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Getting On The Runway To Growth

Foreword

Earlier this year IATA reported that the aviation industry is finally welcoming back pre-pandemic passenger numbers[i]. However, this positive outlook is not being felt by all airports.

While some airports in the United States of America (U.S.) are more worried about buckling under the pressure of the recent boom in air travel, others – both in the U.S. and Europe – continue to feel the aftershocks of the pandemic on air travel and are yet to get back in the black.

Indeed, half of airports' revenue has not recovered to that from before the pandemic (48%), with 37% of airport leaders reporting they are still in debt.

This situation is being aggravated by the lack of balance in the recovery of passenger numbers and routes since the pandemic. Half (52%) of airports globally have not been able to restore all of the routes served before the pandemic, nor are they processing as many passengers.

It is, therefore, massively concerning that 52% of airport leaders worry about the financial stability of their airport unless they can make significant improvements.

Revenue growth is a priority for all airport leaders. That means getting a deeper understanding of how they can optimize processes that will allow them to drive efficiencies and increase their capacity to introduce new airlines. As well as how they can maximize this opportunity to drive all-important revenue from the passengers they attract.

To understand the current state of airports, as well as the barriers and potential areas for revenue growth, we surveyed 200 senior leaders at airports in the U.S., United Kingdom and Italy.

What we found is that while every airport has its unique challenges and opportunities, there are common trends which unite them. Being plagued by manual processes and legacy technology and systems, a lack of capacity to welcome new airlines, and ongoing disruptions from flight cancelations and service failures are but a few.

We hope this report will help airport leaders recognize how they can seize on this period of change to transform their operations. It is time to relinquish reliance on outdated processes to drive innovation and get on the runway to revenue growth.

We welcome feedback from the industry.

George Richardson

Co-Founder & CEO, AeroCloud

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State Of The Airport Sector

To capture a clear picture of the state of the sector, including the current opportunities for airports to achieve much-needed revenue growth and profit, we need to examine the key hurdles facing airport growth over the next 12 months.

Passenger volume growth needed to drive revenue growth

After a number of challenging years, the need to attract and, in turn, accommodate more passengers remains critical to their commercial success. This is perhaps unsurprising given Airport Passenger Duty and Passenger Facilitation Charge were ranked as the most important revenue drivers for airports globally.

> The need to attract more passengers is particularly acute in the U.K., where 72% of leaders are concerned that the number of passengers won't meet or exceed pre-COVID levels.

While some of the country's major hub airports, such as London Stanstead[ii] and London Heathrow[iii], have reported reaching pre-pandemic passenger numbers in 2023, many regional airports are struggling to return to the same level of service and, in turn, passenger volumes. For example, London Southend has seen a 93.2% decline in scheduled departures between 2017 and 2023, from 5,521 departures in 2017 to just 377 in 2023. Similarly, Cardiff is facing a 62.2% decline during the same period, with 8,309 departures falling to 3,283[iv].

These airports' situations also illustrate the concern amongst 80% of U.K. airport leaders that passengers will choose to fly from other nearby airports. Bristol International Airport, which also attracts passengers from Cardiff and South Wales, for example, has seen just a 0.4% decline in departures between 2017 and 2023.

In the U.S., the challenge is not in attracting passengers, with airport traffic steadily growing and a 150% passenger increase estimated by 2040[v]. Instead, they are struggling to manage the growth of travelers with limited capacity. Both in enabling the number of airlines that can operate – with the need to optimize and increase capacity for take-off and landing slots topping the commercial priority list for U.S. airports.

Helping them to meet these new capacity requirements, 89% of U.S. airports report securing federal funding, such as from President Biden's Bipartisan Infrastructure Law, is a priority. For example, Des Moines International Airport will receive $10.8 million to replace the 1948 terminal that no longer meets the airport's needs and is currently operating over capacity[vi]. But this is just one side of the story; technology is a key enabler for increasing capacity.

Earlier this year, the airport invested in a new cloud-native gate management platform, which leverages AI and machine learning, to improve its allocation of aircraft to gates and stands[vii]. Similarly, airport leaders in the U.S. cited common-use tools as the top two technologies that would sufficiently improve their airport operations, allowing different airlines to share resources, including check-in desks, as well as common-use passenger self-service kiosks, such as for self-service check-in, bag tag printers, and payment devices.

Likewise, many Italian airports have seen passenger numbers steadily increasing since the pandemic. Florence Airport, for example, reported an 8.57% increase in Q2 2023 compared to the same period in 2019.[viii]

150%

The US predicts 150% passenger growth by 2040

However, similar to the US, the challenge Italian airport leaders face is how they can manage and build on this growth. 32% of airport leaders highlight that there is already not enough space in their terminal(s) to add more airlines.

It's not just the volume of passengers, but the ways in which they contribute to revenue growth. In the U.S., for example, the Airports Council International raised the issue of the Passenger Facilitation Charge having been capped for more than 20 years with no adjustments for inflation, which means a loss to airports in real terms[ix].

Consistently across all regions, over two-thirds of airport leaders expressed concerns about the cost of living reducing consumer spending with concession partners at the airport over the next 12 months, which provides much-needed ancillary revenues. Indeed, it was perceived by airport CEOs to present the joint greatest operational risk, alongside disruption caused by factors outside of their control, such as industrial action or flight cancelations.

#1

Direct spending from passengers is the number 1 revenue driver for US airports

Operational challenges preventing seamless airport management

The reliance on traditional and ineffective airport management and communication methods continues to present significant challenges to airport operations.

When asked about their current operational difficulties, the most commonly cited issue globally was ineffective communication between other airport stakeholders, such as ground handlers and airlines, as they aren't able to collaborate on shared platforms (48%). This increased in the largest airports, rising to 62% for airports grossing £1bn pounds or more.

This is critical to the smooth ongoing management of operations, but is particularly critical when airports face moments of disruption and they need real-time coordination between operations teams, ground and passenger-facing teams, and airlines. Indeed, globally, airport leaders perceive the greatest risk of disruption to be a lack of communication or miscommunication between airport stakeholders, such as ground handlers and airlines, which can lead to errors.

Airport Snapshot

In the summer of 2021, Tropical Storm Elsa unleashed rain and flooding on Florida and forced many of the region's airports to close to inbound flights and divert them elsewhere.

Sarasota Bradenton International Airport (SRQ) was one such airport. But it has recently invested in intelligent, cloud-based airport management software, which allowed it to track as air carriers began cancelling their flights in and out of SRQ throughout the day. This made it so much easier for its staff to answer passengers' inquiries about flight status, which is one of the most challenging pre-storm issues airports encounter[x].

"Compared to last time something like this happened, communication was so much better, and we saved so much wasted time. People didn't need to chase down information, and we didn't have passengers and tenants waiting around for any updates."

Evan Knighting
Senior VP and Chief Information Officer, SRQ

The continued use of manual processes was cited as the next greatest challenge to airport operations. 40%of global airport leaders called out their continued use of Excel and Word documents to store and manage operational information, such as for gate management and the RONs (Remain Overnights).

Many airport leaders recognize this situation is not sustainable and see the adoption of new technologies as critical to helping them optimize and scale their operations. Three-fifths (60%) of airport leaders reported that not investing in new technologies to optimize airport operations - such as SaaS platforms, automation and artificial intelligence (AI) – presents a risk to their airport in the coming 12 months.

> But looking forward to the next 12 months, the greatest concern airport operations leaders anticipate relates to staffing (62%). This is particularly true for smaller airports, with the figure rising to 86% amongst leaders of airports that process up to 5 million passengers a year.

Staffing issues have blighted airports since the world opened up again after the pandemic, but while a global issue, the origin of the issues differs between the U.S. and Europe. In Europe, the staffing issues derive from the fact that many people in roles that underpin essential airport processes – such as ground handlers and security officers – were made redundant during the pandemic, as their salaries accounted for such a significant proportion of airports' outgoing. Many of these individuals have now moved into new roles outside of the sector, leaving airports struggling to recruit vacancies.

In the U.S., as federal employees, there were fewer redundancies at airports during the pandemic. However, with the recent boom in travel, 45% of U.S. airports are struggling to recruit enough staff to cope with the influx of new passengers and are under-resourced.

62%

62% of airports with revenue over £1BN still use manual processes to manage operations

45%

45% of US airports are struggling to recruit enough staff to cope with the influx of new passengers

The threat of disruption – both beyond and outside their control

Airport leaders are concerned about the impact of disruption over the coming months – both those events that are in and outside of their control.

Technology faults were a concern to one-third of airport leaders. Whether due to a technology fault or downtime of its own airport operations systems (32%), or a technology fault with or downtime of a supplier or service provider, such as air traffic control (31%).

This is perhaps unsurprising after a "one in 15 million" technical glitch resulted in the National Air Traffic Services being unable to process flight plans automatically for several hours of the U.K. August Bank Holiday in 2023. During this peak day for air travel, more than one-quarter of flights were canceled, affecting an estimated 250,000 people[xi].

The impact of disruptions from factors outside of their control is troubling nearly two-thirds (69%) of airport leaders. This includes, for instance, the impact of extreme weather, which can ground aircraft and lead to flight cancelations

However, their greatest concern relates to disruption caused by airlines canceling and overbooking flights.

This is unsurprising given airports must support and manage the frustrations of passengers at the airport facing these delays or cancelations.

Indeed, 74% of airport leaders called out how flight cancelations due to airline issues impact the reputation of their airport. Given that the blame is often misdirected to the airport itself, in turn impacting its reputation, it is perhaps unsurprising that 64% worry about such disruption impacting their CSAT scores.

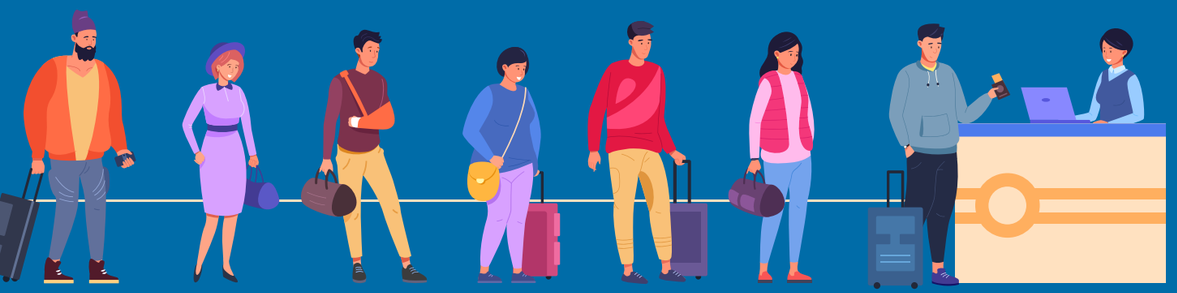
"When unexpected disruption arises, airports often quickly become congested with grounded aircraft and crowded terminals. That's because many airports don't have the holistic view required to optimise their response, whether that's generating additional runways or gates. Similarly, this lack of visibility presents issues when it comes to ensuring the safety and security of passengers, as many airports can't track passenger flow in real-time to identify potential pressure points, which would enable them to better deploy their teams to better respond and manage the scenario."

George Richardson,

Co-Founder & CEO, AeroCloud

AeroCloud

Passengers As The Route To Revenue



Nearly all (93%) of airport leaders said increasing their growth margins is a key commercial priority for their airport. And as outlined above, airport leaders are acutely aware of the important connection between passenger growth and commercial growth.

The key priorities for attracting passengers and maximizing the commercial opportunity are:

- **Attracting new airlines**
- **Boosting the passenger experience**
- **Increasing passenger spending**

But how can they do this?

Attract new airlines for new routes

Over half (53%) of airports reported they have not been able to restore all routes that were available pre-pandemic. Smaller airports have struggled more than their larger counterparts; in the U.S., 86% of airports with revenues of between $12M and $60M have been unable to restore all routes, and it was reported a similar number of Italian airports with revenues under €115M (82%).

But regardless of size, almost all airport leaders hope to increase the number of flights traveling through their airports by attracting new airlines (92%) and optimizing take-off and landing slots (93%) to increase capacity.

#1

Attracting new airlines was the number 1 commercial priority for UK airport leaders

The key ways they plan to do this are through:

- **Optimising operations to support increased capacity** by improving gate management to create space for new entrants, and by offering airlines access to airport operational data for improved visibility (90% and 91% respectively)
- **Reducing costs for airlines** by lowering both the upfront investment with common-use facilities, such as shared check-in desks, and ongoing costs for airlines with operational management optimizations (88% respectively)
- **Demonstrating passenger demand** by increasing passenger footfall through the airport, as well as improving its CSAT score (89% respectively)

Optimising and increasing capacity for take-off and landing slots was the number 1 commercial priority for US and Italian airport leaders

Boost the overall passenger experience

Nearly all airport leaders recognize the importance of being ranked as a top airport for passenger experience by consumer choice websites – such as Skytraxx and Which? – as being key to increasing passenger footfall (92%).

The key ways they plan to do this are through:

- **Improving the passenger flow through the airport** by offering a seamless experience from curb to the gate (89%), with a particular focus on reducing security wait times, which was perceived to be the top driver for improving the passenger experience at airports (91%)
- **Providing more self-service tools** by introducing and increasing the availability of self-service options for check-in and bag drop (89%). Advances in biometric tools also present options beyond the use of e-gates at border control to offer a more frictionless airport experience, such as British Airway's rollout of biometric boarding at London Heathrow Terminal 5[xiii]
- **Deliver a superior retail experience** by offering more attractive brands and improving choice in concessions, which in turn increases passenger spending (90%)

Airport Snapshot

Norfolk International Airport (ORF) is the major airport serving Coastal Virginia and the Outer Banks of North Carolina, serving over 4 million passengers and over 75,000 flight operations in 2022.

In 2022, it needed to increase throughput after adding 20 new destinations since bringing on Breeze and Allegiant Airlines. But Norfolk International operates in a delicate ecological sanctuary, which limits its ability to physically expand its footprint. It therefore needed to understand how it could optimise its existing resources to increase its capacity.

After investing in AI-powered, cloud-based gate management and flight management Systems, is now able to automate many core airport services, including allocating aircraft parking positions and tracking the aerial and ground locations of arriving and departing aircraft. This is enabling the airport to grow and ultimately better serve its airlines, operators and passengers whilst avoiding the negative impact on the surrounding ecosystem through further development.[xii]

Increase passenger spending

Passenger spending is a key revenue driver for airports. Indeed, airport leaders positioned it as the top revenue driver for U.S. airports.

But 52% of airports report passengers are not spending as much in the airport as before the pandemic. This trend is disproportionately impacting smaller airports, with this figure rising to 80% for those with revenues under £50M. Compounding the issue, 70% of airport leaders fear the cost of living will further reduce consumer spending with concession partners at the airport over the next 12 months.

Leaders are therefore not only focused on driving passenger footfall, but increasing their spending in concessions and in duty free areas (86%).

The key ways they plan to do this are through:

- **Making the airport a more attractive shopping destination** by promoting the airport as a shopping destination for more pre-planned purchases (94%) and providing a good range of retail opportunities (88%)
- **Encouraging passengers to make purchases in the airport** by offering discount vouchers to passengers to spend at the airport (91%)
- **Increase their time in concessions** by improving the speed at which customers pass through check-in and security to concessionary areas (93%)

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Overcoming Disruption With Seamless Operations

Since the pandemic, airports have faced increased disruption to flight schedules from industrial action, technical outages, weather disruption and more. This is only likely to continue.

Further to new revenue drivers from airlines and passengers, a huge focus for nearly all airport leaders (91%) is how they can improve the bottom line by advancing the efficiency of their operations, which in turn will allow them to better manage disruptive events.

We have already shown how continued reliance on legacy technologies and manual processes has contributed to the challenges that airport leaders face in managing their operations. Indeed, the most acute operational challenges that leaders currently face are where they rely on traditional processes, rather than taking advantage of new technology solutions to support their airport management, such as for gate management and RONs (Remain Overnights).

The pandemic accelerated many people's experience of digital services, from their children's remote learning to the monumental growth of e-commerce, and has also contributed to a shift in attitudes towards legacy technology and software in airports. Many airport leaders' expectations for the level of service and experience delivered by their technology and systems have increased monumentally.

> It is, therefore, unsurprising that across all regions, upgrading legacy technologies and systems is a commercial priority for 92% of airport leaders.

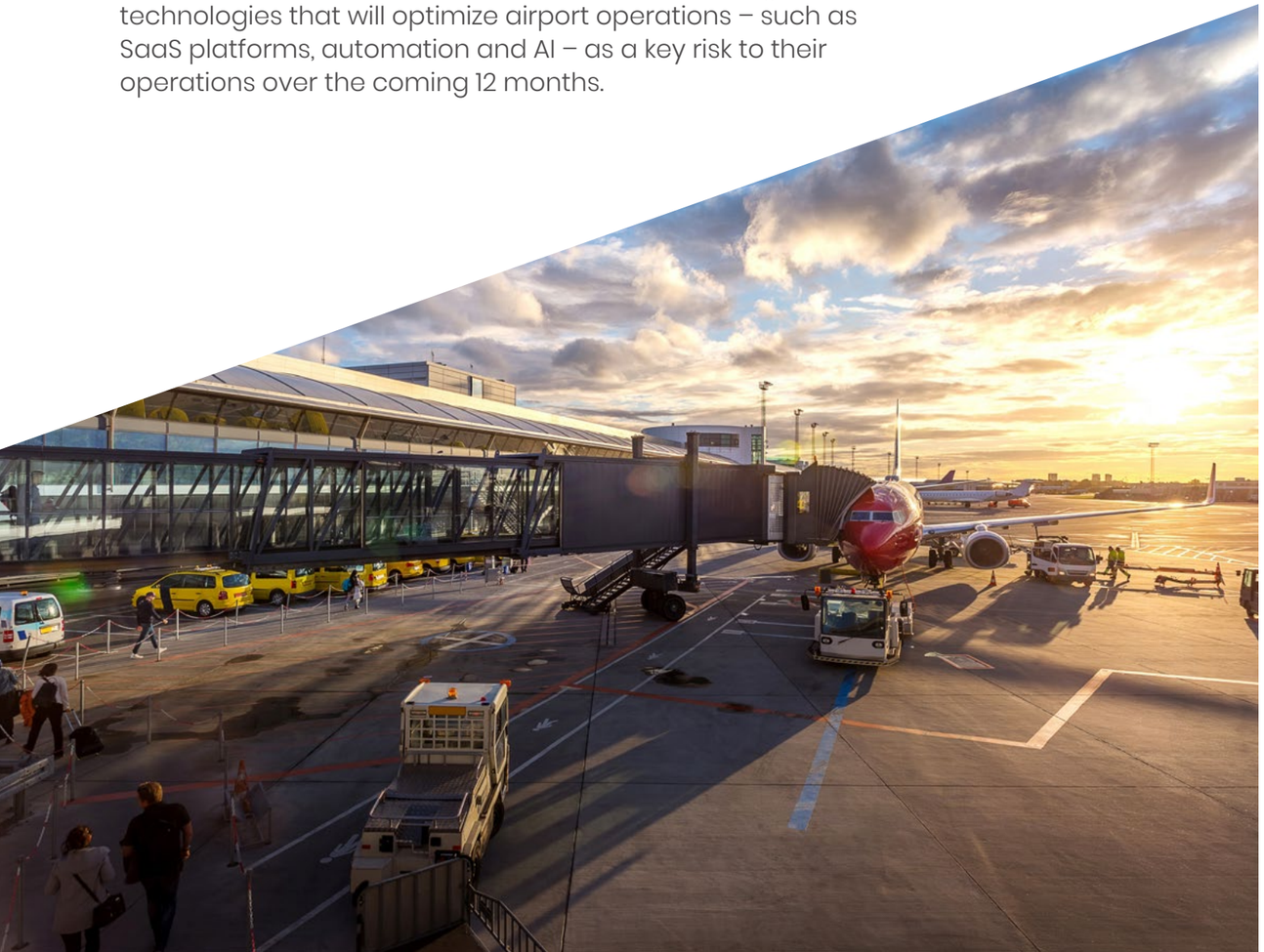
92%

of airport leaders say upgrading legacy technologies and systems is a commercial priority

A lack of real-time understanding of airport operations was also highlighted as presenting an operational challenge. One-third of airport leaders report they do not have real-time analytics insights that would allow them to improve operational responsiveness and the passenger experience, nor do they have the ability to track a passenger's journey from curb to gate to improve the passenger flow (33% and 34% respectively).

> Embracing new technologies is seen as key to overcoming the very present operational challenges and managing the constant threat of disruption.

Indeed, 60% of airport leaders identified not investing in new technologies that will optimize airport operations – such as SaaS platforms, automation and AI – as a key risk to their operations over the coming 12 months.



Airport Snapshot

Lynden Pindling International Airport is the largest airport in the Bahamas.

Managed by Nassau Airport Development Company (NAD), the operations team previously relied heavily on passenger forecasts that were a maximum of three days ahead. Now, they wanted to focus on how they could use technology to automate operation systems at LPIA and improve its overall efficiency.

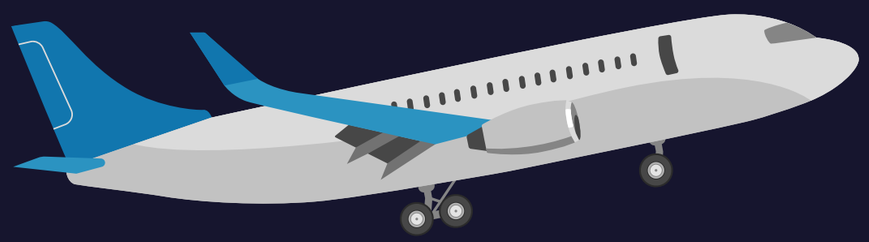
LPIA brought on new flight information display systems (FIDS) and gate management systems (GMS) that utilise AI and Machine Learning to predict and project passenger forecasts. These systems take into account seasonality factors, including peak periods, to enhance operational efficiency.

"What we get, in return, is an improved passenger forecast which provides data as far out as 90 days. This longer lead time allows us to plan more effectively from an operations standpoint," commented NAD's Vice President of Operations Jonathan Hanna.

With the predictive capabilities, the operations team can allocate gates more efficiently and develop contingency plans throughout the year. Early data also allows airport stakeholders - including Bahamas Customs, Bahamas Immigration, United States Customs and Border Protection (USCBP), commercial airlines, retail and food & beverage concessions to plan more effectively.

"With better access to real-time and future information, our airport partners can plan more effectively and can adjust operational hours or staffing levels as information is received," Hanna continued.[xiv]

Fuelling Growth Through Innovation



Airport leaders are acutely aware of the digital transformation deficit in airports worldwide and that by not investing in technology, they are compounding a significant risk to future growth and the efficacy of their operations.

But how should they focus their technology investments to drive the biggest impact on their operations, revenue and growth?

Democratize operational data to airport stakeholders

Excel is no way to manage and track airport operational information, such as inbound flights and gate numbers. Manual processes quickly become out of date and are prone to human error. Furthermore, given the significant risk of disruption that can arise through a lack of communication or miscommunication, airports shouldn't use systems or practices that exclude other airport stakeholders, such as airlines and ground handlers, from accessing that information.

Airports leaders and operations teams need a single, source of truth that is fueled by real-time data, so they are notified of updates to flight operations and can communicate this effectively with colleagues and stakeholders.

"Our tenants and ground operations teams have access to the relevant parts of our cloud-native, operations platform, and we can send them alerts when there are irregular operations and diversions. Previously they had to look at FIDS to know about changes."

Marcus Session

Vice President, Information Technology Services at Hillsborough County Aviation Authority, which runs Tampa International Airport (TPA)[xv]

Resilient cloud-based solutions that enable airport operations management software to be accessed from any device are key to increasing the visibility of operational data across teams to support better decision-making. And was called out by 43% of Directors of Operations at airports as having the potential to substantially improve their operations.

Facilitate a seamless airline onboarding experience

Many airports may fall into the common trap of thinking that they need to build an extra terminal to facilitate adding new airlines. However, the cost is often prohibitive, and the planning and construction period prevents airports from capitalizing on immediate opportunities for growth.

> Many airports aren't maximizing the space they have available to them and new technologies hold the potential for many airports to improve their capacity, allowing them to introduce new airlines or increase the number of departures.

Gate management solutions, which leverage AI and Machine Learning, automatically plan gate usage based on real-time flight data. This enables airports that have traditionally leased gates to a singular airline to optimize their overall gate availability and offer flexible gate ownership. Coupled with on-block and off-block time tracking, airports can not only increase the number of flights and airlines they can accommodate, but they can be confident that they will accurately stay on top of billing based on actual usage.

Airports should also consider optimizing their space within terminals by shifting from airlines using proprietary software and hardware, to common-use facilities. These enable airlines to share resources, allowing them to swap in and out of check-in desks and departure gates as needed. Globally, this was perceived to present the greatest opportunity for improving airport operations.

Power frictionless airport experiences

Passengers expect to have a smooth experience at the airport and leaders can make immediate investments which streamline their operations and, in turn, deliver a superior experience to the customer.

Self-service kiosks that enable passengers to quickly check-in or drop off luggage, for example, enable passengers to swiftly handle these procedures, reducing wait times and congestion at check-in counters.

An increased use of biometric ID verification for passport control and boarding replaces manual checks can also improve the efficiency and speed of processing passengers. This not only facilitates a smoother airport journey, but enhances the accuracy of passenger identity verification compared to manual methods to improve security.

Optimise the passenger flow to increase spending

For passengers to spend with concession partners, they need the time to shop or sit down to eat or drink. When they are stuck waiting in queues due to under-resourced areas of their journey, such as at check-in or security, this directly limits their time in departure halls.

This is where having an accurate, real-time view of passenger journeys from curb to gate is critical. It enables operations leaders to identify bottlenecks as they arise, so that they can be quickly addressed to minimize disruption before the problem mounts, such as opening a new lane at security to process a growing queue of passengers.

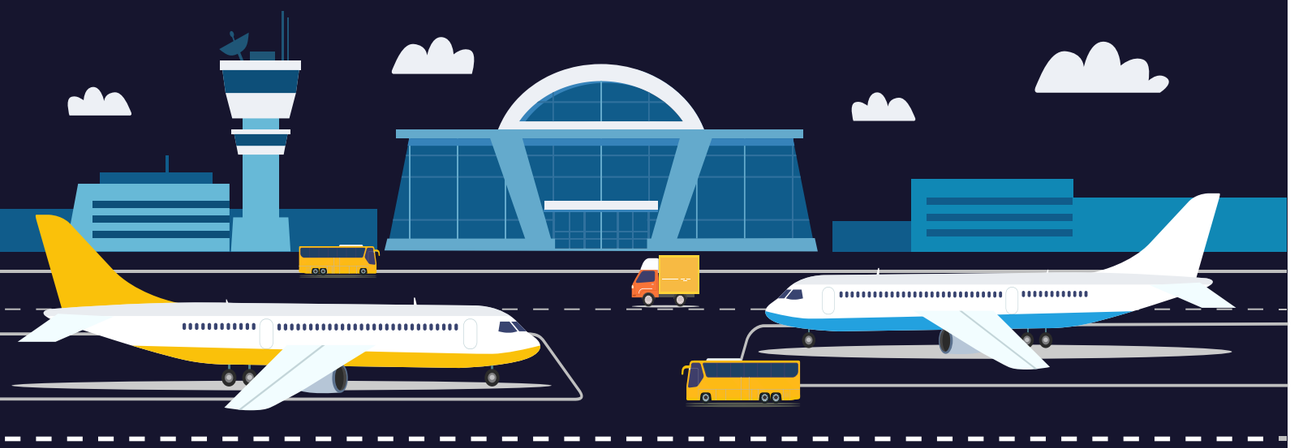
The passenger flow insights can also help airports gain a better overall understanding of movement throughout the building – allowing them to identify peaks and where queues are likely to be – flattening any planning curves and increasing efficiency.

> *"Common-use and biometric technologies support a truly frictionless passenger experience that also rewards airports. Removing unnecessary touchpoints not only reduces the wait times for passengers as they are processed at different stages in their journey, which boosts satisfaction levels, but also enables passengers to spend more time in concessionary areas, which in turn delivers important revenue."*

Paul Secker

Co-Founder & Head of Passenger Processing, AeroCloud

Outlook For The Future



The outlook for the aviation industry is strong after what has been a difficult few years for many. And the boost in air travel presents a significant opportunity for airport leaders as long as they can seize the moment to maximize revenue growth.

It won't be a smooth runway to growth for all. Half of all airports are still yet to reach the passenger numbers or achieve the total revenue from before the pandemic. And all airport leaders predict facing further disruption to operations over the next 12 months. If anything disruption has become the 'new normal'.

But the same innovations that will enable airports to improve operational efficiencies to increase capacity and drive better passenger experiences will support revenue growth, as well as help them improve their agility to better manage moments of disruption and secure a positive reputation that will, in turn, attract airlines and passengers.

The future is bright for airports where there is a commitment to driving innovation forward.

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About the research

AeroCloud commissioned Censuswide to survey 200 senior leaders at airports in the U.S., United Kingdom and Italy between 09.27.23 - 10.02.23. These included COOs, CTOs, CIOs, CDOs, CEOs, Chief Purchasing Officers, Chief Finance Officers, Directors of Operations and Heads of Commercial.

About AeroCloud

AeroCloud creates modular and scalable intelligent airport management software built on leading-edge technology. The cloud-native platform uses predictive artificial intelligence and machine learning to make operations, IT and commercial teams' jobs easier by centralizing airport data, automating tasks, predicting passenger numbers and managing gate usage in real-time, increasing an airport's passenger handling capacity. Together with its common-use passenger processing and self-service solutions, and AeroCloud Optic, industry-first and multi-award-winning passenger count track technology, AeroCloud delivers an innovative answer to the complex operational challenges experienced by airports across the globe, supporting 60 airports across the US and Europe, and processing over 156 million passengers annually. It is focused on expanding its North American, European and UK markets throughout 2023.

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Footnotes

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