programme at Finavia – the operator of HEL – describes how the airport benefits from the Xovis PTS. "Our €900-million development programme includes the optimised utilisation of existing facilities and the adding of new sections. Having a technology in place to move the increasing number of passengers efficiently is key to improving the passenger experience. We now have the required real-time data to communicate effectively with all stakeholders, and to keep queue lengths and waiting times as short as possible."

AI for a seamless travel experience

With the right IoT queue measurement system up and running, airports can actively shape digital transformation on their premises. With its next-generation sensor, Xovis further advances the industry. AI-powered 3D sensors will further perfect the accuracy of the gathered real-time data and enable new applications allowing anonymous passenger tracking over long distances, which can lead to new insights. In the end, passengers will benefit the most from a seamless travel experience. As they save time from shorter queues, they are likely to spend more money in other areas. ∎

Further information
Xovis
www.xovis.com