



WATCHING BRIEF

Anthony Incorvati explains how network camera surveillance at airports can drive operational efficiency

In April, I returned to the US from a business trip, flying from Copenhagen to New York via Charles de Gaulle, Paris. To put it bluntly, it was chaos: long queues of frustrated travellers and raised voices echoing around the terminal.

Landing in Paris, I had a two-hour window to make my connecting flight. I didn't stop moving – or queuing – throughout the whole journey. By the time I arrived at the departure gate it was about to close. It had been stressful and I was relieved. I'd only just made it (and only because, thankfully, I didn't stop for that coffee).

My own experience is far from isolated. Airports around the world are facing the challenge of the sharp rise in demand, exacerbated by a shortage of airport staff. This

situation doesn't look like it's going away anytime soon.

Following long delays at Amsterdam's Schiphol airport, one of Europe's busiest, the largest Dutch trade union has ominously predicted a "hot summer".

The capacity challenge is a 'good' problem; following two years of economic deficit, airports are under commercial pressure and need to fill flights. At the same time, if passengers are going to resume air travel long-term, airports have to ensure not only a stress-free experience, but one which is, ideally, positively enjoyable.

High airport capacity also increases the strain on surveillance. But, despite the security imperative, department budgets are under increasing pressure. As most security managers realise, airport management has

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mainly seen surveillance technology as a cost centre. Keeping the airport safe will remain a fundamental mandate of security departments, but at some airports, this is no longer seen as enough.

Recently talking to a CEO of a major US airport, he expressed the burden of high investment in surveillance technology that in his eyes was providing only occasional, albeit vital, security benefit. He posed the question: "How can we use this technology to deliver more value?"

He's not the only one asking this. The good news is that the existing surveillance solution at most airports already provides a platform that can deliver increased operational value, alongside the fundamental surveillance role, while helping to resolve the challenges of capacity.

Thanks to artificial intelligence (AI) with deep learning on the edge, the latest surveillance cameras have become the ultimate sensors. Providing the cameras can see it, their algorithms can analyse it, meaning that analytics information helps airport operations teams understand activity and situations that they can respond to and resolve.

Surveillance technology can provide an immediate response to improve the customer experience. As network cameras identify passenger choke points, bottlenecks can be reduced or removed. Creating a smoother and faster journey for the traveller through the airport, camera data with analytics can ensure shorter queues and less crowding. And, while this improves the customer experience, it can also help aircraft depart on time.

Airlines make money with planes in the air, rather than on the ground, so a fast turnaround is key. With the ability to detect hold ups, for example at baggage handling or refuelling, network camera analytics can be used to bring in staff and resources where and when it's needed. This could enable an immediate response to a real-time situation, and perhaps more importantly, through to an operational process improvement with better understanding of a longer-term trend. As a result, the technology can reduce the cost of delays and lessen the potential of the domino effect to waiting flights.

Contrasting to the relatively relaxed environment of the departure lounge, here network cameras can optimise profitability for the airport's retail and hospitality business. Tracking people movement and behaviour enhances marketing potential, so using data available through the existing surveillance network can improve retail placement and the customer experience, helping to drive sales.

As camera analytics help achieve a more punctual aircraft departure schedule, combined with more efficient use of resources, these advantages will also improve an airport's environmental sustainability. Fewer delayed departures and reduced congestion within the airport means lower energy consumption, including aviation fuel, helping to decrease the total CO2 footprint.

To achieve these benefits, a sufficient network of capable surveillance cameras is required. If you don't have the coverage, there is no analysis. For airport security departments with a stake in the management of the network camera system, this can elevate their importance and allow them to play a more strategic role in airport operations. What's more, understanding how surveillance technology can generate operational benefit is essential if security teams are to maintain a leadership role.

At many airports, IT departments are taking greater responsibility in ownership of the surveillance platform. This presents a risk to selection of the optimal security solution, while diminishing the influence of the security department.

Best-in-class surveillance technology, that can also enable operational efficiency gains, ensures that security isn't sacrificed and strengthens the role of the security teams in the decision-making process. For security department heads, increased contribution to operational efficiency and profitability is also useful value-add development experience, along with recognition in the career progression path.

Right across the airport, from arrival to departure, the network camera surveillance system can deliver operational as well as security gains. Starting with the smooth and fluid flow of passengers and traffic arriving at and departing from terminals, these are already important areas in terms of surveillance. From an operational perspective, preventing congestion at ingress reduces the knock-on effect at later points, while entrances are also the crucial first touchpoint of the customer experience.

DESPITE THE SECURITY IMPERATIVE, DEPARTMENT BUDGETS ARE UNDER INCREASING PRESSURE

Applications such as vehicle licence plate recognition (LPR) and Artificial Intelligence (AI) technology provide efficient monitoring of moving traffic, while surveillance can detect loitering vehicles and unsafe parking at drop-off zones. In addition to maintaining security, information from cameras can be used to alleviate short-term operational challenges, such as easing congestion by redirecting vehicles via automated signage integration. Analytics can also help better understand traffic behaviour for lasting effect, awareness that can be used to implement measures to enhance flow at peak periods.

As the camera network covers public transport links, people counting technology provides data to improve flow at bus, coach and rail connections, and manages peak periods more effectively. The application also provides notifications if passengers are moving in unintended directions, information that can be used to help smooth the customer experience on arrival.

For passengers arriving by car, a positive experience in the parking lot sets up a relaxed onward journey. With security challenges such as the rise in the theft of catalytic converters, passengers need to feel that their vehicle will be protected, so combining cameras with audio can relay pre-recorded or live messages that provide assurance while deterring potential criminals. Finding an available parking space can be a challenge, especially at peak times, so pointing drivers to available parking spaces using the camera and audio combination with live signage makes it a lot easier for them.

Public area security, extending from an airport's entrances up to the security checkpoints, covers locations including check-in, bag-drop, as well as baggage reclaim. This is the area where most security incidents take place, so there's already extensive network surveillance camera coverage. It's also the area of the greatest passenger bottlenecks, so there's significant opportunity to use the investment to improve efficiency and the customer experience.

Helping to understand the overall demand as passengers arrive at the departure terminal, here too, people counting technology provides actionable insights

with analysis of passenger trends and identification of peak times. This information can optimise staffing and improve processes to maximise flow. It's also possible to link the application to a building management system to reduce energy consumption and improve interior climate control according to accurate, real-time passenger numbers.

Smart AI algorithms integrated with information systems can push data out to traveller apps and displays to help passengers with their journey through the airport. Reducing long waiting times, queue monitoring analytics provides real-time data that can be acted on to open new check-in desks or bring in resources to the security control. While the current capacity challenge appears mainly to be down to a lack of airport operatives, analytics data can identify long-term trends to efficiently guide future staffing requirements and help prevent long waiting times.

SURVEILLANCE ENABLING OPERATIONAL EFFICIENCY GAINS, ENSURES THAT SECURITY ISN'T SACRIFICED

Through the security check, while the 'sterile' area has fewer incidents to monitor, surveillance still has an important role in monitoring traveller safety. Across the retail stores and hospitality areas of the airside though, network camera technology is increasingly used for marketing purposes. Analytics can accurately show the routes people take, including areas where they linger, which can help optimise store layout including high-value goods display. In

a similar way, analytics will identify dwell points, with alerts to trigger customer assistance, as well as providing notifications on queue formation.

At the ramp, a fast turnaround of refuelling, cleaning, catering and baggage handling, is vital to ensure flights leave on time. Network cameras are increasingly deployed in rapid reaction support of the ground operation where any potential hold ups can be resolved by quick identification and diversion of personnel. AI algorithms can also detect trends to improve departure times, down to details such as the number of passengers with carry-on baggage.

Surveillance cameras in this area of the airport still have an important role in security and safety, from identifying responsibility in instances of ground damage, through to ensuring that baggage handlers are wearing the right safety protection. While the camera network is also there to monitor unfortunate instances of inside security risks, effective analytics with reliable data can improve agreements with service providers.

An important requirement for the integration of AI and deep learning with a surveillance camera network is an open platform. This allows third-party developers to create new applications, based on the expansive potential of edge analytics and powerful system-on-a-chip capabilities for network video. This will enable further opportunities for operational improvement, increasingly positioning the surveillance system as a platform for growth.

As a key stakeholder of an airport's surveillance technology, security teams advising on these capabilities will have the opportunity to deliver greater operational value, helping to facilitate use of the technology throughout the airport. The surveillance system is no longer just a cost item, but is the tool that's empowering the security department to take on a strategically important role ●

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Existing surveillance solutions provide a platform that can deliver increased operational value

