

The great cloud migration

Cloud-based IT systems remain one of the air transport industry's biggest trends and, as aviation's post-pandemic recovery picks up, the need to ensure a safe, seamless and secure passenger flow continues to evolve. Paul Sillers reports.

Moving to the cloud has multiple benefits for airport operators, such as invigilating passenger flows, monitoring baggage screening processes, more efficient use of space, and ultimately, cost savings.

Because "the cloud" is a method of managing IT resources that replaces local machines and private data centres, airport personnel – from check-in staff to aircraft dispatchers, baggage processors and security staff – can access virtual computing, network and storage resources on a "Software as a System" (SaaS) basis.

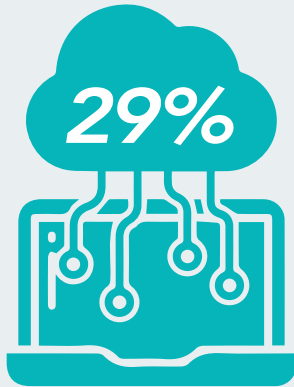
According to SITA's recently published Air Transport IT Insights, 29% of airports have already shifted from dedicated data centres to energy-efficient cloud

alternatives, and a further 44% will have implemented such plans by 2025.

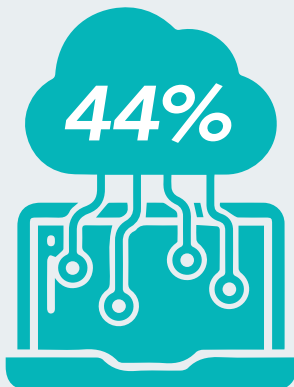
Furthermore, 84% of airports are planning major investments in cloud services research and development (R&D) by 2025.

Jeremy Springall, Senior Vice President at SITA's "SITA AT BORDERS" business, which primarily focuses on border management and facilitation, says: "Cloud technologies are a high-spend area, and equally one of the highest spend areas airlines and airports are looking at is security as well. That vulnerability around technology is a big concern for them, so it remains a priority."

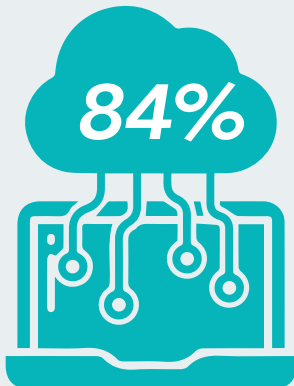
Airports shifting from dedicated data centres to energy-efficient cloud solutions



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For regional airports and budget-conscious airlines, this means that the cost of running embedded local servers, power-hungry workstations, costly network connections, and significant local IT support services including on-site technicians can be taken care of instead by a cloud services provider.

What was once a daunting capital cost now becomes a pay-as-you-go operating cost.

COST ADVANTAGES

"Smaller airports need cloud-based [solutions] to help them save costs – they don't necessarily need to have tailor-made IT solutions on site," Fabrizio Martin, Head of Civil Marketing & Sales, Secure Communications and Information Systems at Thales, tells *Regional Gateway*.

"Cloud-based airport solutions enable a stressless and seamless experience. The major need is to ensure that passengers have a pleasant time when travelling. Better integration between airlines and airports can be highly beneficial in streamlining operations."

Thales, says Martin, "has a multi-cloud strategy and provides security solutions: encryption, cybersecurity, access key and identity management, allowing us to adapt to any type of cloud environment."

He cites the company's "InFlow" as being a solution that can be of particular benefit to smaller airports, using a combination of cloud infrastructure, artificial intelligence and real time predictive analytics to enable a smaller workforce to be deployed in a resourceful and targeted manner.

InFlow is a tool that can help airport operators anticipate the way passengers behave in the airport and save money with staff allocation by providing predictive warnings (from one to three hours in advance) so that bottlenecks and other terminal-related issues can be avoided and dealt with, based on data generated via a mix of real-time monitoring and forecasts using historical and seasonal data.

"It also helps airports with ancillary analytics dedicated to retail areas and to people behaviour – such as crowd prediction and walking time analytics – so that both security and operational issues can be prevented," says Martin.

He adds that Thales is currently "finalising the cloud version of our Fly-to-Gate (F2G), the seamless journey solution, helping passengers move in the terminal just using their face as a key."

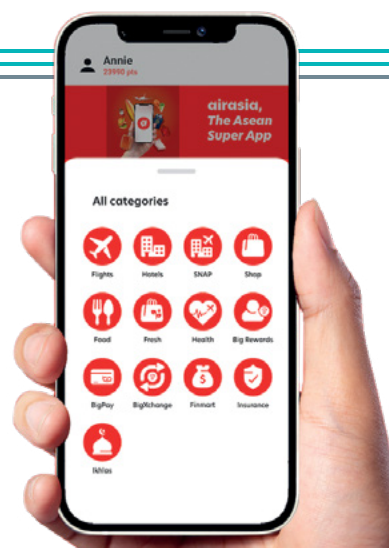
ORCHESTRATING THE TRAFFIC

Another key player in the switch to cloud-based airport IT infrastructure is Lisbon-based Vision-Box. It believes that smaller airports can use cloud-based technologies to enable a contactless airport experience for greater efficiency and improve passenger satisfaction, allowing passengers to interact with all touchpoints in the airport, leveraging through an initial intake of customer's data via digital off-terminal channels.

"Integrating these technologies can also offer airports a more centralised and simplified approach to management through automating compliance, strengthening cyber security, enhancing

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AirAsia’s ‘SuperApp’, which is powered by Vision-Box’s cloud-based Orchestra.

security screening and reducing dedicated resources. They also allow access to real-time data, managing traffic flow and advancing warnings of potential delays,” Jean-François Lennon, Vice President of Strategic Sales at Vision-Box, a provider of digital identity solutions, tells *Regional Gateway*.

Vision-Box’s cloud-based Orchestra software platform, explains Lennon, “is a collaborative ecosystem of real-time data orchestration able to integrate biometric devices into third-party systems, guaranteeing interoperability between travel stakeholders’ multiple external systems such as border management systems, airport passenger processing platforms and airlines’ departure control systems.”

ENHANCING SECURITY

“Orchestra connects multiple stakeholders around the traveller’s journey to enhance security, customer experience, non-aeronautical revenue, and operational efficiency,” Lennon continues. “For airlines, we have seen more demand to initially host the passenger on-boarding – mobile check-in, digital identity creation, travel attributes – on the cloud, subsequently sharing some pseudonymised attributes of the travel journey with the airport to enable fast clearance on-site through automation and biometrics-capable solutions.”

An example of this is AirAsia’s “SuperApp”, which is powered by Vision-Box’s cloud-based Orchestra backend and which executes the vetting of the initial Digital ID creation in a cloud-based

containerised environment of the customer’s cloud ecosystem.

This in turn increases efficiency by reducing travellers’ time spent in queues at the airport terminal and creates, says Lennon, “a more seamless travel experience for passengers, enabling the possibility to reuse on demand the same credentials for subsequent trips. Enrolment can be done from the comfort of home and passengers can arrive at the terminal using their face as their boarding pass right from check-in through to security and boarding. By accelerating the traveller through the checkpoints, extra dwell time can help boost airports revenues – while enabling fast-track journeys at scale and for multi-locations through a unified platform.”

CONVERSING WITH MULTIPLE AIRLINE SYSTEMS

One of the limitations of traditional on-site airport IT systems, regardless of the scale of an airport, has been having the ability to accommodate the various different IT systems that each airline utilises.

It’s a challenge that New Zealand’s Wellington Airport is addressing through the implementation of Amadeus’s Airport Cloud Use Service (ACUS), which simplifies airline agents’ access to their respective booking portals.

ACUS, a node within Amadeus Flow, Amadeus’s passenger handling solution, connects agents to airlines through the cloud so that agents can provide check-in and bag drop from hotels, conference venues and cruise terminals across the

Vision-Box says smaller airports can use cloud-based technologies to enable a contactless experience for greater efficiency and improved passenger satisfaction. Photo Vision-Box





Safety and security



Robin van Gemert, Manager, Point FWD

Planning on upgrading your security screening process?

With many airports currently upgrading to modern screening equipment, Automated Prohibited Item Detection Systems (APIDS) are integral to achieving more secure and automated security checkpoints.

As well as reducing the number of staff required per lane to screen images, they can also help maintain passenger flow and reduce operating costs.

For regional hubs, the implementation of APIDS also supports the business case to deploy Explosive Detection Systems for cabin baggage (EDS-CB).

"When upgrading or redesigning an airport's security screening technology it is vital to rebalance all processes to accommodate and integrate the new solution," says Robin van Gemert, Manager at Point FWD, specialists in security checkpoint design, planning and implementation.

He adds that for regional airports, where capacity and resources are often limited, security screening upgrades can be overlooked.

"Point FWD recognises that no two airports are the same and that tailored solutions are required for each project," Van Gemert continues. "We provide a range of services based on comprehensive data-driven analysis and APIDS trials to identify the core components of an airport's passenger screening process and revolutionise their checkpoint landscape."

"With ACUS, we've been able to retire 37 traditional workstations and 10 servers, replacing them with modern thin clients which are 10 times more energy efficient."

Jeremy Burrows, Head of Technology, Wellington Airport

world, as well as while roaming around airport terminals.

Wellington's agents can offer personalised services to passengers at check-in and boarding when flying on Qantas, Jetstar, Fiji Airways and other airlines, by logging on to ACUS to access whichever airline system they need.

Hosting applications on cloud infrastructure, rather than local servers within the airport's own data centre, has removed the need for local maintenance whilst allowing the airport to completely remove 10 of its own servers.

ENERGY SAVINGS AND RESILIENCE

"With ACUS, airline staff can now log on to access any airline system they need for check-in and boarding. It means we've been able to retire 37 traditional workstations and 10 servers, replacing them with modern thin clients which are 10 times more energy efficient," says Wellington Airport's Head of Technology, Jeremy Burrows.

A typical on-site PC workstation uses 135 kilowatt hours during peak performance, compared with "thin clients" that use just 15 kWh.

Thin client devices are simple, low-power computers, including tablets and laptops, that provide an interface to the cloud, where computing tasks are undertaken by more efficient servers.

The space that was once used for permanent workstations can now be redeployed for other, potentially revenue-generating airport amenities.

"It's good for our bottom line and for the planet to be greatly reducing our energy consumption like this," Burrows adds.

There's an additional benefit for using the cloud in the case of Wellington Airport: earthquakes.

New Zealand is situated in the collision zone between the Indo-Australian and Pacific tectonic plates. In the last year, 14 earthquakes with magnitudes of between 3.6 and 5.2 on the Richter Scale were recorded in the Wellington area.

Cloud-based airport infrastructure "provides greater flexibility to provide passenger services in different locations quickly and easily if needed," concludes Burrows.

"For example, if there was a natural disaster, all we need is power and an internet connection to operate rather than bulky physical infrastructure." ■

Amadeus's Airport Cloud Use Service (ACUS) has been implemented at Wellington Airport.

