ASIA-PACIFIC & MIDDLE EAST AIRPORTS

THE OFFICIAL MAGAZINE OF ACI ASIA-PACIFIC & MIDDLE EAST



SHOW BUSINESS: ANNUAL CONFERENCE REVIEW

Issue 2, 2024

- ••• Special report: Infrastructure development in South East and East Asia
- ••• In the spotlight: Raising the sustainability bar
- ••• Plus: Route development; Upgrading Madinah; and IT investment trends



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CONTENTS

6. VIEW FROM THE TOP

Director general, Stefano Baronci, reflects on a busy and productive few months for ACI Asia-Pacific & Middle East and looks forward to two key events in the second half of the year.

8. REGIONAL UPDATE

ACI Asia-Pacific & Middle East's manager for communications and brand marketing, Yuman Lau, provides a comprehensive round-up of the latest developments and insights from the airport industry.

14. ONE TO REMEMBER!

Editor, Joe Bates, looks back at some of the many highlights of the recent ACI Asia-Pacific & Middle East/ACI World Annual General Assembly, Conference and Exhibition in Riyadh.

28. ASIA'S BIG BUILD

In the second instalment of his two-part article, Marnix (Max) Groot, focuses on ongoing and planned airport development projects in South East and East Asia.

36. TOP TECHNOLOGY PRIORITIES

Rudy Daniello, Amadeus' executive vice president of airport and airline operations, highlights some key technology investment trends.





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40. EXPANDING MADINAH AIRPORT

Massimiliano Martinenghi, project director at Scott Brownrigg, tells us more about the planned expansion of Madinah Airport in Saudi Arabia.

42. GOING GREEN

We take a closer look at a handful of sustainability stories making headlines across the region in the first half of 2024.

44. ROUTES AND DESTINATIONS

We shine the spotlight on Perth Airport's historic commercial agreement with Qantas and the recovery and expansion of its international route network.

46. WBP NEWS

The latest news and views from ACI Asia-Pacific & Middle East's World Business Partners.







ACI Asia-Pacific & Middle East (ACI APAC & MID) serves as the voice of 133 airport members, operating 624 airports across 47 countries/territories in Asia-Pacific and Middle East. ACI Asia-Pacific & Middle East is head-quartered in Hong Kong and has a Middle East office in Riyadh (Kingdom of Saudi Arabia). ACI

Asia-Pacific & Middle East represents the collective interests of airport members to promote professional excellence in airport management and operations. ACI Asia-Pacific & Middle East's mission is to advocate for policies and provide services that strengthen its members' ability to serve their passengers, employees and stakeholders.

In 2023, ACI Asia-Pacific & Middle East airports handled 3.43 billion passengers and 51 million tonnes of cargo.



51 MILLION TONNES OF CARGO



43

PASSENGERS

Airports Innovate 2024



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VIEW FROM THE TOP

Director general, Stefano Baronci, reflects on a busy and productive few months for ACI Asia-Pacific & Middle East and looks forward to two key events in the second half of the year.

s historian and archaeologist, Josephine Quinn, stated in her recent book, "It is connections, not civilisations, that drive historical changes".

This perspective resonates deeply with my belief that migration, mobility, and the blending of cultures are fundamental to the essence of aviation. Air connectivity stands to be a fundamental tool in facilitating these transformations.

The ACI Asia-Pacific & Middle East Air Connectivity Index 2023, developed in collaboration with PWC, goes beyond merely assessing direct and indirect connectivity was released recently. It evaluates the market size, the economic value of these connections, and the quality of the links from a consumer's perspective, emphasising the variety of choices available to passengers traveling from point A to point B.

The 2023 ranking, which analyses a sample of 300 airports across Asia-Pacific and the Middle East – representing approximately 93% of total traffic – reveals promising signs of recovery in the region.

However, it is important to note that most of these airports have yet to regain their pre-pandemic levels of connectivity. Only 28% of the 300 airports have surpassed their 2019 connectivity levels. Nevertheless, projections indicate a positive outlook, with passenger volume in the Asia-Pacific region expected to achieve full recovery by 2024.

This recovery underscores the resilience and critical importance of our sector in connecting people, economies, and cultures, driving forward the process of global transformation and integration.

Overall, International city pairs in the Region decreased in 2023 by -1.9% vs. 2019 on average, in contrary to domestic city pairs which increased by 17%, especially in China and India.

The top 20 airports ranking by airport connectivity in 2023 show that Dubai Airport continues to occupy the top rank followed by Tokyo Haneda Airport. Despite the late reopening of its international borders in early 2023, three Chinese airports, Guangzhou Baiyun (CAN), Beijing Capital (PEK), and Shanghai Pudong (PVG) are among the top 10.

Overall, the Middle East is closing in on pre-pandemic levels with air connectivity just 5% below the 2019 benchmark. Meanwhile, Asia-Pacific is witnessing substantial strides towards recovery, showing a notable improvement from a 36% decline in connectivity in 2022 to just 13% below 2019 levels in 2023.

A FORWARD-LOOKING OUTLOOK FOR 2024

The first quarter of 2024 has shown promising signs, with airports improving their direct connectivity by an average of 59% compared to the same period in 2023. As we move into the third quarter of 2024, airports in Asia-Pacific and the Middle East are expected to increase seat capacity by an average of 10% compared to the first quarter.

Notably, the highest increase in seat capacity will be direct flights to and from China, signalling a gradual improvement in connectivity for key markets dependent on Chinese traffic.

In the Middle East, cities like Riyadh, Abu Dhabi, and Dubai will be in the spotlight, having added significant capacities to a diverse range of destinations.

ENGAGEMENT, EVENT AND ADVOCACY

The ACI Asia-Pacific & Middle East/ACI World Annual General Assembly, Conference & Exhibition, known as WAGA 2024, held in Riyadh, Kingdom of Saudi Arabia last May, was a tremendous success.

Over the course of three days, we welcomed more than 700 airport leaders and executives from over 70 countries, and over 30 companies showcased their innovative products and solutions.

Additionally, we presented over 20 discussion panels and interviews featuring 50+ renowned speakers. Your involvement was crucial in making this event a success.

ADVOCACY AT ICAO DGCA FOR MIDDLE EAST

At the ICAO Conference of Directors General of Civil Aviation (DGCA) for the Middle East region in Riyadh, Kingdom of Saudi Arabia, we emphasised the critical need for enhancing air connectivity and seamlessly integrating Advanced Air Mobility (AAM) into the current air transportation framework.

The most important output of the Conference, however, is the approval of the Middle East Air Transport Strategic Plan 2025-2040 by ICAO MID and its member states. States are encouraged to reference this Strategic Plan when developing their national plans and to implement the recommendations provided.

This achievement is significant for ACI APAC & MID, as we were appointed by ICAO as the co-rapporteur for the working group tasked with drafting the Plan in 2022.

We contributed comprehensive inputs on air connectivity, taxation and charges, security and facilitation, and environmental considerations, alongside submissions from other stakeholders.

ENGAGEMENT WITH MEMBERS AND INDUSTRY STAKEHOLDERS

Our engagement with the Bureau of Civil Aviation Security (BCAS) in India on promoting One Stop Security (OSS) has been very positive. The BCAS has expressed interest in conducting OSS trials for domestic operations before expanding to international flights. Our team is already in dialogue with the authorities to learn and implement best practices from countries that have successfully implemented OSS.

We made a historic visit to Laos and the outcome was very positive as we are in the process of welcoming Airports of Laos into the ACI fold and assist with capacity building across critical domains. We also had a successful dialogue with the Department of Civil Aviation of Laos (DCAL). This visit marks a significant step in ensuring that airports in the region are well-positioned for future growth and development.

We also had a productive meeting with Civil Aviation Authority of Vietnam (CAAV) and the Airports Corporation of Vietnam (ACV) in Hanoi. It provided the groundwork for a robust cooperation between ACI APAC & MID, CAAV, and ACV.

A major focus of our collaboration is to support ACV airports in the Airport Carbon Accreditation programme, and assist in setting net zero roadmaps in the future, marking a significant milestone in our collective efforts to combat climate change.

In Ho Chi Minh City, Vietnam, we officially announced the Trinity Forum 2024, that will be hosted by Airports Corporation of Vietnam (ACV) and Imex Pan Pacific Group (IPPG) in partnership with ACI APAC & MID and ACI World on November 5-6 in Ho Chi Minh City.

The event brings together the world's airports, brands, and concessionaires, alongside their business partners in the travel retail sector for provocative and stimulating conversations. More info can be found <u>here</u>.

Our team visited Japan to explore collaboration opportunities with Japan Airport Terminal Co. Ltd. (Haneda Airport) and JALUX, a subsidiary of Japan Airlines that has aero and non-aero business operations at airports. The visit concluded with hopeful anticipation for closer engagements, paving the way for continued growth and innovation within the airport industry.

In China, our team shared the latest industry development trends at the Guangzhou Aviation Hub High-Quality Development Conference, and promoted that AAM development represents enormous opportunities for airports and accelerates the growth of "low-altitude economy" at the International Smart Airport Development Forum in Shanghai. Our team appreciates the engagements with Chinese aviation leaders.

As we step into the second half of the year, we are now gearing up for various engagements and more importantly our two key events – Airports Innovate (in Rome, Italy, from November 26-28, 2024) and The Trinity Forum 2024 (in Ho Chi Minh City, Vietnam from November 5-6, 2024).

APAS

REGIONAL UPDATE

ACI Asia-Pacific & Middle East's manager for communications and brand marketing, Yuman Lau, provides a comprehensive round-up of the latest developments and insights from the airport industry.



ACI ASIA-PACIFIC & MIDDLE EAST GREEN AIRPORTS RECOGNITION 2024

ACI Asia-Pacific & Middle East took the opportunity to celebrate the winners of its Green Airports Recognition (GAR) 2024 during the recent ACI Asia-Pacific & Middle East/ACI World Annual General Assembly, Conference and Exhibition in Riyadh, Saudi Arabia.

The awards recoignised 12 airports in Asia-Pacific and the Middle East for their outstanding accomplishments in sustainability projects.

Biodiversity and nature-based solutions was the theme for the awards, with airports encouraged to submit their best practices in preserving 'biodiversity' and utilising 'naturebased solutions' on their respective campuses.

As a result, we received submissions on a wide range of topics that included plantation for carbon reduction and social benefits; marine life conservation by airports;

wetland/ecological rejuvenation; in-house airport horticulture and nurseries; and wildlife management for safe operations.

There are three categories of recogntion for the awards ('Platinum', 'Gold', and 'Silver') which are based on four different airport size categories – Over 35mppa, Between 15-35mppa, Between 8-15mppa, and Less than 8mppa.

You can find out more about several of the GAR 2024 projects in a new publication that showcases the award winning work of Hong Kong International Airport, Kansai Airport, Mactan-Cebu International Airport, and Queenstown Airport.

The publication is available for members only. Access full publication <u>www.aci-asiapac.aero/media-</u> <u>centre/library</u>

OVER 35 MILLION PASSENGERS PER ANNUM:		
Category	Airport	Project
Platinum	Hong Kong International Airport	Implementation of Marine Ecology and Fisheries Enhancement Measures at Hong Kong International Airport
Gold	Sydney Airport	Bringing Country back to Wetlands
Silver	Indira Gandhi International Airport	Center of Excellence – Biodiversity Center
BETWEEN 15-35 MILLION PASSENGERS PER ANNUM:		
Category	Airport	Project
Platinum	Kansai Airport	Creating a rich seaweed bed and blue carbon
Gold	King Khalid International Airport	Plantation Project
Silver	Kempegowda International Airport	Nature based holistic approach for Sustainable Future
BETWEEN 8-15 MILLION PASSENGERS PER ANNUM:		
Category	Airport	Project
Platinum	Mactan-Cebu International Airport	Coastal Clean-up
Gold	King Fahd International Airport	"Our Airport is Green"
Silver	Chubu Centrair International Airport	Forests grow marine life
LESS THAN 8 MILLION PASSENGERS PER ANNUM:		
Category	Airport	Project
Platinum	Queenstown Airport	Shotover Wetland restoration
Gold	Darwin International Airport	Gurambai Cultural Trail Upgrades
Silver	Chaudhary Charan Singh International Airport	Moringa Plantation



YOUNG EXECUTIVE AWARD WINNER

Manoj Kumar Ashokkumar of Bangalore International Airport Limited, operator of Bengaluru's Kempegowda International Airport, has been named as ACI Asia-Pacific & Middle East's Young Executive Award winner for 2024.

Kumar, manager of standards and performance at BIAL, received his honour for his exceptional research paper, The Collaboration of Airport Stakeholders on Promoting Cyber-security Culture, at the ACI Asia-Pacific & Middle East/ACI World Annual General Assembly, Conference and Exhibition in Rivadh.

In his award-winning paper, he emphasised the urgent need for airports to invest in strong cyber-defences to protect operational technologies from cyber-attacks. His research also highlighted the importance of implementing advanced cybersecurity measures within the airport community.

The panel of judges also awarded an Honourable Mention to Do-hee Kim, manager at Korea Airports Corporation (Manager).



REGISTRATION IS LIVE FOR AIRPORTS INNOVATE

Airports Council International's global innovation trade show is coming to Rome, Italy.

Packed with business, commercial and strategic leads and intelligence, the reimagined event is the premier global aviation conference where innovation takes off. This is a must-attend event for anyone looking to stay at the forefront of innovation, and be part of shaping the aviation ecosystem.

ACI EUROPE, ACI Asia-Pacific & Middle East, and ACI World, together with our host, Aeroporti di Roma, are thrilled to invite you to our global innovation trade show.

Book your place for the event via the this link <u>Registration</u> (miceconciergeme.com)

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* WGB member **Regional Advisor on WGB

ACI APAC & MID ADVOCATES FOR IMPROVED AIR CONNECTIVITY AND INTEGRATION OF AAM INTO THE AIR TRANSPORT SYSTEM



The fourth week of May saw a high infusion of top aviation events in the Middle East, the week commencing with the all-important ICAO DGCA for Middle East with the conference making several key decisions.

The ACI APAC & MID team had the opportunity to present two discussion papers, emphasising the importance of 'Air Connectivity' and the integration of Advanced Air Mobility (AAM) into the air transportation framework. We achieved our objectives as the conference acknowledged the need for greater connectivity, and urged member states to consider further liberalisation of market access policies, and to simplify visa processes.

States were also encouraged to consider AAM in airport master planning and engage in continuous and inclusive dialogue with stakeholders.

In addition, we submitted three information papers on 'One Stop Security', the adoption of technology in airport security operations, and a paper urging the conference to take advantage of our guidance documents to help airports mitigate climate change.

ACI Asia-Pacific & Middle East director general, Stefano Baronci, said: "Recognising the key role of air transport in driving economic growth and facilitating global trade, ACI APAC & MID underscored the need for cohesive strategies that bridge geographical divides and promote accessibility.

"We urge governments to put in place regulations that are tailored to the needs of the aviation industry and passengers, as well as ensuring that aviation stakeholders are provided with the necessary resources and support.

"We are confident that these initiatives will help to ensure that the aviation industry is well-positioned for the challenges of the future."



MAKING HISTORY: AIRPORTS CORPORATION OF VIETNAM (ACV) AND IPP GROUP TO CO-HOST TRINITY FORUM 2024

ACI APAC & MID has signed a groundbreaking Memordanum of Understanding (MoU) with organiser, The Moodie Davitt Report (TMDR), Airports Corporation of Vietnam (ACV), and IPP Travel Retail to host the Trinity Forum 2024 in Ho Chi Minh City, Vietnam, on November 5-6, 2024. The event further solidifies the relationship between ACI and TMDR and brings airport members, concessionaires and brands together to exchange ideas and knowledge on how airports can boost their non-commercial revenue at the same time as enhancing the passenger experience and customer satisfaction levels.



TRINITY FORUM

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AIRPORT TRAFFIC THINK TANK MEETS IN VIENNA TO DISCUSS FORECAST TRENDS

The ACI Airport Traffic Think Tank (AT3) convened in Vienna in June 2024 to discuss the future of air traffic forecasting with artificial intelligence, new entrants of aircraft and manufacturers, sustainability and cargo development. The AT3 is a sub-committee of the ACI World Economics Committee dedicated to air traffic forecasting.



ACI APAC & MID JOINS FORCES WITH ICAO TO ENHANCE AVIATION SECURITY IN BHUTAN

At ICAO's invitation, ACI Asia-Pacific & Middle East (ACI APAC & MID) participated in an ICAO security assistance mission in Bhutan in late June 2024.

Hosted by the Bhutan Civil Aviation Authority (BCAA), the assistance mission was part of a broader capacity-building initiative led by ICAO Asia & Pacific Regional Office to help States in Asia-Pacific improve security standards from national perspectives.

The mission team in Bhutan were comprised of two team members – Remington Low from ICAO APAC and Gary Leung from ACI APAC & MID. Various recommendations for improvement were offered by the mission team, and a number of ACI's tools and materials on security were shared and discussed during the onsite engagement.

A detailed written report of the recommendations and follow-up actions that came out from this mission will be provided to BCAA at a later stage.



NEW SAFETY RECOGNITION AWARD 2025

In an effort to recognise airport operators' efforts in promoting an effective safety culture and safety management through innovative, cost-effective solutions, ACI Asia-Pacific & Middle East has launched Safety Recognition Award 2025.

Regular Members (airports) of ACI Asia-Pacific & Middle East are now invited to submit a paper on a successful case in the promotion of aerodrome safety by November 30, 2024.

MID-AIR TRANSPORT STRATEGIC PLAN 2025-2040

The most important output of the ICAO DGCA for Middle East was the approval of the MID-Air Transport Strategic Plan 2025-2040.

States are encouraged to reference this Strategic Plan when developing their national plans and to implement the recommendations provided. This achievement is significant for ACI APAC & MID as we were appointed by ICAO as the co-rapporteur for the working group tasked with drafting the Plan in 2022. We contributed comprehensive input on air connectivity, taxation and charges, security and facilitation, and environmental considerations, alongside submissions from other stakeholders.



AIR CONNECTIVITY RANKING

ACI Asia-Pacific & Middle East's newly released 'Air Connectivity Ranking 2023' presents a diverse recovery pattern, with notable improvements amidst geopolitical challenges.

Developed in partnership with PwC, the ACI Asia-Pacific & Middle East connectivity index offers a consumer centric approach that considers consumer choices and quality of connections, in addition to frequency of flights, seat capacity and the number of destinations.

This index has been endorsed by the ICAO DGCA Conferences of the Asia-Pacific and Middle East regions in October 2023 and May 2024 respectively. The second edition of the Report is built on standards that are globally acclaimed, measuring direct and indirect connections as well as connecting experience and quality. The ranking covers a sample of 300 airports, accounting for almost 93% of the combined passenger traffic in Asia-Pacific and the Middle East.

The Middle East, which reported near 4% growth in passenger traffic in 2023 vs 2019, is on its way to recover with the region lagging just 5% below 2019 level in air connectivity.

In the Asia-Pacific region, the latest figures from the 2023 Ranking indicate significant strides towards recovery connectivity, despite remaining 13% below 2019 levels. This represents a substantial improvement from the 36% decline observed in 2022 compared to pre-pandemic levels, highlighting gradual but steady progress towards recovery.

Top 10 Airports in Asia-Pacific & Middle East-2023

- 1. Dubai international Airport (DXB)
- 2. Tokyo Haneda Airport (HND)
- 3. Guangzhou Baiyun International Airport (CAN)
- 4. Changi Singapore (SIN)
- 5. Beijing Capital International Airport (PEK)
- 6. Incheon International Airport (ICN)
- 7. Hamad International Airport (DOH)
- 8. Shanghai Pudong International Airport (PVG)
- 9. Delhi International Airport (DEL)
- 10. Bangkok International Airport (BKK)



MUSCAT HOSTS SIXTH MEETING OF ICAO AERODROME SAFETY & PLANNING IMPLEMENTATION GROUP

The sixth Aerodrome Safety & Planning Implementation Group (ASPIG/6) in Muscat, Oman, addressed various agenda items focused on enhancing aerodrome safety and efficiency in the Middle East region.

Key discussions included the implementation of aerodrome certification, runway safety teams, GRF methodology, and ACR-PCR deployment. Draft conclusions were adopted, urging states to provide progress updates to the ICAO MID Office using newly developed templates.

The meeting also emphasised the importance of wildlife strike reporting and ground operations safety, encouraging collaboration among stakeholders to

foster a positive safety culture and improve operational standards.

Adeeb Mobaraki, manager-environment, represented ACI Asia-Pacific & Middle East. The meeting noted with appreciation the best practices and indicators of a positive safety culture at the aviation workplace presented by ACI Asia-Pacific & Middle East.

These examples aim to ensure a common understanding of safety culture across industry sectors and states, encourage discussions and facilitate learning between industry and states, help understand the broader context of safety culture, and encourage senior leadership of aviation stakeholders to demonstrate commitment toward an evolving safety culture.



ONE TO REMEMBER!

Editor, Joe Bates, looks back at some of the many highlights of the recent ACI Asia-Pacific & Middle East/ACI World Annual General Assembly, Conference and Exhibition in Riyadh.

ith the worst days of the global pandemic fast becoming a distant memory for airports, and global passenger numbers either already above or set to exceed 2019 levels this year, there was a renewed sense of optimism about the future at May's ACI Asia-Pacific & Middle East/ACI World Annual General Assembly, Conference and Exhibition (WAGA24) in Riyadh, Saudi Arabia.

Indeed, the feeling that better days lay ahead, despite the ongoing geopolitical challenges facing the world, was evident from listening to more than 50 speakers and exchanging views with many of the 500 delegates and 30 exhibitors from over 70 countries in attendance at the first ever WAGA held in the Kingdom.

Arguably, our hosts, Riyadh Airports Company – which has ambitious plans for the future development of King Khalid International Airport – and fellow Saudi Arabian companies MATARAT Holding and the newly founded Riyadh Air were among the most enthusiastic about what the future might hold. Emmanuel Menanteau, president of ACI Asia-Pacific & Middle East, regional director of VINCI Airports covering the USA, Europe and South East Asia, and board member of Cambodia Airports, certainly felt that in being in Riyadh, we were in "the right place, at the right time".

The theme of the event was 'The Global Race: How to Stand Out in a Competitive Airport Ecosystem' and addressed a number of key issues facing the industry today, ranging from the global need for new airport infrastructure; the sustainability and decarbonisation challenge; embracing diversity and social inclusion; investing in future technologies; and staff recruitment.

DAY 1

The conference began with opening remarks from His Excellency Abdulaziz Al-Duailej, president of Saudi Arabia's General Authority of Civil Aviation (GACA); Salvatore Sciacchitano, president of ICAO Council; and Ayman Aboabah, CEO of Riyadh Airports Company (RAC).



Al-Duailej called the event "a momentous occasion" for Saudi Arabia, revealing that GACA was committed to excellence, and in line with the country's Vision 2030, the plan is for the Kingdom's airports to serve more than 250 global destinations and be capable of handling in excess of 350 million passengers and 4.5 million tonnes of cargo per annum by 2030.

"In the field of civil aviation, the modernisation of our airports isn't a secondary aspiration, it is a fundamental pillar to success," said Al-Duailej.

"By treating the airport sector as a thriving business entity in its own right, we are unlocking the potential to revolutionise operational efficiency, elevate the passenger experience, and fuel economic growth."

RAC's AboAbah welcomed the international attendees, and commend his company's efforts in advancing Saudi Arabia's airport management system, which he noted positively impacts the global aviation sector.

He also announced that his company is working with different authorities to promote the reliance on clean energy sources, pointing out the progress currently being made at King Khalid International Airport.

ICAO's Sciacchitano praised ICAO's close relationship with ACI, its efforts to help aviation achieve its goal of net zero

emissions by 2050, and their shared common goals on safety and security.

Sciacchitano revealed that ICAO had designated 2024 the 'Year of Facilitation', an initiative geared towards highlighting the significance of air transport facilitation and its transformative potential.

Candace McGraw, chair of the ACI World Governing Board and CEO of Cincinnati/Northern Kentucky International Airport (CVG), and ACI APAC & MID's Menanteau then took centre stage in a session called the Presidents' Playbook.

Talking about the progress of the ACI Asia-Pacific & Middle East region since last year's WAGA in Barcelona in June 2023, Menanteau told delegates that it had been a big year for the region following the opening of APAC & MID's new Middle East office in Riyadh.

He felt that both ACI and its member airports had to continue to adapt to a transforming industry, noting that ACI Asia-Pacific & Middle East was the first region to be hit by the COVID pandemic, and the last to fully recover from it, with some airports still some way off 2019 traffic levels.

Between them it was suggested that enhancing the airport experience, taking customer engagement and understanding of passengers to the next level, easier surface access to airports, faster and more efficient



journeys through terminals for all passengers, operational excellence and building smart infrastructure, were just some of the ways airports could stand out in today's highly competitive ecosystem.

McGraw mentioned ACI World's planned new Diversity & Social Inclusion at Airports study, noting that it is important to bring more people from all sections of the community into the workforce, while Menanteau admitted that before COVID, airports had never really factored in 'health' issues as a priority, and called plans to decarbonise aviation "the challenge of all time for the industry".

In answer to what each would like to see happen between now and the next WAGA, McGraw said: "I am going to say [continue to innovate and] don't be afraid of failure.

"We are the most innovative industry that I can think of when you remind yourself that it was just over 100 years ago that two brothers in Dayton, Ohio, were figuring out how to fly. Aviation is an incredible industry and we need to keep that sense of innovation and wonder."

While Menanteau noted: "You hear a lot from us about the transition [to net zero emissions by 2050], so the important thing to say to our members is don't give up, whether you are part of a large airport group or an individual airport, big or small, we have to transition together to meet the decarbonisation challenge."

State of the Industry addresses followed from Stefano Baronci, director general of ACI Asia-Pacific and Middle East, and Luis Felipe de Oliveira, director general of ACI World.

Never one to play things down, Baronci opened by echoing the words of 19th Century French diplomat,

Alex de Tocqueville, and claiming that current critical issues like climate change, geopolitical tensions, technological evolution and the huge growth potential of Asia meant that "we are sleeping on a volcano".

"It is a time of sweeping changes and transformation globally, regionally and nationally," he stated, noting how flooding recently witnessed in Dubai and Porto Alegre in Brazil showed just how vulnerable the world's airports are to extreme weather events and why decarbonising the planet had to be a top priority going forward.

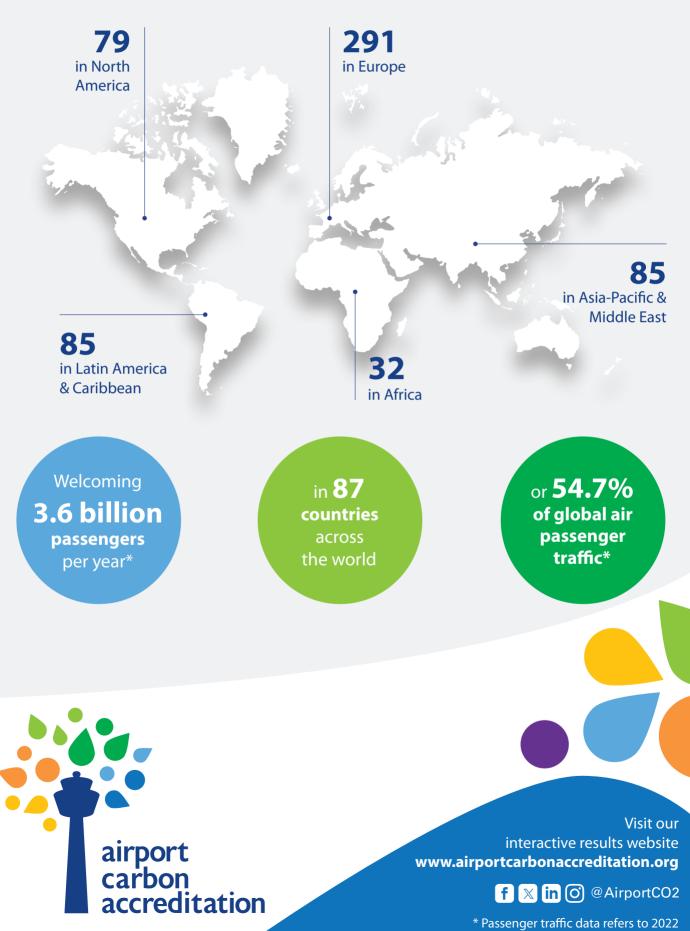
Airports, he reminded delegates, were playing their part in the seismic shift to decarbonisation with a total of 562 airports from 86 countries across the globe actively working to reduce their CO2 footprint through ACI's Airport Carbon Accreditation programme.

In terms of technology, he said "the artificial intelligence volcano erupted" in November 2022 with the launch of ChatGPT, and believes that Al will play a key role in the future by streamlining journeys and "saving time through the optimisation of processes and personalisation".

With regards to the growth potential of Asia-Pacific, Baronci noted that despite Asian cities making up seven of the world's top 10 mega cities by population (in excess of 225 million people), only Tokyo handled more than 100 million passengers per annum.

Indeed, ACI forecasts that traffic across the region will grow from three billion per annum today to eight billion by 2041, which Baronci admitted would prove a huge challenge for the industry.

572 accredited airports





The ability of airports to "connect the dots" when it comes to "optimising operations, providing the infrastructure, building the right conditions for stakeholders and setting new service levels for space and place" would prove key to their success, he suggested.

He ended by noting that ACI Asia-Pacific & Middle East's newly released Air Connectivity Ranking 2023 report (See page 13 in ACI news for more details) painted a positive picture of the gradual recovery of air connectivity in Asia-Pacific and steady growth in the Middle East.

ACI World director general, Luis Felipe de Oliveira, used his time on the podium to talk about global traffic trends, the net zero challenge, IT investment and his love for the industry, which he labelled "dynamic, "volatile and brought new challenges and opportunities every day".

Reflecting on where the industry is today, de Oliveira, enthused: "Our airports always come through, and look where we are now. We are growing once again, and growing quickly, making a positive contribution to the social and economic progress of the world."

He noted that the world's airports handled 8.5 billion passengers in 2023, just 6% down on pre-COVID levels, and that 2019's record levels would be equalled or bettered this year as the latest ACI data showed that global traffic had 100% recovered in May.

Going into more detail about 2023, de Oliveira stated that domestic traffic increased by 20% and international passenger numbers by 36.5% on 2022. Dubai International Airport (DXB) maintained its status as the world's busiest airport, handling 87 million passengers, while HartsfieldJackson Atlanta (ATL) retained its title as the world's busiest gateway, handling 104.6 million passengers in 2023.

"We are seeing a shift in international travel," he told the audience. "Changing demographics and income levels means that aviation markets are flying away from traditional paradigms to established markets.

"Long-term, advanced economies are giving way to emerging and developing economies. These countries are urbanising, their populations are increasing and they are showing a willingness to use a more efficient way of travel – aviation. This will make our industry more robust and going forward we see positive trends for the foreseeable future."

As a result of the upturn in traffic, ACI World expects almost 10 billion passengers to pass through the world's airports this year, 20 billion by 2044, and 25 billion by 2052 – two and a half times the current numbers.

Like Baronci before him, de Oliveira admitted that being able to accommodate such growth won't be easy, especially as it is estimated that around \$2.4 trillion will have to be spent on airport capital improvement programmes by 2040.

However, he believed that the industry's commitment to robust ESG practices, sustainable growth, decarbonisation, intermodality and continued investment in transformative new technology – airports will invest \$6.8 billion on IT this year – were the key building blocks that would ultimately see it rise to the challenge.

Concluding, de Oliveira said: "The future will be different, but we believe it will be positive for us. Growth and



new business models alone are not enough. Sustainability, both environmentally and financially is a must.

"The industry's commitment to net zero emissions by 2050 will be our driving force and guiding light for all future behaviours."

The conference spotlight then shone firmly on the Middle East region with moderator, Armandeep Bhangu, conducting on-stage interviews with Riyadh Air CEO, Tony Douglas, and Dubai Airports' CEO, Paul Griffiths.

In the first session called 'The next Saudi Superstar: Riyadh Air', the airline's charismatic CEO and former Etihad, Heathrow, and Abu Dhabi Airports boss Douglas essentially outlined the ambitious development plans for Saudi Arabia's second national flag carrier.

"The brand of the new airline will be Riyadh, supported by three key pillars," said Douglas. "We will be a digital native, have an absolutely obsessional attention to detail on the guest experience, and we want to be acknowledged as an environmental sustainability thought leader."

Based in Riyadh, the airline has so far ordered a fleet of 121 Boeing 787-9 Dreamliners and says it will focus on quality, value, digital and glamour. Douglas believes that the airline is needed as despite Saudia's success, he claimed Riyadh is underserved today as 93% of its traffic is point to point with very little transfer traffic.

By comparison, he revealed that transfer traffic accounts for 80% of all passengers at neighbouring Hamad International Airport in Qatar.

The ultimate goal for the airline, revealed Douglas, is for Saudia to concentrate on its base in Jeddah and for Riyadh Air to become the global airline for Riyadh, serving 100 destinations by 2030.

If all goes to plan it will start certification flying in September and launch operations in the summer of 2025. Over 1.1 million people have applied for jobs at the airline has already recruited its first wave of pilots and cabin crew, and is currently building accommodation for staff and its new headquarters.

Ever upbeat and engaging Dubai Airports CEO, Paul Griffiths, continued the focus on the Middle East when he told delegates more about the success of Dubai International Airport (DXB), plans to bring forward the development of Al Maktoum International Airport, also known as Dubai World Central (DWC), and the recent flash floods in Dubai that halted operations at the world's busiest airport.

Talking about rising demand, Griffiths said that soaring traffic had forced Dubai Airports to update its 2024 traffic projections for DXB four times already this year, and it now expects around 91 million passengers to pass through the UAE hub by the end of the year.

"If we continue to grow at this rate, we will hit the magic 100 million [per annum] passenger mark by 2027, so these are exciting times," enthused Griffiths.

In fact, such is the upward trajectory in traffic that he revealed that in line with the one objective given to him to never constrain Dubai's aviation growth when he first joined Dubai Airports back in 2007, the company has decided to bring forward the next phase of the development of DWC by nearly a decade.



"The way of not constraining growth is to continually innovate and find new ways of increasing not just the capacity of the airport, but the quality of the customer service, because delighting the customer is absolutely at the forefront of what we do," he commented.

"This is a once in a lifetime opportunity to create not just a new airport, but a totally new way of thinking about airport design."

As a result, instead of following today's typical design pattern for an airport, DWC will boast a number of different terminals designed to recall the traditional Bedouin tents of the Arabian Peninsula.

Griffiths believes that each should be viewed "as a number of small, intimate airports joined together for the scale we need, but retaining the intimacy that customers want".

He said that the traditional way of expanding airports by increasing them in size and scale invariably leads to longer walks for passengers and sometimes increased anxiety, which he remarked was not great for the customer experience.

At full build out, DWC will be seven or eight times bigger than DXB and be capable of handling 260 million passengers annually.

Next up during a busy morning was a presentation from Airport Authority Hong Kong's deputy director for airport operations, Chapman Fong, about the next phase of Hong Kong International Airport's transition from "a city airport to an airport city"

The much anticipated airport leaders panel followed, the bosses in the hot-seat this year being Greater Toronto

Airports Authority's CEO, Deborah Flint; iGA Istanbul Airport's CEO, Selahattin Bilgen; Oman Airports' CEO, Sheikh Aimen Al Hosni; and Lima Airport Partners CEO, Juan Jose Salmon Balestra.

Between them they explored critical topics such as the state and future of airport infrastructure, slot allocation, seamless travel, customer service, and the role of technology and innovation in enhancing passenger experiences.

Balestra stated that there was great growth potential at Lima's Jorge Chávez International Airport (LIM), particularly as so few South Americans fly today compared to the US and Europe. He noted that the airport worked closely with the government and other agencies to promote tourism to Peru.

In terms of new infrastructure, he revealed that the airport will become more competitive when it opens a new 230,000 square metre terminal later this year that will raise the airport's capacity to 40mppa. It is currently handling around 23 million.

In addition an airport city with its own Free Trade Zone was being created around the airport which was expected to become a destination in its own right that boosts traffic and the airport's economic impact.

Al Hosni believed that concentrating on what customers want was the key to being a better airport, citing the work done to turnaround Muscat International Airport ASQ ratings and the introduction of a second ground handler as examples of listening to its passengers and airline customers and increasing its competitiveness.

He said that Oman Airports spends between \$20 million and \$30 million a year on OPEX/CAPEX projects, which





includes investment in new technology to boost operational efficiency and passenger satisfaction levels.

Bilgen acknowledged that Turkish Airlines and its vast network is driving growth in Istanbul, but was quick to point out that another 105 airlines currently serve IST – a sizeable increase on the 61 that flew to the hub when it opened in April 2019.

He attributed the almost doubling of its airline customers to its efforts to make the airport more attractive, operationally efficient – especially through the use of new technology – and easy to use for other airlines as well as Turkey's national flag carrier.

Ending on regulation, and what they'd like to see change, Lima's Balestra said he would like to see airports have a greater say in how slots are allocated to make it easier to attract new airlines to compete against dominant carrier, LATAM, and make better use of the airfield.

While GTAA's Flint said: "I am very positive about the Canadian aviation model and the regulatory construct as it is today. I certainly support further liberalisation as well as what some of the work ACI is doing to make the slot regime more efficient and give airports more of a participatory role in how they are allocated.

"That said, if there was one area where I think that they could be a change to the regulatory regime, it would be about ensuring that we can be unhindered in adapting to today and tomorrow's environment.

"The lack of harmonisation across airports in the system I find particularly acute in Canada, where our screening methodologies lag behind some of the G7 countries. More importantly, as we propose to make multi-billion investments in creating the terminals and airports of the future, there is significantly more cost and risk involved.

Rivadh - Saudi Arabia

"So, I encourage our governments to work closely with the air transport industry on the transitions that we need to make today, getting the right level of risk and harmonising more fulsomely across the sector to enable an amazing digital and wholly-connected transformation of the industry."

It was then time to briefly turn the spotlight onto retail and F&B activities when The Moodie-Davitt Report's founder and chairman, Martin Moodie, interviewed Xavier Rossinyol, the CEO of Avolta, formed by the merger of Dufry with Autogrill.

A hectic first half day closed with a debate entitled, 'Economic Impacts of Air Transport Liberalisation: Reform and Policy' involving Serkan Kaptan, CEO of TAV Airports; Lorie Argus, CEO of Australia Pacific Airports Corporation; Kashif Khalid, IATA's regional director for the Middle East and Africa; and Majid Khan, CEO of the Saudi Airport Connectivity Program, formed to boost air connectivity and tourism across the Kingdom.

Introducing the topic, the Pricewaterhouse Coopers moderators Simon Booker and Edward Clayton suggested that in the Asia-Pacific and Middle East region, the UAE and Singapore had the most liberal air transport regimes.

With the exception of some Think Tank Stage presentations by companies that included Avolta, Idemia, Plaza Premium Group and SITA, the main conference sessions of the day were over, leaving the afternoon free for ACI Asia-Pacific & Middle East's Regional Assembly and the ACI World Annual General Assembly.



Both were followed by awards ceremonies for ACI's Airport Carbon Accreditation programme and ACI APAC & MID's Green Airports Recognition programme.

A highly eventful first day ended with a Gala Dinner at the KAFD Conference Centre in downtown Riyadh's King Abdullah Financial District where the venue, entertainment and food made a huge impression on all those lucky enough to attend.

Day two of the conference sessions opened with a tourism and aviation driven debate, appropriately entitled 'Tourism and Aviation – A Symbiotic Relationship' moderated by PA Consulting's global aviation lead, Kata Cserep.

Arguably, the key take aways from this one were that airports should prioritise destination marketing; collaboration between airports and the tourism sector is essential: and simplifying the visa process is crucial for aviation and tourism.

Indeed, Saudi Arabia is almost the perfect example of what can happen when a country makes getting a visa easier as over 100 million tourists visited the Kingdom Saudi Arabia last year. The country's new found focus on tourism has also proved the catalyst for new developments like the recently opened Red Sea International Airport.

Speaking about what visitors can expect from Red Sea International Airport, its chief commercial officer, Michael White, enthused: "The general strategy behind the airport is the development of an eco-conscious luxury tourist destination that will offer and complement the already impressive portfolio of attractions in Saudi Arabia."

Powered solely by sunlight courtesy of more than 760,000 solar panels, the airport, which handled its first flight in



September last year, is equipped with a single terminal, runway and two hotels.

Mass tourism, however, is not on the agenda as White repeated that it will handle a maximum of one million passengers per annum due to environmental commitments.

Equally as buoyant about the future success of his gateway was Athanasios Titonis, CEO of Mactan Cebu International Airport in the Philippines, especially as home-carrier Cebu Pacific is set to develop the airport as a transfer hub.

Ioanna Papadopoulou, director of communications and marketing at Athens International Airport, explained a little about how the airport changed its strategy and became part of a larger destination marketing and management organisation that included the city of Athens, the Attica region where the city is located, the Greek National Tourism Organization, Greek government and other aviation and tourism stakeholders to win back tourists after the Greek economic crisis of 2010-2013.

And the strategy ensured that it was well positioned to win back tourists again after the COVID pandemic, with Athens International Airport handling 10% more passengers last year than its previous record set in 2019.

"The goal was to promote Athens by restoring its profile and marketing it as a city break, and this is exactly what we did as between 2014 and 2019 there was a 104% increase in traffic and a 140% rise in foreign national arrivals," enthused Papadopoulou.

Also in the hotseat for this one were Ibrahim Shareef Mohamed, CEO and managing director of Maldives Airports Company, who talked about the efforts to make



Velana International Airport less susceptible to rising sea levels since the devastating Tsunami of 2004 and the post-COVID recovery of tourism to the island nation.

Delegates then had chance to learn a little more about MATARAT Holding and the Kingdom of Saudi Arabia's plans to transform its airport system courtesy of presentations by Moulham Zahabi, the company's director of airport master planning, and IATA principal, Jurgen Renner.

Strategic holding company MATARAT owns and operates 27 airports spread across 2.2 million square kilometres in Kingdom of Saudi Arabia, including Riyadh, Jeddah and Dammam. Its goal is to ensure that they have enough capacity to handle the expected surge and growth in air travel over the next 25 to 30 years. This huge task is likely to lead to the country's airport infrastructure tripling in size and capacity over this period.

Sacha Zackariya, the CEO and founder of Prosegur ChangeGroup then gave a presentation about 'Growing Airport Revenues with Bureau de Change, Tax Refund & ATMs'.

Next up was a panel discussion about mitigation and resilience to climate change followed by a SAF update from Boeing as the focus switched to the sustainable development of the world's airports/aviation industry.

On the panel in the session entitled 'Sustainability as a Game Changer: How Climate Action Drives Business Competitiveness' was Airports Company South Africa's CEO, Mpumi Mpofu; Airport Authority Hong Kong's general manager for sustainability, Peter Lee; and Queenstown Airport Corporation's general manager for sustainability and corporate affairs, Sara Irvine.



ACSA's Mpofu spoke about the company's pioneering Airport Carbon Accreditation efforts in Africa, with four airports achieving Level 2 status and advancing to Level 3, as well as the bold ambition for all of its airports to be 100% energy efficient by 2040 so that they no longer require electricity from the national grid.

She also revealed that ACSA is hoping that its airports can become self-sufficient for water, and stated that one of the ways it was looking at doing this was by a new process that involved producing water from moisture in the air!

Irvine, who earlier in the conference collected a Green Airports Recognition Award from ACI Asia-Pacific for Queenstown's biodiversity project to restore wetlands underneath the gateway's flightpath, said that the airport's sustainability efforts were effectively being driven internally by staff at the community owned airport as they had a vested interest in protecting the spectacular setting they all lived in.

While Lee, who also picked up a similar award at the event for HKIA's marine ecology and fisheries enhancement measures, told delegates that the airport had invested HK\$400 million in funding on third party sustainability projects in addition to its own efforts to protect the ecosystem and operate the world's greenest airport.

He noted that demonstrating the airport's green credentials and publishing an annual Sustainability Report also had a financial benefit for Hong Kong International Airport through its access to more favourable 'green financing' and reduced energy costs.

The debate was followed by a presentation from Boeing's regional director for the Middle East and Europe, Steven



Gillard, about the development of SAF and other renewable fuels necessary to allow the industry to meet its net zero goals.

The emotive topic of climate change was followed by debate on cargo, which is often vital to the bottom line for airports, but an issue that seldom musters much enthusiasm among airport executives.

Luckily this apathy for cargo wasn't shared by the panel, and particularly Glyn Hughes, the director general of the International Air Cargo Association (TIACA), who came out with a number of almost mind boggling figures about the economic and social importance of air cargo to airports and the world's population during the debate entitled 'Unleashing the Potential of Air Cargo'.

"The commercial air cargo industry has actually been around longer than the commercial passenger industry," Hughes reminded delegates.

"The UN World Tourism Organisation recently released its 2023 report which showed that the total value for tourism last year was \$1.4 trillion, which is a phenomenal number. If we consider that air accounts for around two-thirds of that, that is a \$1 trillion contribution to the global economy. Air cargo's value to the global economy is \$8 trillion.

"Air cargo is not just there for humanitarian aid like during the pandemic, it is about economic prosperity, supporting the growth and prosperity of developing nations, and supporting our way of life as we move towards a more consumer and homebased society."

He used the recent celebration of Mother's Day in 90 countries across the world as another example of the

impact of air cargo on the world, revealing that on that one day 400 million homes around the world received flowers flown by air from four countries – Colombia, Ecuador, Ethiopia and Kenya.

Agreeing with Hughes about the importance of cargo, Changi Airport Group's executive vice president for air hub and cargo development, Ching Kiat Lim, noted that globally, air cargo transports approximately 1% of trade volume, which accounts for 35% when measured in value.

With regards to Singapore Changi, Lim said that going forward the airport would be focusing its efforts on developing "key new freighter links" to destinations such as India and Saudi Arabia.

In Singapore, air cargo constitutes 40% of Singapore's non-oil trades by value, and up to 70%-80% when it comes to high-value verticals such as biomedical and semiconductors.

Groupe ADP's director of air cargo and asset management for global airport operator, Youri Busaan, added that airports are the gateway to trade as well as passengers and tourism with cargo operators using increasingly specialised facilities and equipment.

Kansai Airports' chief commercial officer for aero, Francois Southarewesky, said that he expected Osaka's Kansai and Itami airports to handle some 850,000 tonnes of cargo this year, and that digitalisation was "clearly the next big step for the cargo industry", particularly in Japan where truck drivers still need to get documents physically stamped.

Afnan Al-Haboudal, general manager of Special Economic Zones for GACA, told delegates that there is a very clear

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roadmap in place to ensure that the Kingdom is equipped to handling up to 4.5 million tonnes of air cargo by 2030.

The plan includes increasing the Kingdom's overall cargo capacity through enhancing existing facilities, building new state-of-the-art infrastructure and the creation of Special Economic Zones.

The morning ended with a lively discussion about 'Innovation in Passenger Processes: What Will Change in The Future' involving Aeroporti de Roma's CEO, Marco Troncone; PortsToronto CEO, Roelof-Jan Steenstra; Dubai Airport's director of sustainability, innovation and partnerships, Sven Deckers; and SITA MEA's vice president for business development, Adonis Succar.

Next on stage was ACI World's senior director of data and analytics, Diedrick Meijerink, who told delegates a little more about the association's new iHub initiative.

Two one-on-one chats followed. The first about the 'Road to Net Zero' involved Christchurch International Airport's sustainability transition leader, Claire Waghorn, talking to PA Consulting's Cserep; while the second saw IPP Travel Retail's CEO, Philip Nguyen, talk with The Moodie Davitt Report's Moodie about Vietnam's booming aviation and tourism sectors.

Discussing Christchurch International Airport's green credentials and sustainability leadership, Waghorn revealed that the New Zealand gateway began measuring its carbon emissions back in 2006, joined ACI's Airport Carbon Accreditation programme in 2017 and became one of the first gateways in the world to achieve the new Level 5 status in the programme in late 2023.

During his interview with Martin Moodie, IPP Travel Retail's Nguyen outlined the incredible economic growth of

Vietnam and the booming market had convinced his company to co-host this year's The Trinity Forum conference in Ho Chi Minh City in November.

The penultimate panel discussion of the conference was called 'Staff of Future: Changing Reality' and addressed the challenges of hiring new staff and the ways in which airports might have to change their recruitment strategies and even job requirements – specifically building more flexibility into roles and potentially time spent at the airport – to attract the workforce of tomorrow.

On the panel were Changi Airport Group's recruitment strategy, executive vice president, corporate, people and culture, Justina Tan; Riyadh Airports Company's chief human capital officer, Abdulmajeed Alqusaibi; Fabio Gamba, director general of the Airport Services Association; and Nahar Aljahani, vice president of talent acquisition for Riyadh Air.

The finishing line for the conference was now fast approaching, just leaving time for a cyber security presentation from ACI Asia-Pacific & Middle East's Young Executive of the Year Award winner, Bengaluru International Airport's Manoj Kumar; and review of what 2024 possibly holds for Asia-Pacific Aviation from OAG's head of Asia, Mayur Patel; before a final panel on 'Customer Experience and Changing Passenger Expectations'.

Addressing the ever-evolving needs of passengers in the final panel, in particular the need for a more personalised airport experience, Armando Brunini, CEO of Milan airport operator, SEA, and president of ACI EUROPE, admitted that his company had different strategies for the city's Linate and Malpensa airports due to the traffic they handle and inability to expand at the infrastructure constrained Linate.

WINNER NOJ KUMAR RE INTERNATIONAL ORT LIMITED



He described the commercial offerings at Malpensa as being like a 'department store' to appeal to all tastes and those at Linate as 'boutique' for its business traveller and frequent flyer customers, with the Malpensa experience being further tailored towards passengers depending on their flights – international long-haul, Schengen or non-Schengen short-haul and Low Cost Carrier travel.

Replying to how MATARAT is fine-tuning its customer service strategy to meet Saudi Arabia's evolving passenger personas, its general manager of customer experience, Yara Wehbe, said that it had developed a new overarching customer experience strategy that complemented "the local flavour of each region" across the country.

"To make it simple, if you ask me what I personally think is the most important passenger persona, I would say a mother and infant child travelling. If you accommodate her, you kind of hit the sweet spot for all others," commented Wehbe.

Addressing concerns about aviation's impact on the environment, Hermes Airports CEO, Eleni Kaloyirou, said: "What we need to remind our passengers is that we are doing everything in our power to decarbonise and reduce our impact on the environment, but they should continue travelling because travelling has so much to offer socially and economically to local and global communities."

She explained how the operator of Larnaka and Paphos airports in Cyprus had reduced its energy consumption by 30% over the last few years, and last year installed solar plants at its airports that currently produced 28% of their electrical requirements. Next on the agenda was the installation of LED lighting on the airfield, the introduction of electric powered GPUs and enhanced waste management recycling. Airports of Thailand (AoT) president, Kerati Kijmanawat, also reeled off a list of impressive sustainability achievements across its network and outlined some bold future ambitions.

These include solar energy providing 100% of the daytime electricity requirements of its terminals within three years; replacing all diesel powered service vehicles at its airports in the same timescale; encouraging taxi drivers to switch to alternative fuelled vehicles; becoming totally self-sufficient for water; producing energy from waste: and supporting the production of SAF in Thailand that could be sold to the global market.

AoT's Kijmanawat said: "Meeting our ESG goals is a very important pillar of our development. We are a listed company, so first and foremost we are representing our stakeholders and investors, and as you know, when people choose to invest, they want to invest in a company that is socially and environmentally responsible."

Delhi International Airport will host next year's ACI Asia-Pacific & Middle East's Regional Assembly, Conference & Exhibition in Delhi.

Inviting delegates to attend next year's Regional Assembly in Delhi, CEO of Delhi International Airport Ltd, Videh Kumar Jaipuriar, told delegates that they could be assured of a warm, Indian welcome and fantastic hospitality.

That just left time for ACI World's senior vice president for programmes and commercial services, Antoine Rostworowski, to offer some reflections on a "fabulous event" and thank Riyadh Airports Company for being such a kind and gracious host.

See you in Delhi next year!



ASIA'S BIG BUILD

In the second instalment of his two-part article, Marnix (Max) Groot, focuses on ongoing and planned airport development projects in South East and East Asia.

sia is a hot spot for infrastucture development projects with China, in particular, in the midst of a programme to upgrade its existing airports and build dozens more to give it the capacity to meet future demand.

This article highlights a selection of projects either under construction and/or in the feasibility and planning satge in China, Malaysia, Singapore, Indonesia, Mongolia, South Korea, Japan, Chinese Taipei and the Philippines.

CHINA

China has been building and expanding airports unrelentingly since the early 2000s. As the country has been trying to recover from an economic slump, there are no signs of slowing down. Currently, hundreds of airport projects are being executed or planned, including a vast number of regional airports and general aviation facilities.

Major new greenfield projects include Dalian and Xiamen, where the existing airports cannot expand and are being replaced with large-scale offshore airports.

Several other cities, including Chongqing, Guangzhou, Hangzhou, and Kunming, are building or planning to build a second major airport. Another greenfield project worth mentioning is the plan to build an airport in Suzhou, China's only city with a population of over 10 million without an airport!

Many of China's existing major airports are expanding with new runways, passenger terminals, and cargo facilities. Large-scale expansions are currently being planned or constructed at Changsha, Chongqing, Fuzhou, Guangzhou, Haerbin, Kunming, Lanzhou, Nanchang, Ningbo, Sanya, Shenzhen, Shijiazhuang, Shanghai Pudong, Taiyuan, Tianjin, Urumqi, Xi'an, Xining, and Zhuhai.

As the number of projects in China is too much to cover here in detail, we will focus on a selection of noteworthy projects.

Shanghai Pudong Airport is expected to start the construction of its Phase 4 expansion project later this year. The expansion includes a new 852,600sqm international and domestic terminal (Terminal 3); an integrated transportation centre and multi-storey car parks; hotels and offices; approach roads; and support infrastructure.

Shanghai Airport Group is also advancing the construction of Nantong New Airport, positioned as Shanghai's third airport. The project, located in Tongzhou District, Jiangsu Province, will feature two parallel runways and a terminal with an initial capacity for 40 million passengers annually.

In the future, two more runways and a boarding satellite will be added, raising Nantong New Airport's capacity to 80 million passengers annually. Construction is set to begin in 2024, with completion expected between 2026 and 2027.

In April, the construction of Guangzhou's second airport, Foshan Gaoming International Airport, kicked off, with completion expected by 2027. The \$7 billion first phase includes two parallel runways of 3,600 metres and 3,800 metres, a passenger terminal building of 420,000sqm with an annual capacity of 30 million passengers, and cargo facilities. Additionally, it will be connected to the Guangzhou-Zhanjiang high-speed rail. The addition of a third runway could potentially equip the airport to handle 60mppa by 2050.





While the current Chongqing Jiangbei International Airport is expanding to accommodate 80 million annual passengers, the southwestern mega-city is already planning a second major airport to be built between 2026 and 2030.

The first phase of Chongqing Zhengxing Airport will cost \$7 billion and includes two runways and a terminal building with a capacity of 40 million annual passengers. When fully completed, the new airport will have three to four runways, boast a capacity of up to 80mppa, and be capable of handling aircraft such as the A380-800 and B777-9. It is expected to start life as a domestic only airport before being developed into a regional aviation and cargo hub.

In the northern port city of Dalian, construction is underway on the \$4.3 billion offshore Dalian Jinzhou Bay Airport. Being built on 21 square kilometres of reclaimed land, it is scheduled for completion in 2035 and will replace Dalian Zhoushuizi International Airport.

The project's first phase includes the construction of two 3,600-metre runways, along with a 550,000sqm passenger terminal with a capacity of 43 million annual passengers. Upon full completion, the airport will have four runways and an expanded terminal, serving up to 80 million passengers annually. It will also be capable of handling one million tonnes of cargo per annum.

In the southeastern port city of Xiamen, work is underway on the \$2.1 billion first phase of the offshore Xiamen Xiang'an International Airport. The first phase will include two 3,600 and 3,800-metre runways and a passenger terminal offering 580,000sqm of floor space and boasting 78 contact stands.

It will initially be equipped to accommodate 45 million passengers and 750,000 tons of cargo per annum. Later, two more runways and two more passenger terminals will be added, increasing its capacity to 85mppa and two million tonnes of cargo. In Hong Kong, Hong Kong International Airport is in the final phase of its massive \$18 billion expansion project, which includes a third runway, which opened in July 2022, and a new boarding concourse, which is currently under construction and expected to open in June 2025.

The 283,000sqm boarding concourse has 34 contact stands and 23 remote stands. It will be connected to the terminal by means of a 2,600 metre long automated people mover (APM) system.

Terminal 2, which initially only had check-in facilities, shops and restaurants, will be upgraded to a full-service processing terminal. The expansion will raise the airport's capacity by 30 million passengers yearly to 104mppa.

In the longer-term, Hong Kong International Airport is expected to handle 120 million passengers and a huge 9 million tonnes of cargo annually.

Near neighbour, Macau International Airport, also has ambitions to grow and is set to embark on an expansion project to raise the airport's annual capacity from 10 to 13 million passengers with additional remote boarding gates and an expanded taxiway system. The land reclamation project required for the project is expected to start in the second half of 2024, with completion expected in 2029. In a later development phase, the gateway's capacity could be expanded to 15mppa.

MALAYSIA

Although traffic numbers at Kuala Lumpur International Airport are still well below its 75mppa capacity – it welcomed 47.2 million passengers in 2023 – the airport has plans in place to almost double its capacity to 140mppa should there be a significant upturn in traffic in the coming years.

Elsewhere in Malaysia's capacity city, Kuala Lumpur's Subang Airport, which functioned as the city's main airport until KLIA opened in 1998, is to be redeveloped



into an international airport supporting intra-Asian business connections, mirroring airports such as Taipei Songshan and Seoul Gimpo.

These plans include raising the capacity of the airport's passenger terminal from 1.5 to 3 million passengers per annum, and possibly up to 8mppa with future development.

Outside of the capital, Penang International Airport is about to start a terminal expansion project to double the gross floor area of the passenger terminal to 115,000sqm, effectively raising its capacity to 12mppa. Scheduled for completion in Q2 2028, the project will allow for the addition of six contact stands, bringing the total number of stands to 18. There are also plans to add six remote stands and a new multi-storey car park with an additional 1,700 parking bays.

In the tourist destination of Kota Kinabalu, focus has switched to upgrading the existing airport after environmental concerns caused the government to shelve plans for a new gateway. As a result, there are now plans in place to lengthen the airport's 3,780-metre runway and increase the terminal's capacity from 9mppa to 12mppa by 2026. In the long-term (2044), the capacity will be further increased to 21mppa.

In May 2024, local authorities announced plans to construct a new international airport for Kuching, as the current airport cannot be expanded beyond its current footprint. The existing Kuching International Airport (KIA) may be repurposed for chartered jets or private planes. Extensive studies must be conducted to determine whether this project is desirable and feasible.

Meanwhile, Kota Bharu International Airport is finalising a project to expand its passenger terminal. The project involves adding a wing with five additional boarding bridges and a 1,300 vehicle capacity parking garage. Next up will be a 400 metre expansion to the airport's 2,000 metre long runway after the \$93 million project was approved in May 2024. Finally, in Kedah in northwest Malaysia, the state government is looking for investors and approval from the central government to build Kulim International Airport, a.k.a. the Kedah Aerotropolis project, a cargo and logistics-focused airport and associated airport city development.

At the time of writing, the Kedah government was in talks with the Chinese Henan Airport Group about potentially financing the \$1.6 billion first phase of the project.

INDONESIA

With traffic booming again it seems likely to be only a matter of time before airport operator Angkasa Pura II, updates and relaunches its pre-COVID plan to build a fourth passenger terminal at Jakarta's Soekarno-Hatta International Airport. The original plan for the terminal, designed by Grimshaw, was for a 300,000sqm passenger terminal capable of handling 45mppa, which would have raised the gateway's capacity to around 110 million.

Meanwhile, to address long-term growth in Jakarta, there are proposals to build a second airport on a 3,000-hectare site about 50 kilometres southwest of Jakarta that could handle around 70 million passengers per annum.

In Bali, Denpasar's Ngurah Rai International Airport is planning to expand its capacity aimed at increasing its capacity from 24 million to 32 million passengers. The expansion includes the enlargement of the departure hall and security area, and increasing the number of gates. This growth is expected to be sufficient until around 2031 or 2032, after which the new North Bali Airport will be developed.

Discussed since 2015, if the North Bali Airport does come to fruition, it is expected to have an annual capacity of 32 million passengers, making it Indonesia's secondlargest airport.



According to existing designs, which are likely to be revised in Phase 1, the airport will initially feature a single 4,100 metre runway, a 230,000sqm passenger terminal, a cargo terminal, a maintenance area, and a seaport. Later, a second runway can be added.

Batam's Hang Nadim International Airport is also in line for an upgrade with construction work starting on its new Terminal 2, which could open as early 2026. The project, part of a larger \$370 million development plan for the airport, involves an investment of approximately \$148 million in its first phase.

Terminal 2 will cover 50,000sqm and is designed to handle up to 9.6 million passengers annually. A consortium that includes PT Batam International Airport, PT Angkasa Pura I, Incheon International Airport Corporation, and PT Wijaya Karya (Persero) Tbk is developing the terminal. Future enhancements include a new apron to increase the airport's capacity.

Another interesting project is the construction of Nusantara Airport, which will serve Indonesia's future capital, located on the east coast of Borneo. With an investment of \$261 million, Phase 1 includes a 3,000-metre runway and a 7,350sqm passenger terminal that will initially only serve guests of the state. Long-term, the airport could eventually be expanded to handle 30 million annual passengers.

SINGAPORE

In 2025, Changi Airport will start constructing its new \$10 billion Terminal 5, which will raise its capacity by 50 million to about 135 million passengers per annum.

The terminal, designed by Kohn Pedersen Fox (KPF) and Heatherwick Studio, has been designed with the "airport as a city" concept in mind, with each area viewed as a "series of neighbourhoods" with their own character. The terminal is expected to be operational by the mid-2030s.

Terminal 5 is part of the Changi East mega-development – its 1,080-hectare site is almost as big as the land

area of today's Changi Airport – which will provide future capacity for Singapore's gateway to the world. Operator, Changi Airport Group (CAG), has stated that it wants Terminal 5 to be green and sustainable beyond today's standards in line with its commitment to being a sustainability pioneer.

MONGOLIA

A study to expand and enhance the capacity of Chinggis Khaan International Airport in Ulaanbaatar will begin in June 2024 and is expected to be completed by January 2025. Opened in July 2021, the airport has a 3,600-metre runway and a 3mppa passenger capacity terminal, which can be expanded to 12 million passengers annually. The airport is expected to welcome 2.2 million passengers this year, up from 1.75 million last year.

Mongolia is also hoping to build a new commercial airport near Kharkhorum in the centre of the country. The airport is part of a much larger undertaking to build a new city – New Kharkhorum – to reduce pressure and congestion in Ulaanbaatar, which is now home to more than half of the country's population and is home to most of its economic activity and civic infrastructure. The project is now in the feasibility stage.

More definite are Mongolian government plans to upgrade Choibalsan, Gurvansaikhan and Hovd airports. The upgrades to ICAO category 4C (Choibalsan and Hovd) and 4D (Gurvansaikhan) include extending runways and enhancing passenger facilities. The projects will be executed in PPP formats.

SOUTH KOREA

By the end of 2024, Incheon International Airport will complete the \$3.5 billion expansion of Terminal 2, which will increase Incheon's capacity from the current 77 million passengers per annum to 106mppa.

With this, Incheon will become one of the world's largest airports in terms of passenger capacity. But it



doesn't end there; Incheon is currently planning a fifth round of expansion, including a third passenger terminal and fifth runway.

Another notable development is a \$900 million project to modernise Terminal 1, which is over 20 years old. The renovation will commence in April next year and is expected to be completed by June 2033. A new cargo terminal with an annual capacity of 140,000 tons is also set to open at Incheon Airport in 2027. This addition will significantly increase the airport's cargo handling capacity from the current 280,000 tons annually to an expected 420,000 tons.

Another major undertaking in South Korea is the constructing the new offshore Gadeok International Airport near Busan, the country's second-largest city.

The \$9.8 billion airport is set to open by the end of 2029 and have facilities that include a single 3,500-metre runway, a 17mppa capacity passenger terminal and cargo facilities capable of handling up to 286,000 tonnes of cargo per annum. Work on the terminal design will commence during the second half of this year.

Elsewhere, there are plans to build a new airport in Daegu to replace the city's existing gateway by 2030. Construction of the new airport, which will accommodate both civilian and military aircraft, is expected to start in 2025.

Upon opening, the new airport – which will serve South Korea's fourth largest city – is expected to have a single 3,200 metre runway, a 10mppa capacity passenger terminal, and an airport city development focused on cargo and logistics. A high-speed rail will also connect the new airport to western Daegu and Uiseong. Additional runways and terminals can be added later according to demand.

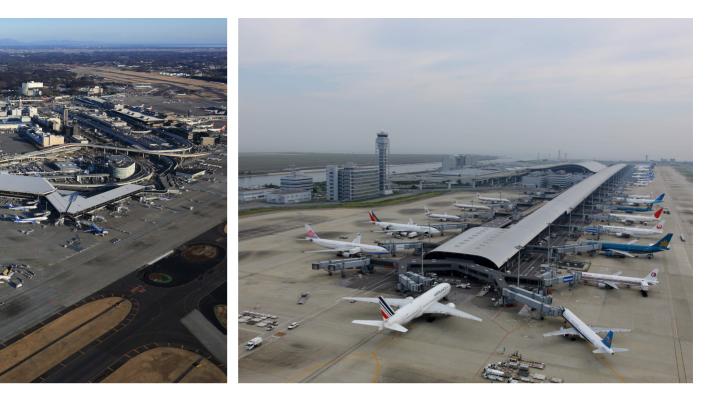
South Korea's Ministry of Land, Infrastructure and Transport, expects work to start this year on the new \$604 million Saemangeum International Airport ahead of its scheduled opening in 2028. The airport will initially have a 2,500-metre long runway and a single passenger terminal.

Another gateway with big plans is Cheongju International Airport, which is considering building a new international passenger terminal. The airport also wants to add a civilian-exclusive runway – the current runway is shared with the military – and enhance its commercial facilities, and duty-free shops. This expansion aims to prepare Cheongju International Airport for a more significant regional role in support the broader tourism industry.

Finally, in Jeju Island, a popular tourist destination, there are plans to build a second airport to supplement the existing Jeju International Airport. The \$5.1 billion project, which has been under discussion for years, will include a 3,200-metre runway and passenger terminal equipped to accommodate up to 19 million passengers annually. The project is currently in the planning phase.

JAPAN

The largest airport project in Japan in the coming decade will be the complete revamp of Tokyo's Narita International Airport based on the creation of a 100-gate mega terminal, the first phase of which is expected to open in the early 2030s.



The project will merge the three existing terminals and significantly increase space for aircraft. The eastern half of the terminal is expected to be completed between 2030 and 2034, with the rest to be built based on air travel demand. The building will offer up to 1.15 million square metres of floor space and 30 additional aircraft parking bays, taking the total to around 190.

Tokyo Narita's airfield capacity will also be significantly expanded with a new 3,500-metre Runway C and the extension of the existing Runway B from 2,500 to 3,500 metres. These projects are scheduled to be completed by 2029. Upon completion of all the projects, the airport will be capable of handing 75 million passengers per annum – 25 million more than today.

Tokyo's Haneda Airport is also expanding, with construction work recently beginning on a new satellite facility north of Terminal 1. The 21,000sqm satellite, which is expected to be in use by the summer of 2026, will boast six gates equipped with boarding bridges.

Haneda is also considering a plan to connect its two major terminals, creating a new international terminal processor above the Shuto Expressway, which runs between the terminals. If realised, this plan is expected to significantly improve convenience for passengers transferring between domestic and international flights and alleviate congestion in Terminal 3. Preliminary studies are currently underway.

In Osaka, recently completed renovation and extension works have increased the capacity of Kansai International Airport (KIX) from 23 to 40 million passengers per annum. However, in 2023, Kansai handled 41.5 million passengers, and more expansion will be necessary. The airport's master plan allows for the construction of a third major passenger terminal opposite Terminal 1, but this may still be a few years away as operator, Vinci Airports, is likely to look at optimising operations across KIX's existing facilities before investing in the new terminal.

In Sapporo, the city's downtown Okadama Airport is considering upgrading its terminal either through an expansion project or reconstructing the existing layout and design. A basic plan, to be finalised in the fiscal year 2024, will detail the scale and cost of the project which the airport is aiming to complete by 2030.

A project that is 100% happening is the opening of a new passenger terminal at Kobe Airport, which will be in operation ahead of Expo 2025 in Osaka, Kansai. The so-called "sub-terminal" will have a total floor area of 15,000 to 20,000sqm and effectively double the number of aircraft parking stands at the gateway.

Several airfield expansion projects are ongoing or being planned elsewhere around the country. Fukuoka Airport, for example, plans to open its second 2,500-metre runway in spring 2025; Kitakyushu Airport is to extend its runway to 3,000 metres to strengthen its role as a hub for international cargo transportation; Lengthening the runway at Yakushima Airport will allow it to handle jet aircraft; and Komatsu Airport, located on the western coast of Honshu Island, is considering building a parallel runway, according to its 30-year master plan.

Naga Airport is also planning a \$178 million project involving constructing a new 2,000 runway with a different



orientation in addition to building a new passenger terminal, and a larger apron to accommodate more and larger aircraft.

CHINESE TAIPEI

One of Asia's largest airport construction projects is the addition of a new Terminal 3 and a third runway at Taipei Taoyuan International Airport by 2027.

Set to open in phases with the north concourse being inaugurated in mid-2025, the new 640,000sqm terminal is expected to increase the airport's capacity from 45 to 82 million passengers annually. While the new 3,700-metre third runway will raise the gateway's airfield capacity from 50 to 90 aircraft movements per hour when it opens in 2030.

In the south of the country, Kaohsiung Airport is preparing to build a new passenger terminal, with construction slated to start in 2025. The new terminal will be built in phases, starting with a new 8mppa capacity building on the east side of the existing international terminal. In the final stage, set to be completed in 2040, the airport's capacity will have doubled to 16.5 million passengers per annum.

THE PHILIPPINES

The Philippines is going through a dynamic growth phase, with various airport upgrade projects planned

or underway. Most investment focuses on Manila, where, if all they all come off – including the more long-term projects – the combined capacity of the airports will be a staggering 375 million passengers per annum.

So what are these projects? As part of a \$3 billion upgrade, there are now confirmed plans for a new passenger terminal at Manila's Ninoy Aquino International Airport (NAIA), according the San Miguel Corp-led consortium, which has won the 15-year operations and maintenance contract for the airport.

Designed to accommodate up to 35 million passengers annually, the new terminal will raise the airport's capacity to 62mppa. Its development will result in relocating all offices from the current terminals to the new building, freeing up 30% more space in Terminals 1, 2, and 3, which will be renovated. Construction of the new terminal is anticipated to take around three years, with plans to commence building within six months after receiving necessary approvals.

In order to focus on Ninoy Aquino International Airport, the San Miguel Corp (SMC) decided to delay the development of the New Manila International Airport (NMIA) in Bulacan. Originally planned to start in 2025, it has been postponed to 2026, but *Momberger Airport Information* expects more delays.



The first phase of the \$14.5 billion project, to be built on artificial land 35km north of Manila, will include two runways, a passenger terminal with an annual capacity of 35 million passengers, and an airport city development. Depending on demand, two more runways and two more passenger terminals can be added, increasing its total capacity to in excess of 100 million passengers per annum.

Due to the recent award of the Ninoy Aquino International Airport concession to SMC, another major project to build a new airport for Manila, Sangley Point Airport, has been put on hold for now, but perhaps indefinitely. Its \$4 billion first phase, to be built on reclaimed land, outlines plans for a single runway and a 25mppa capacity passenger terminal. If demand materialises, three additional runways could potentially be added, along with extra terminal capacity to theoretically accommodate up to 30mppa.

Clark International Airport, which also serves Metro Manila, plans to invest \$121 million on the construction of a second runway, taxiways, aprons, and landside access roads and utilities. In addition, UPS is establishing a new hub at Clark. Construction is set to begin in February 2025, with operations expected to commence by late 2026.

The airport has also announced plans to construct a \$152-million agriculture trading hub within the Clark civil aviation complex, aiming to make it the largest food hub in the Philippines.

According to the master plan, the passenger terminal can be expanded to handle 30 million passengers annually. In the long-term, a third runway and two more passenger terminals can be added, increasing the airport's capacity to accommodate up to 80mppa.

Other projects around the country include new airports planned or under construction at Bukidnon, Barangay Tambo, and Pangasinan. Major planned greenfield projects include the \$292 relocation of Dumaguete's airport, the \$142 relocation of Masbate airport, and the relocation of Cotabato airport.

While major terminal and runway expansions and upgrades are currently being planned at Busuanga International Airport (\$310 million), Iloilo International Airport (\$455 million), Laguindingan International Airport (\$248 million), Naga City Airport (\$178 million), Siargao (\$106 million), Bohol-Panglao International Airport (\$78 million), and Pag-asa Island Airport (\$26 million).

ABOUT THE AUTHOR

Marnix (Max) Groot is managing editor of <u>Momberger</u> <u>Airport Information</u>, a bi-weekly executive newsletter providing market intelligence on airport projects worldwide. Founded in 1973, it is currently the world's oldest independent airport publication. You can sign up for a free, two-month trial <u>here</u>.



TOP TECHNOLOGY PRIORITIES

Rudy Daniello, Amadeus' executive vice president of airport and airline operations, highlights some key technology investment trends.

ur latest research, Travel Technology Investment Trends 2024 Airports, demonstrates that self-service is now mature, with more than half of the airports we surveyed providing self-service at check-in, bag-drop, and boarding.

But what does the future hold? And where are airport leaders investing to deliver future improvements in passenger services and operations?

According to our study, which interviewed 50 senior technology leaders from airports around the world as well as 1,100 respondents from other parts of the travel industry, 92% of airports plan to invest 'the same or more' in technology this year, with budgets set to rise by 17% on average over the coming twelve months.

We also asked this same question to other areas of the travel industry, and nowhere are budgets set to rise as much as at the terminal. For example, airlines and travel agencies will both increase investment by 13% on average, hotels by 14% and corporate travel departments by 15%.

WHY ARE AIRPORTS INVESTING MORE?

Airport leaders told us that technology investments are happening with several different objectives in mind.

A desire to improve the passenger experience was most frequently cited (56%), followed by improving operations

2024	2029
Machine learning	Machine learning
Generative AI	Generative AI
Cloud Computing	Cloud Computing
Digital payments	Digital payments
Extended reality (the metaverse)	Extended reality (the metaverse)

(52%), and operating more sustainably (52%), but other less obvious objectives scored highly, too, like moving to the cloud (46%), collaborating more closely partners like airlines (40%) and reducing and mitigating the impact of disruption (30%).

This mixed picture highlights the multiple different challenges airports currently face. There is a need to balance long-term aspirations to deliver a competitive passenger experience that attracts airlines and delivers for travellers with a need to improve operations, particularly in disruption scenarios.

At the same time, airports face a growing need to improve sustainability. These priorities likely explain why airports are increasing investment more than other areas of the industry; there's a lot of work to do.

Which technologies hold the greatest promise for airports? The world is undergoing a period of rapid technological development as breakthroughs in fields like AI, fintech and



cloud computing begin to make a tangible impact on how business is conducted.

These technologies are increasing automation, improving decision-making and supporting new customer experiences in every sector, from banking to automotive but certainly in aviation, too.

We asked airport leaders to choose which technologies they felt would have the biggest impact this year and over a five-year horizon, from a list of fifteen options. Perhaps, unsurprisingly given the long-term nature of airports, leaders selected the same top five technologies over both time horizons.

MACHINE LEARNING

The technology expected to make the biggest impact at the airport is machine learning. This makes sense as machine learning is increasingly being embedded within most software products to improve the quality of automated decision-making and recommendations.

At Amadeus, machine learning powers our suite of airport operations technology that crunches vast amounts of data to, for example, recommend optimal aircraft take-off sequences to improve efficiency and reduce unnecessary fuel burn.

Also, it's used in our solution that takes complex decisions on how best to allocate shared resources like stands and gates based on demand and schedules.

But these examples are just the tip of the iceberg for machine learning at the airport. For example, we recently launched our Virtual Airport Operations Centre, which provides a single view of the health of an airport's operations. The system is designed as an

WHICH OF THE FOLLOWING LOCATIONS DO YOU THINK IT WOULD BE USEFUL TO PROVIDE CHECK-IN AND BAGGAGE SERVICES?	NEXT 12 MONTHS
New locations around the airport e.g. car park	52%
Major hotels in the vicinity of the airport	46%
City centre locations	40%
Major hotels in the vicinity of the airport	38%
Cruise terminals	28%

app within Microsoft Teams to ensure the operational plan and performance metrics can be easily shared and consumed.

Machine learning is vital to this innovation, ensuring that operations teams benefit from pro-active and predictive alerts. For instance, using data feeds from public transport, the system can foresee peaks in demand so airports can preemptively power-up more self-service resources and staffing levels before service quality is affected.

Machine learning is also the underlying technology behind computer vision, a field of AI that allows machines to derive meaningful information from digital images, videos and other visual inputs. This approach can help to automatically identify airside assets so they can be better managed.

GENERATIVE AI

Generative AI is a field of AI that can interpret human language and since the launch of high-profile services like Chat GPT has attracted significant attention. Whilst use cases for Generative AI at the airport are still emerging and arguably less obvious than machine learning, they do hold promise.

For example, we are working with partners including AI chip firm NVIDIA to develop interactive avatars for use at the airport. These prototypes can interpret natural language voice or text chat with travellers in 26 different languages to advise passengers about flight information or the airport's services.

These avatars tend to be displayed within a kiosk and cameras mounted at the kiosk are able to identify the passenger's demographics so the avatar's appearance can change accordingly. For instance, if a child asks a question, then the avatar may resemble a child or a character from a computer game.

In the future, we envisage such digital assistants 'transferring' from the kiosk to the passenger's mobile device so they can benefit from advice as they move around the terminal.

The AI model used can be trained on specific flight information, so it's empowered to return accurate and customised information to the traveller.



CLOUD COMPUTING

The impact of cloud computing at the airport cannot be understated. Although the cloud isn't new, adoption across airports is only now beginning to really accelerate.

Moving to the highly scalable public cloud promises to free airports from the constraints of siloed legacy technologies so different applications and technologies can be integrated more quickly and more easily.

In our recent survey, we asked airport technology leaders if they are planning to offer passenger services from new locations, and the vast majority (92%) see potential in this approach.

EXTENDED REALITY

Sometimes referred to as 'the metaverse', extended reality refers to technologies often involving Virtual Reality or Augmented Reality.

In certain areas of the travel industry, extended reality is used to help travellers experience the product during the shopping process. Amadeus is working with several airlines to help them display their premium cabin experience in great detail using this technology.

At the airport, extended reality is most closely associated with 'digital twins', virtual representations of the

airport's operations that are fed with real-world data feeds so airports can run scenarios, test assumptions, and react more quickly. These models are particularly interesting when combined with computer vision technology and hold significant promise for the industry.

FINAL THOUGHTS

It's a very exciting time to be working in airport technology. The combination of the new and maturing technologies explored in our study promises to enable completely new ways of working. From fully biometric end-to-end passenger experiences to AI-enabled operations and biometric baggage management, the opportunities for transformation are significant.

What's common to these opportunities is the need for access to information and the ability to effectively share insights with all organisations involved in the underlying operational or passenger process. That's why we advocate for shared and open technology foundations, which are now much easier to deliver from the cloud.

As airports deploy the additional investment identified in our study, it's important to do so in a way that fosters collaboration. I believe that's how we can maximise the return and best deliver for passengers.

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EXPANDING MADINAH AIRPORT

Massimiliano Martinenghi, project director at Scott Brownrigg, tells us more about the planned expansion of Madinah Airport in Saudi Arabia.

adinah Airport (MED), officially known as Prince Mohammad bin Abdulaziz International Airport, is a hugely important gateway for the Kingdom of Saudi Arabia as it serves the second holiest city in Islam.

Madinah is home to the Prophet Muhammad's mosque, Al-Masjid an-Nabawi, and his final resting place, and as a result attracts millions of visitors annually, especially during the Hajj and Umrah pilgrimages.

Designed by Scott Brownrigg in 2014, the existing 156,000sqm terminal serves both international and domestic flights and was built to accommodate up to nine million passengers per annum.

However, soaring demand due to the booming Umrah travel market and rapid growth of tourism to Saudi Arabia means that the airport is fast approaching its maximum capacity.

The expansion and modernisation of Madinah Airport are key elements within Saudi Arabia's transformative Vision 2030 initiative, unveiled in 2016 by Crown Prince Mohammed bin Salman.

Vision 2030 aims to transform the Kingdom's economy, society, and governance by diversifying the Kingdom's economy beyond its reliance on oil, while nurturing robust public services, championing sustainable development, and boosting tourism alongside infrastructural upgrades.

MED's expansion includes the construction of a new domestic terminal (T2) spanning 39,000 square metres and the renovation and expansion of the existing international terminal (T1), which will feature new facilities for the growing number of Hajj and Umrah pilgrims passing through the gateway.

Particular attention has been paid to the environmental impact and sustainability aspects of the development; the existing terminal achieved Gold certification under the LEED for New Construction Rating System.

The new domestic terminal T2 is also intended to receive Gold Certification, following and, in some cases improving upon, the rating of the existing terminal.

Our design concept was inspired by the airport's role as a gateway for millions of Islamic pilgrims as well as the palm tree – a symbol for peace and welcome – which has become emblematic in the terminal building.

The palm motif brings a unique architectural identity to the development and provides a pragmatic and efficient structural support, while using a minimum amount of material.

The geometry of the roof's structural support reflects a biophilic design, integrating nature-inspired geometries into architectural spaces to enhance human wellbeing and environmental harmony.

The terminal evokes a sense of spiritual calm and reflection, mimicking natural elements typical of Saudi Arabian culture.



The structure was designed to be modular, with each palm-tree built upside down at ground level and then rotated and craned into place. The structural framing system has been designed to reduce the amount of material required to support the roof, thereby reducing the embodied carbon of the structural elements.

Truss systems, including those used for roof support, are more sustainable because they minimise the amount of material required while maximising structural strength and efficiency.

By distributing loads more evenly and efficiently, trusses reduce the need for excess materials, leading to lower resource consumption and reduced environmental impact.

The structural system supporting the roof of T2 follows a similar language to T1 but simplifies the structure with more geometric and minimal elements.

In addition, the column span and the height of the elements have been adjusted to optimise the solution. This allowed Scott Brownrigg to create further material savings, while keeping open floor plans that enhance the sense of place and the passenger experience.

The new terminal's open floor plans will allow clear and intuitive wayfinding and orientation. Natural illumination, reinforced by skylights and glazed cladding, brings a sense of quiet atmosphere, introducing natural light and direct views to the airfield.

The interior design includes modular elements capable of creating unique and bespoke spaces, with the intent of increasing the passenger experience during the journey, reducing stress, and enhancing the sense of place.

Passengers have quiet zones, and the integrated Islamic architectural elements magnify the spiritual ambiance of arriving in Madinah.

In T2 more natural, local and recycled materials, including marble and timber, will be introduced to support local economies and reduce the environmental impact associated with transportation.

This approach also promotes use of materials that are well-suited to the local climate and conditions, enhancing the durability and performance of the terminal over the years to come.

The terminal will also include dedicated areas for children and families to enhance comfort and provide entertainment and engagement for passengers waiting for transfers or flights. These family-friendly spaces will feature soft play areas to keep children occupied and happy.

Additionally, there will be comfortable seating areas for parents to relax while keeping an eye on their children.

The terminal will also offer amenities such as nursing rooms, family restrooms, and stroller rentals to ensure convenience for families travelling with young children.

The project also encompasses significant landscaping efforts, transforming the dry desert surrounding the terminal into a welcoming environment. These newly created outdoor spaces will be accessible to both passengers and staff, providing a pleasant and functional area for relaxation and activities.

Outside, the landscape will be irrigated with recycled wastewater, meticulously treated to guarantee its safe reuse for irrigation and minimise waste. The design includes shaded areas along various pathways to offer comfort and protection from the sun.

The thoughtful integration of green spaces and water conservation techniques underscores the commitment to environmental stewardship, creating a more enriching experience for everyone at the terminal.



GOING GREEN

We take a closer look at a handful of sustainability stories making headlines across the region in the first half of 2024.

ENVIRONMENTAL STEWARDSHIP IN DOHA

Hamad International Airport is celebrating its 10th anniversary, and among a host of facts and figures surrounding the milestone, it notes that it is fully committed to environmental sustainability and implementing initiatives to minimise its ecological footprint.

Indeed, the Qatar gateway points out that it is "constantly investing in innovative solutions that will improve its environmental performance".

These efforts are said to include collaborating with the industry in leading global efforts to control CO2 emissions to tackle climate change, meeting and exceeding industry best practices for air quality and preventing pollution and meeting compliance obligations.

Between 2022 and 2023, through its enhanced waste management system, approximately 40% of waste generated by airport operations was reused or recycled.

Hamad International Airport's dedicated wastewater treatment plant treats 100% of the airport's sewage and is working towards maintaining the use of treated sewage effluent for landscape irrigation – resulting in zero potable water used for irrigation and zero wastewater discharged to the sea.

The Doha airport has also implemented various initiatives and environmental controls to further reduce energy consumption, such as cooling system optimisation, smart metering, and LED lighting. These efforts have led to the airport achieving Level-3 status in ACI's Airport Carbon Accreditation programme and ISO 14001 Environmental Management Systems accreditation.

In addition to its strategic partnerships for sustainably disposing of waste, Hamad International Airport actively composts organic waste, transforming food scraps and other organic materials into nutrient-rich fertiliser for landscaping.

The airport notes that it is currently exploring the possibility of recycling dry sludge for bio soil production and converting food waste into grey waste for further recycling.

QUEENSTOWN AIRPORT'S BIODIVERSITY PROJECT

As you will able to read on page 8 of this issue, Queenstown Airport has received international recognition for its support of a local wetland restoration project.

The New Zealand gateway has received a Platinum Award in ACI Asia-Pacific & Middle East's 'Green Airports Recognition' programme for its collaboration with the Whakatipu Reforestation Trust and the Shotover Primary School to restore the Shotover Wetland.

The airport has committed to long-term financial assistance and help with planting sessions, community engagement, and education days. Its involvement has accelerated the project, with a target to fully restore the wetland within 10 years.

The Green Airports Recognition judging panel assessed Queenstown Airport against other airports in Asia-Pacific



and the Middle East handling up to eight million passengers a year.

Airport chief executive, Glen Sowry, says working through the ACI Green Airports Recognition process was a fantastic opportunity to benchmark Queenstown Airport's efforts.

"Since the introduction of our Sustainability Strategy five years ago, we've seen a 65% reduction in total greenhouse gases from our operations," says Sowry.

"We know we've made some good progress, and we're really proud of that, but we have great ambition in this space, and we know there's a lot more we can do to champion sustainability and biodiversity in this region. Queenstown Airport is deeply conscious of the need to protect what makes this special place unique."

HONG KONG'S AWARD WINNING MARINE PROJECT

Hong Kong International Airport's 'Marine Ecology and Fisheries Enhancement Strategy' project was another to win the highest Platinum Award in the ACI Green Airports Recognition 2024 programme, achieving success in the category for airports handling over 35 million passengers per annum.

Peter Lee, Airport Authority Hong Kong's general manager for sustainability, enthuses: "We are honoured to receive this award, which commends our voluntary and continuous efforts to explore and enhance local marine biodiversity and fisheries resources around HKIA and North Lantau waters.

"The efforts, namely eco-enhancement of seawall designs, deployment of artificial reefs and shellfish reefs, and fish restocking, were first investigated by experts, with pilot tests following on intended to determine the viability and real-world value of promising enhancements.

"With positive biodiversity impacts identified, we are in the process of scaling up these initiatives around the airport, and importantly, these nature-based efforts will serve as a useful reference for future implementation by others across broader Hong Kong waters."

KANSAI INTERNATIONAL AIRPORT'S SEAWEED BED

Kansai Airports' 'Creating a rich seaweed bed and blue carbon' project at Kansai International Airport (KIX) has also received a Platinum Award in the Green Airports Recognition 2024 programme organised by ACI Asia-Pacific & Middle East.

As an offshore airport, KIX has been actively working to create a seaweed bed environment that provides a habitat for marine life, in harmony with the marine environment, since the development plan of the airport.

The gently sloping rubble mound seawalls used for most of the seawalls allow light to reach a wide area, making it easy for seaweed to grow. Its efforts to plant seaweed and preserving it by continuously monitoring the status have resulted in the creation of a rich seaweed bed environment, leading to the diversity of the marine ecosystem.

Indeed, the project contributes to the conservation of biodiversity at the airport and to the reduction of CO2 emissions through the seaweed beds.

KIX CEO, Yoshiyuki Yamaya (pictured above), was in Riyadh to receive the airport's Green Airports Recognition award at the ACI Asia Pacific & Middle East's Regional Assembly in Saudi Arabia on May 22.

Kansai Airports Group notes that it "will continue to promote company-wide efforts to reduce its environmental impact and contribute to the realisation of a sustainable society through the operation of airports, which are public infrastructure."

Organised by ACI Asia-Pacific & Middle East, this year's Green Airports Recognition awards recognised airports with outstanding achievements in biodiversity and nature-based solutions. We pay tribute to all the winners in the ACI Asia-Pacific & Middle East news section of this issue.

APAS



ROUTES AND DESTINATIONS

We shine the spotlight on Perth Airport's historic commercial agreement with Qantas and the recovery and expansion of its international route network.

antas and Perth Airport have reached an historic commercial agreement which will unlock a multi-billion dollar wave of investment and deliver new international and domestic flights, giving a major boost to Australia's tourism industry.

As part of the 12-year agreement, Perth Airport will invest around A\$3 billion in new terminal facilities and a new parallel runway which will generate immediate and ongoing economic growth and job creation.

This will form part of a A\$5 billion capital investment programme by Perth Airport – the largest ever private infrastructure development in Perth – which will also deliver two multi-storey carparks, major access roadworks, and the airport's first hotel.

Perth Airport CEO, Jason Waters, said: "This is a special moment in the history of aviation in Western Australia as this agreement will unlock the future for both Perth Airport and Qantas.

"Qantas has some ambitious growth plans for its operations in Perth and we are thrilled to have the opportunity to push ahead together to realise this potential.

"Western Australians will now see the largest-ever private investment in an infrastructure development in Perth – a once in a lifetime investment programme that will completely change the face of Perth Airport over the next decade.

"Perth Airport's plans will see more than A\$5 billion invested in delivering new terminal facilities, a new parallel runway, two multi-storey carparks with associated roadworks, and our first airport hotel.

"This will create thousands of construction and on-going jobs, underpin the future growth of the FIFO-based resources sector, generate new tourism and trade opportunities, and deliver enormous ongoing benefits to Western Australia.

"Most importantly, it will deliver one airport for the people of Western Australia which will host all flight services giving them a seamless, world class travel experience."

Qantas and Jetstar will relocate all services to a new terminal in the Airport Central precinct that will, along with the airline's major investment in new aircraft, enable the growth required to turn Western Australia into a major domestic and international hub for the airlines.

Qantas and Jetstar plan to add 4.4 million seats to and from Perth per annum by the time the new terminal opens in 2031.

The hub will significantly enhance inbound tourism and give Australians more options when travelling to Asia, Africa, India and Europe.

According to the airport, the new terminal is set to offer passengers a world-leading travel experience, with seamless domestic and international transfers, as well as state-of-theart check-in and bag drop facilities. Qantas will work with Perth Airport on plans for a multi-lounge precinct for international and domestic passengers with a new signature design and bespoke dining and wellness initiatives. As part of the agreement, Qantas plans to build a new engineering hangar in the Airport Central precinct.

Perth Airport will also invest in upgrades to Terminals 3 and 4, the current home of Qantas domestic and international flights, to create additional capacity while the new terminals are built. Jetstar will relocate its domestic services to Terminal 2 from September 2024, unlocking further growth opportunities for both airlines, before moving into the Airport Central terminal when complete.

The Terminal 3 and 4 upgrades will enable Qantas to add services and more destinations from Perth, including Auckland and Johannesburg from mid-2025, subject to meeting border agency requirements. The works will also include gate upgrades to accommodate ultra-longhaul aircraft, including its Project Sunrise Airbus A350s which arrive from 2026.

Qantas and Perth Airport have also agreed on the need for and timing of the new parallel runway which is expected to be open in 2028.

Delivery of the new runway will enable further growth for the critical resources sector and future-proof aviation in Western Australia.

Qantas CEO, Vanessa Hudson, enthused: "This is the largest airport infrastructure deal in our history. It will enable us to create a world-class western hub and significantly expand our domestic and international services over the short, medium and long-term.

"Not only will it allow us to bring hundreds of thousands more travellers to and through Western Australia each year, it will also make it easier for overseas tourists to connect to more destinations across Australia.

"Perth-London and Perth-Rome are two of the most popular flights on our international network, which gives us confidence in our strategy to ramp up WA flying over the next few years as we receive new aircraft and grow our fleet.

"The additional flying will see us create an estimated 700 new jobs in Western Australia across pilots, crew, engineering and airport staff.

"With the launch of Perth-Paris in July and Jetstar's new services into Asia starting later this year, we have a pipeline of growth underway that will mean Perth is on track to become our second biggest international gateway behind Sydney."

RETURN OF GUANZGHOU-PERTH ROUTE

And the good news keeps coming for Perth Airport as China Southern Airlines recently announced that it will reconnect Western Australia with mainland China with the return of its service to Guangzhou from November 28, 2024.

Perth Airport's chief commercial and aviation officer, Kate Holsgrove, said that the news will provide a significant boost for Western Australia's tourism industry.

"The Chinese visitor market is so valuable for tourism, business, education, and exports. China already represents Western Australia's fourth biggest market with 54,000 visitors in 2023 injecting A\$230 million into the economy, and we know that non-stop services will have a positive impact to visitation numbers.

"The return of this service is a result of a significant amount of work in partnership with Tourism WA and State Government and we look forward to further developing our partnership with China Southern Airlines."

The service will operate three times a week on Tuesday, Thursday and Sunday and will deliver 86,000 seats and 5,000 tonnes of cargo capacity into the Perth market.

She added: "Fresh produce, business and leisure tourism are all key export focus areas and a direct link between China and Perth will undoubtedly further connect Western Australia and benefit the entire economy."

Western Australia's deputy premier, Rita Saffioti, enthused: "China stands out as one of Western Australia's premium markets that has historically delivered high visitor numbers and expenditure, so we'd expect this to rise significantly with the resumption of this non-stop service.

"This direct connection will not only bolster inbound tourism, but also energise adjacent sectors such as agriculture and business exchanges, solidifying our state's reputation as Australia's Western Gateway."

OTHER NEW ROUTES

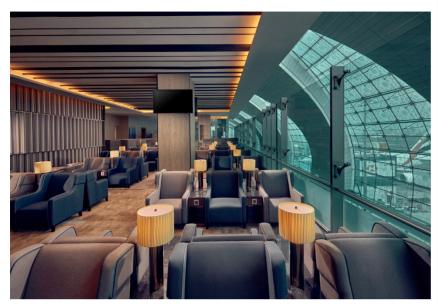
In a busy few months for the airport, both Thai Airways (Bangkok) and South African Airlines (Johannesburg) have recommenced services to Perth and Cathay Pacific has announcing that it will add five more services between Hong Kong and Perth from October 28.

Talking about the latter, Perth's Holsgrove said: "The airline's decision to operate more flights to Perth shows the confidence that the international aviation market has in Perth as a destination.

"Cathay Pacific has been an important airline partner for more than 50 years and we are delighted that the airline remains committed to connecting Perth and Western Australia to Hong Kong and beyond."

WBP NEWS

The latest news and views from ACI Asia-Pacific & Middle East's World Business Partners.



PPG TO INVEST IN MIDDLE EAST EXPANSION

Plaza Premium Group (PPG) has announced a strategic investment of \$100 million to expand its presence in the Middle East with a major focus on Saudi Arabia.

It says that the funds will be used on the opening of "world-class lounges, establishing a global airport concierge service with white-glove service, creating innovative dining outlets, and exploring opportunities for in-terminal hotels". Song Hoi-See, founder and CEO of Plaza Premium Group, said: "This is an exciting time to invest in the Middle East, a region that exemplifies the future of travel and tourism."

PPG has developed a portfolio of airport lounges, hotels, and F&B outlets across the Middle East since 2014. The company currently operates in 15 locations across eight international airports that include Amman, Jeddah, Dubai and Muscat.

INDIA EXPANSION FOR ADB SAFGATE

ADB SAFEGATE has been awarded the contract to supply the airfield ground lighting system at Bhogapuram Airport, a new greenfield airport being built by GMR Visakhapatnam International Airport Ltd (GVIAL) in Andhra Pradesh, India.

Bhartendu Mohan, ADB SAFEGATE's country director for India, enthuses: "This innovative solution will not only enhance the airport's operational efficiency but also set new standards for safety and sustainability in the aviation industry. We look forward to delivering exceptional results for this project."

ADB SAFEGATE and project partner Larsen & Toubro Limited (L&T) have previously collaborated on projects in Bangalore, Hyderabad, and Navi Mumbai. While ADB SAFEGATE has a proven track record of working with the GMR Group, contributing to projects in Hyderabad and New Delhi airports.

The project is expected to be completed within 12-14 months, with the airport anticipated to be operational by the end of 2025.

WBP PROFILES



ESRI

Location: United States Type of business: IT & Communications W: www.esri.com Esri offers a suite of software that integrates spatial data with airport facility management systems, planning and noise modelling systems, databases and CAD systems, weather surveillance and other satellitebased data collection systems. Esri's GIS software inherently integrates technology that supports data sharing and analysis across departmental boundaries.

OAG AVIATION WORLDWIDE

Location: Singapore Type of business: IT & Communications W: www.oaq.com In the world of global aviation, it's not only about making the right decisions; it's about making the right decisions fast. At times like these, you need the kind of high guality, up-to-the-minute aviation data that only OAG can provide. OAG has the knowledge, experience and innovative solutions to give you the most accurate and essential historic, current and future aviation data, analytics and information.

NEC CORPORATION

Location: Japan Type of business: IT & Communications W: www.nec.com For more than 50 years NEC has been a leading provider of air traffic control and airport systems in Japan and is continuously expanding its presence in the global aviation market. The company's product portfolio includes air traffic control systems and a variety of airport IT solutions, including flight information display system (FIDS), bird detection systems.



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