

Smart choice?

Oliver Clark reports on a possible solution for monitoring passenger flow through airports.

The world's airports are facing a capacity crunch with ever-growing passenger numbers creating major operational challenges. While passenger queues are getting longer and major airline delays are becoming more common, airports are turning to new technologies in a bid to boost their efficiency while growing non-aviation revenues.

One technology solution aimed at easing these issues comes from Singapore-based Paxflow which has developed and launched the world's first Wi-Fi enabled smart boarding pass – the Personal Passenger Assistant (PPA) – that allows airlines/airports to monitor and track passenger movements in the terminal building. The technology also provides the traveller with regular flight status updates or gate changes.

The electronic smart card – roughly the size of a credit card – is carried by each passenger from check-in through to departure and landing. It emits a Wi-Fi signal, which when fed through a network of sensors appears as a blip on a 2D virtual 'dashboard' of the terminal building.

Flight supervisors can use the dashboard to monitor and track a passenger's every move, determine if they are running late for a flight, locate them to within metres if missing and send them regular updates of flight delays or cancellations and gate changes via text messages.

This represents a shift in passenger management – from tackling problems as they arise – to identifying potential bottleneck issues and dealing with them proactively.

"It takes just one passenger to delay an aircraft, but early warning of potential problems and issues provides airports, airlines and security personnel with time to make decisions and take action," explains Paxflow commercial director, Todd Irving. He adds that the system represents a considerable saving in terms of manpower. "Airports, airlines and ground handlers have staff performing the function of finding lost passengers today, but without the benefit of knowing their location."

The PPA was piloted in Geneva International Airport in October 2007, in conjunction with Flybaboo, Swissport and Nuance Trading. Passengers on selected Flybaboo flights were willing guinea pigs and the test results were encouraging. Many passengers noted the cards' ease of use, while gate operators reported a distinct improvement in punctuality.



The PPA represents a complex system with each card containing full information on a passenger's flight details, including destination, baggage tag numbers, and where mandated by security agencies, even biometric data.

This information can then be cross-referenced with a passenger's location and if they appear to be running late they can be buzzed with audio or visual alerts or guided to their gate.

"The PPA card acts as a link for the passenger, airport, airlines and ground handlers through the use of the Passenger Name Record (PNR) and other associated flight data to provide relevant alerts. However, there is no need to store all data as passengers will still carry their passport," says Irving.

While the PPA's usefulness in passenger tracking and management was tested by the trial in Geneva, its potential as a retail tool was also demonstrated.



During the pilot, staff at Geneva International Airport began to see clear patterns of behaviour, allowing them to develop what they believe to be an intuitive feel for how passengers would act at given times, while retail messages prompted passengers to visit the shops and increase their dwell times in key locations.

"There are practically no limits on this technology and we can gain a very good knowledge of passenger behaviour. We know what a passenger is doing if we give him the PPA – we can follow up what he is doing, we know how long he has spent in a particular shop, how long he is queuing somewhere and over time build up a picture of his habits," says Didier Steullet, project manager at Geneva International Airport.

Indeed, the trial convinced Geneva to consider deploying the Paxflow system as the backbone of a new frequent flyer programme, which could provide members with a fast track through security and

a range of other exclusive offers and benefits. Paxflow is currently refining the design and Geneva International is looking to have an initial membership of between 2,000 and 3,000 passengers as early as next year.

"By employing the PPA at Geneva we could offer much more than simply a fast track card system through immigration like the ones currently being used at Amsterdam and Nice," explains Steullet.

Other commercial opportunities for the PPA include applying data garnered from a passenger's movements to commercial strategies or to support marketing campaigns or even being used by architects in planning new airport terminals.

The use of a network of Wi-Fi sensors is nothing new for many 'smart airports' (those with Wi-Fi capability), which already offer a variety of services and entertainment options.

There however remains concerns about any new technology that stores personal data, particularly concerning identity theft or the prospect of security threats.

Irving is convinced these fears are unfounded and points out that all information stored on the PPA card is the same as that which is already handed over by passengers when they check in. He adds that the PPA system could actually improve security.

"The system – both network and card – utilises advanced encryption making the data secure. The data is also stored in back-end systems, thus increasing the security of the system," says Irving. He adds: "The PPA is passenger-centric, allowing improved security by combining data from external sources to monitor potential high risk passengers – through systems such as biometrics and CCTV – allowing personnel to focus their efforts and resources on key risk areas."

Perhaps the greatest challenge for the developers will be convincing airports to choose their system over a range of other cost saving devices now being introduced across the industry. IATA's Simplifying the Business initiatives, including e-tickets, the trial use of Radio Frequency Identification (RFID) to track cargo and the introduction of 2D bar coded flight data sent via mobile phones, which is already being adopted by a number of airlines.

Despite this, Irving is confident that the PPA has clear operational and business advantages over other systems and can be delivered in large numbers cost-effectively.

"Paxflow isn't just for check-in. It is a service-enabler for passengers throughout their airport journey. The 2D barcode to mobile phone check-in system, on the other hand, provides no additional information to passengers, for passenger processing, or passenger service benefit, while sending a 2D barcode to the mobile phone also costs per message," he says.

With the success of the Geneva trial still fresh in its mind Paxflow is already in talks with several other airport authorities in Asia, Europe and the USA for future pilot trials.

While this type of technology is still very much in the testing stages, airports around the world will surely be tracking developments carefully in the hope of improving their passenger management and tapping into potential new revenue streams.

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