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Aviation provides critical relief in crises

“Each and every day airlines make an enormous positive contribution to humanity by connecting people, cultures, businesses, and economies. This fosters economic growth and social development. When disaster strikes, these links become even more critical. Everyone in aviation can be proud of the essential supplies, critical talent, and hope that planes carry to disaster-affected areas. With that in mind, we encourage all our stakeholders to join us in ensuring that aviation can fulfill this role by becoming ever more safe, secure, reliable, and sustainable.

“Airlines have shown exceptional compassion and solidarity, delivering vital supplies and aid to affected communities around the world. During crises, we bring hope, relief, and aid, striving to rebuild lives together. I am proud to be part of an industry that makes such a difference.”

Willie Walsh
IATA Director General

On the Canadian Federal Budget

“We appreciate that the Canadian Government proposes to provide $1.8 billion over five years to the Canadian Air Transport Security Authority (CATSA)... However, at the same time, it proposes to increase the Air Travellers Security Charge (ATSC) by a staggering 33%, effective next year. Consequently, the Government is making air travel even less affordable for all Canadians.”

On the court decision to halt Schiphol flight cuts

“This decision gives vital stability for this year to the airlines using Schiphol airport and maintains the choice and connectivity passengers value.”

On IATA’s Focus Africa initiative

“Africa accounts for 18% of the global population, but just 2.1% of air transport activities. Closing that gap, so that Africa can benefit from the connectivity, jobs, and growth that aviation enables is what Focus Africa is all about.”

On aviation’s 2022 safety performance

“Accidents are rare in aviation. There were five fatal accidents among 32.2 million flights in 2022. That tells us that flying is among the safest activities in which a person can engage.”
Air cargo is essential to humanitarian aid. In times of crisis or natural disaster, aviation is often the only effective transport mode capable of carrying the necessary aid, including skilled personnel. In 2023, air cargo was essential in delivering relief following the Türkiye-Syria earthquake, cyclones in Southern Africa, and providing essential goods to such places as Ukraine and Haiti.
IATA reacted positively to the decision by the Dutch court to uphold the legal challenges lodged by IATA, KLM, and other airlines against the Dutch government’s “experimental regulation” to cut Schiphol airport’s flight limit to 460,000 annually from November 2023.

“We welcome the judge’s decision. This case has been about upholding the law and international obligations. This decision gives vital stability for this year to the airlines using Schiphol airport and maintains the choice and connectivity passengers value,” IATA Director General Willie Walsh said.

What was the legal challenge about?
The Dutch government decided to reduce the number of flight movements at Schiphol from 500,000 to 440,000 per year. IATA believed no legal basis existed for this reduction: it violates international treaties and European regulations.

Governments can lower the number of flight movements to reduce noise, but only after due process. This did not occur. The Dutch government also sought to accelerate the implementation of this reduction by introducing an experimental regulation with an interim cap of 460,000 flight movements from November 1, 2023. IATA believed this was in violation of international treaties and European regulations.

What was the judge’s decision?
That the State had not followed the correct procedure in introducing the proposed temporary regulation. According to European rules, the State can only reduce the number of aircraft movements at an airport after going through a stated process. The State must consult all interested parties, and a reduction in the number of aircraft movements is only allowed if it is clear that other measures to limit noise pollution are insufficient. The Interim Injunction Judge noted the State had started that procedure for the proposed reduction of aircraft movements to 440,000 per year starting in the 2024/2025 season, but the State did not follow this procedure.

Why had the Dutch government ordered a cut in flight numbers?
The Minister for Water and Infrastructure in the coalition Dutch government is responding to the concerns of some residents who are principally concerned about noise.

What are the next steps?
While the Dutch government has indicated it will appeal the decision, attention is moving to the consultation that has begun on limiting Schiphol on a permanent basis to 440,000 flights from 2024 onwards. IATA believes that the Dutch State is again at risk of not following the Balanced Approach by proceeding from the basis that flight numbers will be reduced to 440,000, rather than starting with measuring noise and defining a noise objective. Any flight cuts can only be a last resort to achieve this noise objective, not the starting point.
“Ensuring greater international harmonization ... against unruly and disruptive passengers is a priority for the entire airline industry”

Kamil Al-Awadhi, IATA’s Regional Vice President Africa & Middle East

IATA welcomed the United Arab Emirates (UAE) ratification of the Montreal Protocol 2014 (MP14), a move that will strengthen the global legal deterrent against unruly and disruptive passenger incidents onboard flights.

“Not only will this give the UAE authorities important new powers in dealing with unruly passengers that land in the country but also, as a major aviation market and ICAO Council member, it will also encourage other States to ratify MP14. Ensuring greater international harmonisation and strengthening the legal deterrent against unruly and disruptive passengers is a priority for the entire airline industry,” said Kamil Al-Awadhi, IATA’s Regional Vice President Africa & Middle East.

Effective from May 1, 2023, authorities in the UAE will have the jurisdiction to manage unruly and disruptive passengers that land in the country, irrespective of where the aircraft is registered. This resolves an existing gap in international aviation law that often results in those accused of unruly behavior from being prosecuted for their misbehavior. In a survey, 60% of IATA member airlines cited lack of jurisdiction is a key factor for why prosecutions do not proceed.

Unruly and disruptive passenger incidents on board flights include physical assault, harassment, smoking or failing to follow crew instructions.

The UAE is the 44th State to ratify MP14 and roughly more than a third of international traffic is covered by States that are parties to it.

BLOCKED FUNDS IN PAKISTAN REDUCE AVIATION BENEFITS

Pakistan is potentially a huge aviation market, boasting a population of some 240 million. That potential is yet to be realized, however, and fewer than 11 million fly annually.

Though the country is struggling economically, the benefits of aviation are being stifled. Most obviously, as of January 2023, Pakistan had some $290 million in blocked funds, the second highest total after Nigeria.

Pakistan’s foreign exchange controls are affecting the ability of foreign firms to repatriate their funds; some airlines still have money held there from sales in 2022. Trying to get that money is a difficult and long-winded process.

Having money tied up in Pakistan affects airlines’ ability to meet payment obligations and increases the exposure to adverse foreign exchange movements.

“If conditions persist that make the economics of operation to a country unsustainable, one would expect airlines to put their valued aircraft assets to better use elsewhere,” said Philip Goh, IATA’s Regional Vice President for Asia-Pacific.

Goh believes aviation can play a bigger role in the social and economic development of Pakistan but it needs a policy environment that is conducive for growth. An IATA study in 2018 concluded that Pakistan could reach more than 35 million travelers by 2038, contributing $9.3 billion in GDP and supporting almost 800,000 jobs.

“But Pakistan is a very challenging environment for airlines to operate in,” says Goh. “The government already has a Federal Excise Duty (FED) on air tickets for premium travelers and wants to increase it further. This will just make it more expensive to travel and dampen demand for air travel.”

Pakistan could reach more than 35 million travelers by 2038, contributing $9.3 billion in GDP

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IATA called for urgent action to address the disjointed rollout of the EU’s new Pre-Loading Advance Cargo Information (PLACI) System. PLACI went live on March 1, 2023 despite 12 European States not being ready and not having given definitive information about their timelines for readiness. As a result, there is a risk of exacerbating supply chain difficulties with customs delays.

Some of Europe’s biggest air cargo hub airports are located in the 12 states that are not PLACI ready: Austria, Belgium, Croatia, Denmark, Estonia, France, Greece, Luxembourg, the Netherlands, Poland, Romania, and Sweden.

“The delayed implementation of PLACI in 12 European states must be urgently addressed. With supply chain difficulties already impacting people and businesses, the risk of increased delays for customs clearance must be avoided. It is exasperating that 12 European governments have not met the implementation timeline and have yet to provide definitive indication of when they will be ready. These states must urgently provide the necessary clarity to enable airlines to adapt their own implementation planning,” said Brendan Sullivan, IATA’s Global Head of Cargo.

The EU PLACI system is a new layer of advanced security information for air cargo shipments coming into the EU. In 2019, the timeline for implementation was adopted. With incomplete preparations in those 12 states, the air carriers must re-organize their own planning in accordance with the yet-to-be announced level of readiness of these countries.

The submission of advance cargo information enables countries to target and assess risks related to cargo shipments prior to the arrival of the shipment to the country of destination. This new layer of security is to be applied before loading shipments bound for the EU and complies with principles set by the International Civil Aviation Organization and World Customs Organization.

“Diversity creates a more integrated and productive environment”

Fabio Rogerio, CEO of Aeroportos do Brasil (ABR), the first airport association to join the 25by2025 diversity initiative

Aeroportos do Brasil joins IATA’s 25by2025

Aeroportos do Brasil (ABR), which represents 59 federal airports in Brazil and more than 90% of passengers transported, is the first airport association in the world to join IATA’s 25by2025 diversity initiative.

“Diversity creates a more integrated and productive environment,” says Fabio Rogerio, CEO of ABR. “It results in more exchanges of ideas and experiences, especially in the airport sector.”

ABR is focusing on creating an inclusive culture so that all employees feel comfortable. Rogerio says this is about listening to their needs, plans, dissatisfactions, and suggestions, so they know they are being heard. These feelings then need to be transformed into active participation and an ability to influence decision-making process.

Rogerio says that ABR already has a representative workforce, with women occupying senior positions, especially in the legal and regulatory areas. But there are areas where women are underrepresented, and ABR is encouraging more women to seek appropriate qualification and training.

Rogerio believes aviation is an attractive industry for new talent, which helps with female recruitment. As with other industries, it does not yet have enough female role models in relevant positions. “Highlighting examples where women have reached important positions or built their careers in aviation would encourage more women to join the sector,” he says.

ABR is working on the diversity issue today so the company can reap its rewards in generations to come. “We are the first airport association in the world to join because we believe in a multidisciplinary, connected sector that promotes diversity,” Rogerio concludes.

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Aeroportos do Brasil joins IATA’s 25by2025

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Air travel continues to be the safest form of long-distance transport

The industry 2022 fatality risk of 0.11 means that, on average, a person would need to take a flight every day for 25,214 years to experience a 100% fatal accident. That equates to 9,203,111 flights.

Just over 32 million flights were operated in 2022

This is an increase of 25% compared to 2021, but still 31% below the 2019 figure. The fatal accident rate improved to 0.16 per million sectors for 2022, from 0.27 per million sectors in 2021.

**Industry Accident Rate for IATA vs. Non-IATA**

IATA member airlines continued to trend lower than the industry at 0.49 accidents per million sectors versus 1.21 per million sectors for the industry as a whole.

Source: IATA Accident Update 2022

**Accidents per millions sectors**

- IATA Accident Rate
- Non-IATA Accident Rate
**Fatality Risk vs Five-Year Average**

*Over the last decade,* the risk of experiencing a 100% fatal accident has declined from 0.4 per million sectors to 0.13 per million sectors (rolling five-year average).

**Airline Industry Accident Count per Category**

*Source: IATA Accident Update 2022*

**2022**

The jet hull loss rate per million sectors in 2022 was 0.17 vs 0.13 in 2021. The turboprop hull loss rate per million sectors in 2022 was 1.47 vs. 1.77 in 2021.

**All Accident Rate per Region of Operator:** Four regions witnessed an increase in the accident rate per million sectors 2022 vs five year 2018-22 average.

*Source: IATA Economics*

---

**European Fatality**

- **Commonwealth of Independent States:** 2.16 (2018-22: 4.14)
- **North America:** 0.74 (2018-22: 1.18)
- **Latin America:** 4.07 (2018-22: 2.24)
- **MENA:** 0.65 (2018-22: 0.87)
- **North Asia:** 0.45 (2018-22: 0.22)
- **Asia Pacific:** 0.56 (2018-22: 1.25)
- **Africa:** 8.70 (2018-22: 5.68)

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Revenue management is yesterday’s model. The modern airline industry must move to total revenue optimization, including inline and connected offer and order to meet customer demand and expectations.

“Airlines think this development is still years away,” says Alex Mans, FLYR Labs Founder and CEO. “But it is available today. Any airline can support the offer-order environment with minimal investment with the right partner.”

With legacy systems, airlines are limited not only in what they sell but also in how they sell it. Incorporating dynamically priced ancillaries, hotel or travel insurance can take months to integrate into existing systems and require manual oversight. Usually, airlines are confined by the possibilities of their own website or limited distribution channels.

These restrictions, imposed by legacy systems, are mirrored on the order side. Using the traditional passenger service system (PSS) makes it difficult to fulfill ancillary orders. The dissociation between airline departments and systems means unbundling the journey elements is nearly impossible.

Leading the transition—the FLYR platform

“The challenge is how to get airline offer and order fulfillment on a par with leaders in this field, such as Amazon,” says Mans.

“The IATA One Order initiative will help, and shows airlines where they need to go, but they still have to make the journey.”

FLYR has invested in best-in-class technology to lead this transition. It acquired Barcelona-based Newshore and Germany’s Pribas to supplement its own expertise in revenue optimization.

With the FLYR platform, a legacy PSS can initially remain unaffected. Rather, a shadow system is created on which other new systems can be built. Although the legacy PSS functions as normal, the airline is immediately immersed in the offer-order environment, allowing it to sell what it wants to sell and then fulfill its orders.

“In the legacy world, you have to support the front and back ends and that is what FLYR does,” explains Mans. “With our platform, an airline can immediately sell an interline with another airline or rail company or offer a hotel and vacation activity. There is a single order for the customer because it is all included within the airline booking and a single reference point for order fulfillment.”

FLYR’s solution integrates all available data, structures it, and runs constant checks to ensure it can be trusted. The data can be sliced and diced as required.
would understand the context and might temper the response.”

Similarly, humans would better understand how to explore market potential through different price points.

If the infrastructure is built correctly, however, the AI will always have access to all information. And no human can keep up with the amount of data generated by an airline. AI can recognize trends or customer traits instantly and make an appropriate offer.

“And it continually learns,” Mans points out. “It will understand human-set parameters and incorporate them into its algorithm.”

Ultimately, with offer-order systems implemented, about 95% of bookings will be made at a price point suggested by AI. The remaining 5% will have been at prices directly influenced by analysts.

“Airlines have operated on low margins forever,” concludes Mans. “Ancillaries offer good margins and would make a major difference if offered correctly. Moreover, airlines would become trusted travel brands. With offer-order, they will establish a one-to-one relationship with the customer and become a platform for selling far more than a flight.

“This is a game-changer for the industry, and it is ready to go.”

For more information about FLYR’s commercial operating system, visit flyrlabs.com
“For an **improved digital experience**, we invest in products and tools that make **every stage of the journey** easier, better, and seamless”
The value of digitization

Mehmet T. Nane, Chairperson of the Board of Directors, Pegasus Airlines and Chair, IATA Board of Governors, believes technology benefits are wide ranging.

From providing humanitarian flights and support from the very start of the February earthquake to the future digital strategy of the airline, Pegasus Airlines’ Chairperson of the Board of Directors Mehmet T. Nane says there are many challenges and opportunities ahead for Türkiye and Pegasus.

Tell us how you helped following the devastating earthquake in February?
We are experiencing challenging times as a country. The pain we felt in the aftermath of the earthquake catastrophe on February 6 is still fresh. I would like to again commemorate those who lost their lives—may they rest in peace—and wish a swift recovery to the injured. As a nation and as a company, we believe in the importance of solidarity to overcome these difficult days and to heal. Our primary task is to support those affected by the earthquake in the fastest and most effective way possible, and to sustain this support on a long-term basis.

Pegasus Airlines worked diligently from day one of the earthquake. We operated domestic flights from Adana, Adıyaman, Diyarbakır, Elazığ, Gaziantep, Malatya, Kahramanmaraş, Şanlıurfa and Hatay free of charge between February 7-28, 2023 for those affected by the earthquake. We started flying to Hatay on February 12 after the runway was repaired.
Between February 6-28, we evacuated 152,950 people from the earthquake zones with 785 free evacuation flights. During these flights, we carried 110 tonnes of aid materials free of charge. We carried 126,926 people and rescue teams on flights to the disaster zone. As well as continuing our transportation support, we also supported citizens affected by the earthquake with financial aid.

During this period, we also took the decision to support the Federation of Women’s Associations of Türkiye Purple Campus project. The Purple Campus project aims to improve the conditions of women, children, and people in need of geriatric care and disabled individuals in the earthquake zone, creating safe spaces by providing their most basic needs. Pegasus will also contribute air transport. I sincerely believe that as contributions to the Purple Campus project increase, we will make a difference to the lives of those affected by the earthquake.
What are the main challenges and opportunities for aviation in Türkiye?
Türkiye has historically been a prominent travel destination for travelers from Europe and Central Asia, including travelers from the Middle East in the past decade.

Large numbers of visitors travel for sun, sand, and sea tourism, but we are seeing high growth rates in the health, educational, and cultural tourism segments. Türkiye will continue to attract these various types of visitors as the country offers good value for money as well as its unique natural, cultural, gastronomic, and historic attractions, for example.

There is also a large Turkish population living in Europe who frequently travel to Türkiye to visit relatives and friends, which brings a certain resilience to overall inbound travel demand.
Moreover, it is worth mentioning that Türkiye is at the crossroads of Europe, Asia, and Africa, offering the best point for transit travelers who need to switch flights while travelling between the continents. So, opportunities are plentiful.

The key challenge is the vulnerability of travel demand to such factors as a slowdown in economic activity, a decline in the disposable income levels of travelers, negative geopolitical developments, and any future pandemics.

What advantages do you see in expanding so rapidly?
Our operating region spans Europe, the Middle East, North Africa, and Central Asia, and we see a significant growth potential both in the total market and in the demand for low-cost carriers.

Our fleet and network investments are dedicated to stimulating diversified growth across these regions while focusing on contribution to the network value. We currently have the lowest unit cost in the world, and we have a sizeable fleet growth in the pipeline to over 120 aircraft in 2025 from 96 in 2022. When the deliveries are complete, we plan for our fleet to consist solely of next generation A320neo and A321neo aircraft, which will further support our efficiency. This will also contribute to our sustainability commitments and help us maintain our leading position in cost metrics.

Has customer behavior changed since the pandemic or has the market simply picked up where we left off in 2020?
The major difference we see post-pandemic is the booking window. The difference between booking and flight date has shortened since people are more likely to make last-minute bookings due to the ambiguity brought on by travel restrictions during pandemic. This previously periodic behavior has turned into a long-term shift. The business travel segment has been the slowest to recover.

We’ve also seen a rapid shift to travelling with minimum contact. At Pegasus we’ve invested in unique innovations in this regard, and our guests can utilise our digital solutions for check-in, baggage drop and boarding processes with reduced contact. Turkish nationals on domestic flights can also check-in online before the flight and board without contact using their ID card with a chip at the gate.

There’s also more emphasis on digital channels. One demographic that stands out when we talk about digital is, of course, Gen Z. This new generation of travelers looks for brands that offer tailored discounts and promotions, value for money products and services, and care about sustainability when making purchasing decisions. As such, as well as our overall digitalisation, we aim to tailor certain
Can you tell us about your digitization strategy?

At the start of 2022, we launched a new initiative to take our digitization journey to the next level. Our digital strategy for our guests is based on five pillars: improved digital experience, user experience, search engine marketing (SEM), search engine optimization, and personalized digital experience.

For an improved digital experience, we invest in products and tools that make every stage of the journey easier, better, and seamless. User experience is focusing on web and app redesign, and an app-like mobile website. We are also focusing on a personalized SEM and dynamic data usage.

It is important to focus on sustainable traffic to our web and app. To do this we are creating content in different local languages, such as German and French, including an English blog and an Arabic language website. We also focus on continuous optimization of our customer journey and personalized booking funnels, targeted banners, and content.

What criteria do you use to evaluate new technology?

We conduct a cost-benefit analysis. On the value side, we score parameters including revenue, savings, company image, and regulation. On the cost side, we add the projected cost for the investment.

Technology investments may not always reduce operational costs and we consider other factors when investing for the long-term growth and sustainability of the business. It is important that the guest has an easy and seamless travel experience and that we can offer low fares.

Moreover, technology is an important factor in driving the sustainability of our industry as part of our commitment to net zero by 2050, and this is also a vital part of our decision-making process. Some of our projects may be in research and development where the benefits are longer term.

It is also important to offer an easy work experience for Pegasus employees. We will continue to invest in these areas to utilize all the possibilities of technology.

How can an airline take better advantage of the data it is producing?

Airlines have an e-commerce structure, and a wide range of operational units, from ground handling to technical teams, from flight crews to safety. To offer a good travel experience, the entire operation needs to work in harmony. It is crucial to use generated data to analyze and evaluate. Utilizing artificial intelligence (AI) offers many value-added possibilities, such as using AI to determine the catering that will be loaded onto the aircraft and reduce waste.

We benefit from the data generated in all projects involving providing low fares for guests and enhancing the entire travel experience.

Has the experience as IATA Chair been a good one? In what areas has progress been made?

It has been an honor to serve as IATA’s Chair of the Board, especially at a time when the industry was emerging from its worst downturn. It has certainly been a busy year and as we have continued to rebuild global connectivity at great pace, we have been addressing such priorities as sustainability, diversity, regulation, operational challenges, and infrastructure costs.

Diversity and broadening IATA membership has been a strong focus and 2022 was a particularly important year as we achieved the milestone of 50% of IATA members joining the 25by2025 voluntary initiative, driving a more diverse and inclusive aviation industry particularly regarding female representation.

We are witnessing real change. Last year alone at least five female CEOs have been appointed. As of April 2023, we have 19 female CEOs among 25by2025 signatories and 24 female CEOs among all IATA members.

Between February 6 and 28, 2023 we evacuated 152,950 people from the earthquake zones with 785 free evacuation flights.
Centralny Port Komunikacyjny (CPK) is set to build a state-of-the-art airport hub from scratch, promising a seamless and enjoyable passenger experience.

Drawing on the proven success of the world’s leading airports, CPK is dedicated to delivering the highest standards of services from the outset of a traveler’s journey. This innovative greenfield project offers a significant advantage over established airports, as CPK has the unique opportunity to design and implement a cutting-edge airport interior layout that prioritizes the passenger experience. Additionally, modern retail channels and technology will be seamlessly integrated to enhance and support all operations.

Overall, CPK’s new airport hub promises to revolutionize air travel, providing a world-class gateway for travelers from around the globe no matter what their requirements.

Multimodal experience
Since the passenger experience begins much earlier than the airport entrance, the CPK project aims to ensure easy airport access, being both a destination and an attractive transfer location where all transport modes meet. The aim is to provide a true multimodal passenger journey, giving customers choice and improving sustainability.

CPK intends to focus on providing its passengers with a pleasant ambience created by natural lighting, green spaces, and services and amenities that focus on

To support a positive passenger experience, CPK aims to introduce digital signs, biometric solutions, mobile applications, information kiosks, and smart shopping opportunities.

ENHANCING THE PASSENGER EXPERIENCE AT CPK
Poland’s new airport will encompass a wide range of innovation to appeal to a diversity of customers.
the unique needs of the traveler. This will all be underpinned by a human touch created by a professional and hospitable staff.

Good wayfinding also reduces passenger stress and therefore, to enhance the experience, CPK intends to implement process-oriented shapes and structures within its buildings that promote natural wayfinding. Another aspect will be minimizing the number of level and direction changes, as well as the walking distances. To support this, CPK plans to implement clear signage systems, with moving walkways and services to assist those passengers with health conditions or other impairments.

As different types of travelers have different needs, CPK aims to provide an infrastructure that addresses all possible requirements and concerns, including dedicated security control lanes for passengers with disabilities and their families, children's play areas and nursing stations, quiet zones, pet relief areas, workspaces, prayer rooms, and VIP services with business lounges.

**Optimization**

Technology is playing an increasingly vital role in modern travel, and CPK will therefore ensure it is at the heart of the passenger journey and make it one of the key components in the gateway's construction. To support a positive passenger experience, for example, CPK aims to introduce digital signs, biometric solutions, mobile applications, information kiosks, Wi-Fi infrastructure, and smart shopping opportunities.

The use of different kinds of systems should allow an optimized queuing time, not to mention light and temperature control, which will facilitate the passenger experience, and make the journey through the airport as seamless and pleasant as possible.

**For more information on the new transport hub:**
Rising above and beyond

Dina Ben Tal Ganancia, CEO, EL AL, outlines the carrier’s strategy in a challenging region. Graham Newton reports.

EL AL’s first female CEO, Dina Ben Tal Ganancia believes diversity is not just about gender, as the airline mirrors the different races, religions, and cultures in its home country Israel—and such diversity adds to the success of EL AL.

What were the reasons behind your return to profitability?
I became CEO of the airline in May 2022, and it was clear that in the post-COVID era we needed to change.

Our Restart Program has three main elements. The first is improving the company’s spirit and culture. We lost a lot of people during COVID and had a new management team, including me. I had worked at EL AL for many years and was experienced in a number of areas, but human resources was new to me.

A key focus was convincing the pilots that we needed a fresh start. That was hard work but eventually we negotiated an agreement that’s in place until 2025. That agreement gave us some stability and enabled us to do a similar deal with the 2,000-strong maintenance and engineering division. It wasn’t easy but it followed on from the pilot agreement and we started earning the trust of our people. We then put in place deals with the administrative staff and cabin crew.

The second element of our Restart Program is financial stability. When your assets are on the ground and not in the air you lose millions of dollars every month. We had to make arrangements with lessors and banks, and we managed to access a $130 million loan at 5%-7% interest to help cash flow. And, of course, demand came back much quicker than expected, which has helped enormously.

The third and final is winning back the trust of our customers. We didn’t take that for granted. At the beginning of the pandemic, we had to make a lot of repayments for cancelled flights and that was difficult. But we have worked hard to get customers to trust us again and we’ve done a lot to improve our customer offering. We’ve spent a lot on updating the interior of our cabins, for example.

“Our region is always a challenge. There is always something happening, and we must always manage the risk”
Overall, the program has worked for us. It has won us some awards and returned us to profitability. That has given us the confidence to improve even further.

**What are your fleet and network plans?**
My passion is strategy. So even though the Restart Program was working I wanted to think further ahead, and we came up with a five-year plan known as “Rising Above and Beyond.”

The fleet and network are an important part of this strategy. Our most important routes are to the United States and there are four big airlines involved in the market. Even so, every third person at Ben Gurion International Airport flying to the United States is doing so on EL AL. We have to maintain that level and grow from there. We also face stronger regional competition now.

The plan is to have a fleet of almost 60 aircraft and most of it will be new or at least in line for replacement. On widebodies, we have 15 Boeing 787s with another one coming in July 2023. We want to have 22 787s by 2028 if possible. And our four Boeing 777s are all being retrofitted to align with the Dreamliner experience.

As for narrowbodies, we are looking at their replacement right now and will decide by the end of the year. We’re looking at getting about 30 aircraft, up from 24 at present.

We have recently launched Tokyo and Dublin services and are looking seriously at Australia and the Philippines. We won’t neglect the United States either and will increase frequencies there. We might even consider returning to Latin America within the five-year plan.

Europe will be about responding faster to the market. We’re already doing that, and we are seeing a positive customer response.

**Will cargo become more important to your strategy?**
As with most airlines, cargo was essential to our survival during COVID. At one stage during the pandemic, Israel was short of eggs, and we were flying them in on business class seats!

We learned a lot about risk management and it is clear that cargo needs to be part of our portfolio going forward. This is not yet a mature sector for us, but we have a converted 737 freighter now and we are also doing charter cargo flights.

**What are the other elements of the strategy?**
One of the most important changes we are making is to our brand. We are using new colours on the logo for a fresh look. People want to see that vitality and again we have had a great response from customer focus groups.

We’ll do a campaign to show off this new brand. We are also investing in a simulator in Israel to overcome any shortfalls in training and we’re becoming more involved in tourism activities too. Overall, the aim is to get 10% of revenues from new sources.
We need to increase productivity, improve our time to market, forge stronger partnerships, and leverage our frequent flyer program (FFP). We have some 2.5 million members in our FFP, about 2 million of which are Israelis. That’s a great platform and a massive amount of data. Making good use of that data will ultimately be seen in our profit and loss balance sheet.

**Have the Abraham Accords affected the airline?**

Definitely. They have brought opportunities but also some challenges as we have new, strong competition. But our mission is to connect Israel to the world and the Accords help open up the country for business. We will benefit from that.

It’s also important that we now have overflight permission for Saudi Arabia and the Sultanate of Oman. It opens up the potential for routes to southeast Asia and Australia. And it means we can go to Mumbai with a Boeing 737. That is affecting our network in a positive way.

**What do you consider to be the main challenges and opportunities for aviation in your region?**

Our region is always a challenge. There is always something happening, and we must always manage the risk. But we are experienced in these matters and can do what is necessary.

But there are opportunities too in a number of areas. We could cooperate with our neighbors in logistics and maintenance, for example.

**Do you believe in the industry’s digital transformation?**

EL AL is leading the way in many paperless processes. We are eradicating paper wherever possible. Going forward, nearly everything is about technology, and it is important part of our strategy. We’re working with airframe and engine manufacturers to get the very best technology put on our aircraft and I believe in the ability of artificial intelligence in the cabin and throughout operations.

As I mentioned, we have to be more productive, and a digital transformation is the best way to achieve that.

**Are you confident the industry will achieve net-zero carbon emissions?**

Part of the reason we are going for a younger fleet is improved fuel burn, which means fewer emissions. And we are working with all relevant stakeholders to get us to the net-zero target.

We can’t do all the work and bear all the cost alone. We need the support of the aviation chain and that includes governments. They have to incentivize the production and use of sustainable aviation fuels (SAF) to make them affordable.

And when we talk about sustainability, we can’t forget the other environmental, social, and governance (ESG) requirements either. They will become increasingly important.

Basically, there is no other way forward. Every airline must be sustainable and the industry has to become net zero.

**Is diversity important?**

EL AL has already made a big statement about this because I am the CEO! In all honesty, I never felt that my gender was an issue. I was an officer in the Israeli air force at a young age and so had confidence in myself. I was professional and patient and I think the latter is a quality that women have more than men.

I do want to encourage the next generation of female leaders and I’d especially like to see more women pilots at EL AL. We have six at the moment, but we recruit largely from the air force, so we need the military to help us. We are doing more with civil training though and that is becoming an important focus.

But diversity is not just about gender. It is about different races, religions, and cultures. In that respect, EL AL is like as mini version of Israel because we are extremely diverse. It may not be the perception but there is a lot of diversity in our airline and in the country and we are very proud of that.
Block Aero offers a peer-to-peer collaboration platform to solve problems in aviation asset management. Fragmented aviation data is transformed into frictionless digital assets through blockchain technology.

“Blockchain is a technology for today not tomorrow,” says Todd Siena, CEO, Block Aero. “Airlines and aviation companies can’t be left behind. The supply chain is already changing and blockchain is an opportunity to maximize assets. It will save costs, improve risk management, and gain early adopters a competitive advantage through innovation leadership.”

Blockchain solutions are not part of an airline’s core business, making partnering with companies such as Block Aero essential. Siena likens it to the change from fax to email, which drastically transformed communication and information sharing. Companies that continued with fax were soon struggling to compete. Now, email’s weaknesses—such as failures in storage and the ability to manipulate content—are being revealed for some business processes, and blockchain is set to take over.

Blockchain is a distributed ledger, where certificates and reports are never lost and can be easily audited when required. All changes are recorded, incorruptible, and always available to those with the necessary authorization. This trustworthy dataset adds considerable resale value to an asset, replacing the endless rows of Excel spreadsheets and the considerable time and resources needed to compile static reports.

**Reliable, profitable assets**

Block Aero’s recent partnership with global logistics giant Kuehne+Nagel points the way forward. The aim is to convert underutilized equipment into reliable and profitable assets. Manufacturers, maintenance, repair and overhaul companies, operators, and lessors are able to share real-time availability and demand signals with other participants in a private-permissioned ecosystem. As an example, an engine stand is effectively transformed into a smart stand, and treated as an individual asset that is traceable, reliable, and profitable.

Through Block Aero’s technology, each stand has an immutable record with important event data, optimizing trust, safety, and accessibility.

Block Aero and Kuehne+Nagel expect to collaborate with more organizations that can bundle value-added services into an Engine Stand Global Pooling Program, including financing, maintenance, trading, and asset management.

“Blockchain is a technology for today not tomorrow,” says Todd Siena, CEO, Block Aero. “Airlines and aviation companies can’t be left behind. The supply chain is already changing and blockchain is an opportunity to maximize assets. It will save costs, improve risk management, and gain early adopters a competitive advantage through innovation leadership.”
A distributed ledger system provides total accountability. Regulators in this area are actively investigating how to get aviation companies to adopt blockchain faster. To continue its active role in this process, Block Aero renewed its memorandum of understanding with ICAO that will see the company bring blockchain technology to regulators that have fewer resources and oversight capabilities.

Siena even suspects blockchain will become mandatory in time and part of the ICAO standards and recommended practices (SARPs). He notes that his company’s involvement in the sustainability sector has had an additional benefit. Block Aero has been able to act as a catalyst in introducing venture capitalists to companies involved in sustainable aviation fuel production facilities. “There has been excellent crossover and networking that will benefit aviation in the long run,” Siena adds.

Aircraft recycling is another key area that will benefit from blockchain implementation. Block Aero is working with Japan Airlines to help recycle a greater percentage of the aircraft by digitally tagging every aircraft part and giving it a verifiable identity. Treating parts as an asset not only helps resell recyclable material but also generates offset certificates. Every kilogram recycled represents a carbon saving, especially in some composite materials, which can be carbon intensive.

“Ultimately, blockchain will affect every aspect of aviation,” concludes Siena. “Pretty much all the innovation in the industry involves data sharing. When people start talking about artificial intelligence, for example, they are basically talking about sharing huge swathes of data. And anything that involves data sharing involves blockchain. “It is a safe, transparent, and fundamental technology that finally overturns the silo thinking of the past.”

For more on how Block Aero can help your business, email support@block.aero

Todd Siena, CEO, Block Aero Technologies

Block Aero estimates that many stand owners will be able to generate from $1 million-$10 million of cash flow in the short-term by onboarding assets to the global pool and leveraging the program’s sale and lease-back offerings,” says Siena.

Sustainability
Blockchain also has an important role to play in aviation’s commitment to achieve net-zero carbon emissions by 2050. Ensuring integrity and traceability in various sustainability initiatives will be vital for compliance with many of the greenhouse gas schemes and accountability boards.

“At the airline level, it is policy rather than technical skills that is the issue with sustainability,” says Siena. “Airlines are just starting out on this journey, and they are unsure how to reach compliance because it is a new area for them. Blockchain will be vital to show a transparent record of offsets for compliance and airline marketing purposes.”

Airlines need diverse programs that will work seamlessly with the Carbon Offsetting Reduction Scheme for International Aviation (CORSIA) but also create meaningful ties between green projects and specific routes. Blockchain technology can achieve this and help prevent greenwashing accusations—where companies claim to be more environmentally friendly than they really are.
Logistical excellence in delivering aid
When the Türkiye-Syria earthquake hit early in 2023, Airlink immediately sprang into action. The first of 200 responders—a search and rescue team—arrived within 48 hours.

“That team saved lives and provided over 3,000 hours of help,” says Steven Smith, President and CEO, Airlink. “And that was just one of 21 non-governmental organizations (NGOs) that are assisting with our response. We have also delivered tents from Pakistan, for example, and water purification equipment, which is so important in disaster areas. In all, we have sent 950 tons of aid and have another 800 tons of aid already lined up.”

Airlink is also involved in supporting families in Ukraine and combating cholera in Haiti. The Caribbean nation’s ports are closed and so aviation is the only way to get vital medicines and equipment into the country. Other recent work includes providing aid following cyclones in New Zealand and southern Africa.

“We don’t want Airlink to be the industry’s best kept secret,” says Smith. “We are a perfect environmental, social and governance (ESG) partner and we want more airlines to get involved.”

**Unique position**

Airlink enjoys a unique position within the aviation community, bringing together a network of partners to practically deliver humanitarian aid in times of crisis.

With one foot in the commercial aviation sector and the other in the philanthropic sector, Airlink allows airlines to be involved in delivering aid in the most efficient way possible.

**Airlink** wants to engage with more airlines as it expands its humanitarian efforts.

WORDS: GRAHAM NEWTON
Approximately 73% of the cost of any aid program is in supply chain management, and transport is the biggest and most volatile component. Airlink uses existing capacity within its partner airline networks wherever possible, reducing cost and carbon emissions by largely avoiding specially chartered flights. Airlink also uses road and maritime transport where it is practical or necessary to do so.

There are some 50 airlines partners to date. Some have entered into multi-year agreements, committing to a certain amount of cargo space or seats over a specified period. Others are more ad-hoc in their approach, committing to assist Airlink as the need arises. Airlink also buys cargo space—sometimes at heavily discounted rates—making cash donations equally important.

“Airlines are always approached for aid, but the key difference is that Airlink has already done the vetting of NGO partners, for example in healthcare provision, and has established relationships,” says Smith. “It means aviation as an industry can respond quickly and decisively.”

Airlink’s expertise is invaluable. Incredibly, studies show that 60% of aid sent isn’t necessary. Children’s toys or clothes often get sent when they aren’t needed. And these donations all need to be sorted by size, type, and so forth. This causes bottlenecks in the system and prevents vital food and medicines getting to the destination quickly. Often, these well-intended but unnecessary goods end up getting destroyed at the host nation’s expense.

“Airlink ensures the right aid is delivered to the right places at the right time. That is a big win for airlines as they are not wasting resources and a big win for those in need as they get support where it is needed.”

Improving the response
Airlink’s network of 50 airline partners is good but not enough to ensure global coverage. Expansion in Asia-Pacific, a diverse region full of island chains that can only be served quickly by air bridges, is the immediate priority.

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Airlink recently installed a representative in Singapore to build partnerships in the region. Airlink is seeking more involvement from airlines serving sub-Saharan Africa too. There are extended famines and ongoing food insecurity issues, which have not grabbed international headlines.

Ideally, as many airlines as possible would commit to upfront to tickets or cargo space over a multi-year period. This allows Airlink to plan its aid response, which is possible given the cyclical nature of some disasters. Hurricanes or cyclones hit at certain times of year in certain areas. The same goes for wildﬁres in Australia or California, or ﬂooding in Canada.

“If we know our resources, we can plan and so can our NGO partners, for example around cyclical weather events like Atlantic Hurricane Season,” concludes Smith. “But any involvement is welcomed. Cash donations are always vital too.

“I urge airlines to follow us online, post our content,” he adds. “Being engaged with us helps us grow and allows us to speak to more people. That way, we can focus industry efforts to efficiently and effectively support the most vulnerable communities in their times of need.”

We have sent 950 tons of aid and have another 800 tons of aid already lined up. We have also delivered tents from Pakistan and water purification equipment.
Pratt & Whitney answers the call for ever more sustainable and efficient engines
What were the major industry lessons learned from the pandemic?
The onset of the COVID-19 pandemic in early 2020 was unlike anything the industry has ever experienced. From the significant and sustained drop in demand to the rebound starting in late 2022, it has been challenging for all aspects of the industry. Pratt & Whitney was ramping up GTF production to meet the high demand for A320neo, A220, and E2 family aircraft, when we had to quickly pivot. Throughout this entire period, we prioritized our people, our customers and our supply base. We implemented guidelines, procedures and technology to protect our on-site workforce and embraced remote work for those who could. To support our customers, we leveraged the drop in demand to help expedite upgrades for the flying fleet. And for our supply chain, we advanced payments to many suppliers to keep their businesses running, and we placed our experts at some of our suppliers to help find efficiencies.

With the hindsight of 2023, we know we must continue to work to harden our supply chain, with an emphasis on maintaining the skilled labor force that keeps our industry strong and resilient. Doing so is a two-way street – we need suppliers to invest in the people and technology to unlock capacity and we need to be active partners to ensure they understand fully what the future demand is.

Is there a new normal or do you see pre-COVID patterns and trends resuming?
There is a new normal in the industry related to sustainable aviation. Airlines, airports, and the OEMs are keenly focused on reducing our environmental footprint. What’s good for the planet is also good for business, with engine efficiency ever improving, resulting in a lower fuel bill per flight. Despite the economic hit from the pandemic, aircraft and engine makers are investing in next-gen technology to advance fuel efficiency even further.

At Pratt & Whitney, we are looking at every sector of commercial aviation. Hybrid-electric looks especially promising for regional aviation, connecting tertiary markets to business centers or hubs. For single-aisle aircraft, continued improvements in both propulsive and thermal efficiencies, led by the GTF engine, will create new market opportunities for airlines around the world.
How are you incorporating industry 4.0?
Pratt & Whitney celebrated the ribbon cutting of our Asheville, N.C. facility in November 2022. The 1.2 million square foot facility incorporates Industry 4.0 standards, featuring highly automated manufacturing to improve safety, quality, productivity, and cost in support of high-volume programs, including our GTF and F135 engines, for decades to come.

As part of our Industry 4.0 strategy, we connected approximately 50% of our total machines by the end of 2022 and are on track to connect 100% of our equipment by 2025 (100% OEM machines by 2024), which allows for insights-driven decision making on the shop floor.

Are you confident you can recruit the talent necessary to continue the company’s success?
We believe we have a very compelling value proposition for people looking to join our team. Pratt & Whitney is a well-established, innovative company, and our mission—to connect people, grow economies, and help protect freedom—has never been more important. A Pratt & Whitney-powered aircraft takes off or lands every second of the day. What we do, by enabling flight around the world, truly matters.

And once you join Pratt & Whitney, your voice matters. We are transforming our culture by changing how we work and empowering employees to contribute to solving difficult challenges in a creative and collaborative way. We also invest in career development opportunities, including formal leadership and learning programs as well as the Employee Scholar Program, one of the

What is your overall strategy to better serve the airlines?
Pratt & Whitney is prioritizing on-time delivery for our customers. We are making progress, but we are not where we need to be. This is our near-term priority—to get back on track to meeting customers’ needs.

Longer term, we will continue to improve GTF engine durability, especially in harsh environments, with upgrades to specific components. Although the engine delivers industry-leading fuel efficiency, we need to extend time on wing.

Finally, we are supporting airlines reach their goal of net zero carbon emissions. We are ensuring our engines are ready to operate with sustainable aviation fuel (SAF) as we continue to drive toward ever better fuel efficiency with advanced technologies like hybrid-electric and hydrogen fueled propulsion. These are part of our longer-term roadmap for powering sustainable aviation, and we are making great progress.

How are you dealing with supply-chain issues?
Pratt & Whitney, as part of Raytheon Technologies, took a proactive approach with our key suppliers. It’s worth noting that many of our suppliers are small businesses and were highly exposed to aviation’s downturn. We advanced payments to many suppliers to keep their businesses running, and we placed our experts at some suppliers to help find efficiencies.

“We’re good for the planet is also good for business, with engine efficiency ever improving, resulting in a lower fuel bill per flight”
most comprehensive company-sponsored employee education programs in the world.

We are committed to ensuring inclusive workplaces and equitable opportunities, with particular focus on diverse hiring and retention in engineering, line leadership, and manufacturing roles. As an example, our goals include achieving gender parity in leadership by 2030. Internal programs like WILL Rise to develop women in line leadership and Re-Empower to bring people back into the workforce after a career break are just a few of the investments we’re making.

Overall, where do you see opportunities and challenges in the next decade?
The greatest near-term opportunity for the industry is the development and certification of affordable 100% SAF and ensuring the infrastructure can handle the demand. Increasing the use of SAF is the critical enabler to significantly lower carbon emissions and help reduce our dependence on fossil fuels. The challenge is developing the right fuel without impacting food stocks, and creating the marketplace to make SAF price competitive with Jet A.

“We believe we have a very compelling value proposition for people looking to join our team ... What we do, by enabling flight around the world, truly matters”

The greatest opportunity for Pratt & Whitney in the next decade, as we celebrate our 100th anniversary in 2025, is to cultivate new business practices that empower for speed, unleash the creativity of our people, and continue to find solutions for customers. Digitization, model-based engineering, automation, and AI are still in their early days for advanced manufacturing; the next decade will see a big shift to these and other tools.

What technologies excite you and are there any red herrings?
The introduction of the GTF engine in 2016 changed the game. The gear allows the turbine and fan to spin at their optimum speeds. It had never been done before on this scale in the commercial space.

And while we are still in early days of developing new technologies such as hybrid electric, I believe this technology will have a similar impact on the regional aviation market, and we are also looking to demonstrate its potential on larger scale GTF engines for single-aisle aircraft. As battery technology continues to advance, efficiency benefits of hybrid-electric systems will only increase.

One area in its early stages is hydrogen. We know this fuel can be readily burned in gas turbine engine producing zero carbon emissions, but there are clearly significant challenges with adapting aircraft and ground infrastructure to handle this fuel, and we need to assess the environmental impact of increased water vapor emissions.

We will continue to invest in the potential of this technology. Combined with the work we’re doing to increase the efficiency of today’s jet engines, and increasing the use of SAF, all these improvements to propulsion systems get us closer to our goal of achieving net-zero carbon emissions for civil aviation by 2050.
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Improvements in the supply chain must underpin constant progress in engine performance.

The industry recovery is almost complete, in most cases well ahead of schedule. “Demand is strong with no signs of letting up, especially in the high growth single aisle segment,” says Rick Deurloo, President of Commercial Engines at Pratt & Whitney. “We’re on the right platforms; they complement each other, with the high and the low end of that narrowbody range. The coupling of these new generation fleets has been a real game-changer for airlines.”

However, the accelerated growth brings its own set of challenges. Most obviously, the disrupted supply chain is struggling to meet demand, affecting airlines across the board. “The tension in the supply chain and delivery streams in recent years is well documented. The good news is we are now starting to see improvements with year over year double-digit increases in supply chain output.”

In the seven years since GTF deliveries started, Pratt & Whitney has supplied some 3,000 engines to more than 1,500 aircraft. The scale of this production rate is more than double that of the V2500 engine, of which around 7,000 engines have been delivered by International Aero Engines over its 40-year history.

The challenge, says Deurloo, is balancing the need for new engines with servicing those already in use. There is huge pressure on OEMs to meet the delivery schedule for new aircraft but there is a need to service the existing fleet to ensure aircraft availability. “You have to ensure you have the materials for maintenance, repair and overhaul (MRO),” he says.

Pratt & Whitney is expanding its MRO capability. There are now 12 GTF MRO network facilities globally and a further seven opening in the coming years. In the past 12 months, Pratt & Whitney welcomed Iberia Maintenance and Air France Industries KLM Engineering & Maintenance to the network, announced the first PW1100G-JM induction at MHIael (Mitsubishi Heavy Industries Aero Engines Ltd) in Japan, and celebrated the expansion of Delta TechOps and its first PW1500G induction.

“Our footprint in this sector is getting larger every day,” says Deurloo. “It’s all about dialog and continuing to increase the supply of parts.”

Lessons learned
Pratt & Whitney is also focused on improving the durability of the GTF. The fuel efficiency of the engine is unquestioned. The engine has logged some 20 million flight hours and is delivering on its anticipated 16% to 20% fuel and carbon savings. In fact, some 1 billion gallons of fuel and 10 million metric tons of carbon emissions have been saved since the engine entered service. That suggests enormous financial and sustainability improvements for airlines.

The aim, therefore, is to improve time on wing so airlines can maximize the potential of these industry-leading engines. “You have to work maturity into the engines,” says Deurloo. “The program has all the investment and research it needs to get there. You learn over time, and you build those findings back into the engine.”

Part of that learning curve is the next generation GTF Advantage. The new technology will provide additional thrust, fuel savings, and durability. It is being tested to unprecedented levels.

“It has been flight tested with Airbus and will make a fantastic combination with the Airbus A321XLR,” says Deurloo. “We’re
doing everything we can to ensure this engine arrives in a good place. One of our key enhancements has been a new turbine blade design. We want to bring that to the base engine. And it’s just one example.”

**Propulsion outlook**

Work on the GTF Advantage is just the first step on the long road to future propulsion systems that will fulfill aviation’s commitment to net-zero carbon emissions by 2050. Pratt & Whitney is active at every stage of the journey.

“Sustainable aviation fuels (SAF) are the driver in the near term,” says Deurloo. “They are plug and play. All our engines are certified for up to 50% blend and they will be certified for 100% SAF in due course.” SAF will provide the space for other new technologies to be perfected and practically applied to the industry. The geared architecture, which is scalable, will be the foundation for next generation platforms.

“Ultimately, we will move to hybrid-electric and/or hydrogen power,” says Deurloo. “I’m not sure what size aircraft electric will get to, but it will play a part and the challenges with hydrogen can probably be overcome. We will continue collaborating with all partners to find new efficiencies.

“Big goals need big thinking and big investment. We bring both to the table. Pratt & Whitney is totally committed to partnering with airlines to reach net-zero.”

**IAE 40th anniversary**

This year the Pratt & Whitney–lead consortium, IAE (International Aero Engines AG), is celebrating the 40th anniversary since its founding. Its V2500 engine currently powers the Airbus A320ceo family and the Embraer C-390 Millennium military transport.

The future looks equally positive. The strong post-pandemic rebound has resulted in continued strong demand for A320ceo aircraft. That extended timeline allows IAE to further refine time on wing performance and streamline the maintenance process.

“It’s been going strong for 40 years, but the V2500 is still being enhanced,” says Rick Deurloo, President of Commercial Engines at Pratt & Whitney. “The A320ceo fleet is young with an average age of only 13 years, and retirements have been far fewer than expected. There is a real cargo conversion opportunity too. So, the V2500 fleet will continue to prosper.” With the engine still in production for the C-390 and the company developing new, cost-effective service offerings to meet a wider variety of mid-life passenger and cargo conversion needs, Pratt & Whitney promises long-term support for its V2500 customers.

“We love that customers love the engine.”
A variety of potential solutions are our focus, as well as moving ideas off the drawing board and into the sky. Pratt & Whitney is already taking the lead in proving the value of hybrid-electric technology.

In December 2022, we completed the first engine run of our hybrid-electric flight demonstrator in Canada, which combines a highly efficient fuel burning engine with a 1 MW motor developed by Collins Aerospace. The propulsion system will power a De Havilland Dash 8-100 test aircraft, with flight tests due to begin next year.

“The flight demonstrator is about maturing the various technology learnings that are necessary to build the hybrid-electric aircraft architecture of the future,” says Maria Della Posta, President of Pratt & Whitney Canada. This includes trade-offs in power ratios, inflight recharge issues, and maximum payload ranges. The goal is to reduce the energy consumption while remaining agnostic to the energy source. It is expected that the system performance inflight will reduce fuel burn and carbon emissions up to 30% compared with today’s most advanced regional turboprop aircraft.

“And today’s turboprops are already 40% more efficient than regional jets or turbofan engines, so adding hybrid-electric makes an already efficient platform even better,” says Della Posta. That, she adds, ensures that investing in hybrid-electric technology will provide long-term value. Although it takes time to develop and mature new technologies while maintaining regulatory standards, hybrid-electric propulsion is a rapidly developing field and offers many opportunities to improve aircraft performance, capability, and efficiency.

“In addition to being able to harness the decades of expertise Collins Aerospace has in aircraft electrification, we are accelerating this technology development by collaborating with other leaders in this space,” Della Posta notes. “We selected H55 S.A. to supply battery systems for our regional hybrid-electric flight demonstrator program, and Raytheon Technologies is the lead investor in VerdeGo Aero, a company specializing in delivering powerplants that efficiently convert jet fuel or sustainable aviation fuel into electric power.”

A range of applications
Hybrid-electric technology won’t be limited to the regional market. Last year, for example, Pratt & Whitney announced a new demonstrator program applicable to future advanced air mobility vehicles. STEP-Tech, or Scalable Turboelectric Powertrain Technology, addresses a variety of potential applications, including advanced air mobility vehicles, high-speed eVTOL (Vertical Takeoff and Landing), unmanned
aerial system (UAS) applications, and blended wing body aircraft, requiring 100-500 kW. STEP-Tech is just beginning its testing phase. The immediate goal is a ground demonstration in early 2025.

Pratt & Whitney is also part of a collaborative consortium developing hybrid-electric technologies for larger aircraft. The Sustainable Water-Injecting Turbofan Comprising Hybrid-Electrics (SWITCH) project is supported by the European Union Clean Aviation Joint Undertaking and intends to demonstrate news technologies that could improve fuel efficiency and reduce aircraft carbon emissions up to 25% compared with today’s state-of-the-art propulsion systems for short- and medium-range aircraft.

“SWITCH is an outstanding example of industry collaboration to advance sustainable propulsion technologies, as we are working closely with Collins Aerospace, Airbus, MTU Aero Engines, and others,” says Della Posta. “We plan to run a hybrid-electric GTF demonstrator, and develop Water Enhanced Turbofan (WET) technology, in the first phase of the program.”

Other propulsion methods
As for other emerging propulsion technologies, Pratt & Whitney is developing an advanced hydrogen propulsion concept called the Hydrogen Steam Injected and Intercooled Turbine Engine, or HySiITE.

Hydrogen fuel is completely free of carbon and so has the potential to achieve zero in-flight carbon emissions. It would also reduce nitrogen-oxide (NOx) emissions up to 80% and fuel consumption up to 35% for next generation single-aisle aircraft.

“Our HySiITE project is designed to take full advantage of the cryogenic properties of liquid hydrogen fuel using water vapor recovery and steam injection technology,” Della Posta explains. “Achieving this level of efficiency will help offset some of the design challenges associated with hydrogen, such as the greater weight/ volume required for liquid hydrogen fuel tanks and help make hydrogen economically viable for operators.”

HySiITE is a conceptual design study at this stage, focusing on integrated system evaluation, notional component design, and component feasibility tests. No engine demonstrations are planned in the current program but there could be an accelerated follow-on initiative if results warrant it.

Sustainability
All the improvements to propulsion systems move the industry closer to its goal of net-zero carbon emissions by 2050.

“We are committed to supporting the ambition of reaching net-zero carbon emissions by 2050 and are making progress towards this goal with a basket of measures that have a range of reductions in emissions, fuel and noise,” agrees Della Posta. “However, there is no single solution that will make a difference; that is why are focused on multiple paths to sustainable propulsion.”

“The need to address aviation’s contribution to climate change is paramount to sustain our industry and reinforces the need for collaboration among airlines, aircraft OEMs, and engine OEMs,” Della Posta concludes. “Pratt & Whitney is well-positioned to help address climate related challenges through our operations and products, the scale of our company, the ingenuity of our people, and our history of rising to meet generational challenges.”
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Learning COVID’s lessons to be ready for the next health crisis

Conrad Clifford, IATA’s Deputy Director General, has three ‘asks’ of governments concerning lessons from the global pandemic.

It is very encouraging to see international air traffic returning almost to pre-pandemic levels, even though at end April 2023 the two largest international air travel markets pre-pandemic, the United States and China, still have vaccination requirements in place that have been largely removed by other markets. Nevertheless, as we are almost at the point where we can put the COVID crisis behind us, it is important to take stock of the lessons that need to be learned before memories start to fade.

The first lesson is that governments should follow the science and not the politics. It was disappointing to see restrictions applied for political rather than scientific reasons. It is difficult to remove restrictions once applied, particularly where the reason for the restriction was not clear in the first place. IATA has been studying these issues in detail and there are three elements that we would recommend governments to take note of to ensure a better response to future global health crises.

1. Recognize that border measures that restrict travel and trade come at a huge economic and social cost for at best a marginal and temporary health benefit
2. Move quickly to implement a set of proportionate, risk-based, and time-limited health measures
3. Enable passengers to demonstrate their health status via a government portal, using one of the major digital health credential standards (which are all mutually recognized).

Economic understanding
Firstly, governments need a greater understanding of the economic and social disruption that COVID travel restrictions caused, not just to the aviation industry, but to the wider economy and society at large.

In 2020 alone, COVID caused a loss of nearly 7% of global GDP. Against these very severe negative consequences, COVID largely confirmed the belief...
before the pandemic that border measures offer only a temporary benefit in delaying the spread of a pandemic. Modeling carried out by OXERA, a consultancy, found that with the Omicron variant, due to the high transmissibility of the infection, additional measures such as testing or quarantine bought at most two days’ time in terms of delaying the peak of infections. And it had virtually no impact at all on the scale of the peak. It is vitally important that governments carry out reviews of the evidence and learn the lessons so that the instinct in future is not to simply pull up the drawbridge.

That should logically lead to our second point: development of a set of proportionate, risk-based, and time-limited health measures.

Guidelines
The ICAO Council’s Aviation Recovery Task Force put together its Take-Off Guidelines, based on a set of multi-layered protection measures, in record time, which was a welcome new development. But we now know that some of those measures were ineffective and disruptive. We need to learn lessons so that we do not dedicate time and resources to measures that don’t work. As part of that process, we are supporting ICAO in delivering a science-based review to establish what worked well, what could work better, and what should be disregarded in future health emergencies. In doing so, it will be important not to fall into the trap of only preparing for a COVID-like pathogen. The next outbreak might be very different, and it is critical that we aren’t taken by surprise.

The international response to COVID, especially as related to travel, was fragmented, with a lack of coordination between States and their health authorities. Governments need to be more open about their risk assessments and decision-making criteria. It is important for the industry and consumers to understand the basis of government decisions to plan schedules or prepare travel with confidence and certainty.

Enhancing capabilities
Thirdly, we need digital health credentials. These were undoubtedly a COVID success story. Now is the time to build on that success. The first part of that is to maintain and enhance the capabilities developed during the pandemic. Critically, the three main certificate standards that have emerged—EU DCC, ICAO’s VDS, and VIDOC—should work to ensure mutual recognition.

And the World Health Organisation should continue work on a digital Certificate of Vaccination of Prophylaxis—the so-called Yellow Card—to provide a universal and global document. Where governments determine that they require health information in advance of travel, this information should be collected directly from travelers through dedicated web portals. Using portals avoids the need for airlines to handle, interpret, and store sensitive health information.

The COVID pandemic profoundly shocked the world, and the implications of the responses by governments are only beginning to be understood. What we do know is that there are already some clear lessons that can be learned and applied to ensure a better response to the next global health crisis.

“It is vitally important that governments carry out reviews of the evidence and learn the lessons so that the instinct in future is not to simply pull up the drawbridge”
As an industry, we have committed to reaching net-zero carbon emissions by 2050. With customers seeing a 15 to 20+% reduction in CO₂ emissions*, the LEAP engine family is a clear choice today for a more sustainable tomorrow. Extraordinary together.

*Compared to previous generation engines.
Ensuring enough manpower for growth

Captain Stanley Ng, President, Philippine Airlines, tells Graham Newton that retaining skilled staff is essential for sustainable growth.

Just like other parts of the world, attracting and retaining sufficient manpower is a particular problem in the Philippine region. Philippine Airlines is rising to the challenge.

Do you feel that the airline is now on a positive path following the pandemic? There has been no slowdown in demand since the recovery began. Our forward bookings are strong, so we are certainly on the right path. We are cautiously optimistic that the second half of 2023 will be good for the airline and perhaps even better than the second half of 2022, which was an excellent period for us.

Even while coping with the challenges of reopening borders in many key markets, we were able to report an operating income of over $297 million for 2022 overall. We will focus on growing sustainably, with key investments in our fleet, product, and people.

How important is the reopening of the China market to your strategy? China is a significant market for us, right up there with Japan, Korea, and the United States. We have restored nonstop service to five markets between Philippines and mainland China—to Shanghai, Beijing, Guangzhou, Xiamen, and Jinjiang. It will definitely mean more passengers for Philippine Airlines (PAL), because pre-pandemic Chinese tourism to the Philippines was strong. We expect that to pick up again. And it is not just the airline that will feel the benefits, because tourism is so important to the country as a whole.

We also have a plan to diversify and take Chinese passengers to other Asia-Pacific destinations too, via our hubs in the Philippines. We are exploring how we can develop this hub market over the long term, but we feel there is a big opportunity here and Philippine Airlines is well positioned to build this up.

Of course, the reopening of China also means we will face more competition. But that is something we are prepared for, and we think we
have a good proposition for the customer, and we can add value to their travel experience. That is how we will differentiate ourselves.

**Are codesharing agreements vital to you and are these easier or harder to negotiate following the pandemic?**

They are probably a bit easier today in the sense that carriers understand the need for collaboration to make travel a seamless experience for passengers and to widen airline networks. The pandemic taught us a lot about collaboration and also left us to be more cautious, so codesharing makes sense. It’s a sensible way to grow.

Increasing partnerships is a major part of PAL’s commercial strategy going forward, and our ambition is to have strategic partners in all major geographical areas served by PAL. Such partnerships would include interlining agreements as well as codeshares. We have increased our partnerships, and there are more opportunities in the market.

**Are you happy with your hub airport?**

Airport infrastructure could be a factor in restricting airline growth. Already, slots are hard to come by at the Manila airport and elsewhere in our network. As a result, we have expanded by growing a domestic hub network in Cebu and expanded flights from other airports in the Philippines.

But we are working closely with the government and airport authorities to help address capacity concerns at Manila and throughout the Philippines. The government has rationalized the allocation of airline services among the four terminals in Manila, and that will be a big help. Manila Terminal 1 will house all our international flights by July 2023, and Terminal 2 will be for domestic flights. That does mean some extra cost for us as we must spread our operations across two terminals, but it will also improve transfers for some passengers, particularly for those connecting between international flights. That gives us some new opportunities, such as connecting Chinese travelers flying between mainland China and other Asia-Pacific destinations in PAL’s network, as mentioned earlier.

We can also invest in the customer experience, such as developing a major new business class Lounge in Terminal 1 and improving the aesthetics of the facilities there. We also have room for growth in Terminal 2.

Another factor is runway capacity at Manila airport. We can find ways to increase aircraft movements and we are working closely with the air traffic control authorities to make that happen. I am a pilot and know that we can make gains through improved speed control and other measures. An airport collaborative decision-making system has been implemented, involving all stakeholders, and that will give all parties a better view of movements.

Overall, we look forward to an improved passenger experience in Manila, and the
airport will be a better hub. Further down the line, there is the possibility of some degree of privatization, and that will also be a positive move for the airport.

**What more can your government do to support aviation and, in particular, are you happy with the e-travel system?**

Improving tourism is a major goal for the current administration and PAL will play a big part in that. We also know digitization is coming and we need the government to be ready to support that.

One aspect is the e-travel system. But it is hard to judge the success of that yet. It is still very early days. But we were consulted every step of the way and we’re confident that customer needs will be met. As an airline, we will stay focused on improving the travel experience and we will communicate any concerns with the authorities.

**Can aviation reach its net-zero goal by 2050 and what are the most important technologies that will help?**

For us, investing in new aircraft and fuel-efficient engines is the biggest gain we can make toward the net-zero target, and we are doing that.

But we also have embarked on a Net Zero program that is reviewing all the possible ways we can reduce emissions in every aspect of our operations and business. This is not just about the big-ticket items, but we are also looking at, for example, how we can improve our office procedures or deal with waste. Over the long term, this will give us a roadmap to follow for reducing emissions and meeting the Net Zero target.

Of course, we will certainly need a large supply of affordable sustainable aviation fuel (SAF), and this is an area where other players can do more. Right now, SAF is still too expensive, even if it could be readily available.
If we can increase supply, the price will get cheaper. But there are many other factors involved too, such as feedstock concerns. That is why SAF must be a collaborative effort.

Are you confident you can attract and train enough skilled staff to maintain your growth?
Having access to skilled staff is essential to sustainable growth. Traditionally, our pilots have been poached by airlines overseas. But we’re not seeing that so much anymore.

Even before the pandemic, we decided to focus on internal growth, meaning we did a lot more training, not just for pilots but all personnel. We wanted to give our workforce more opportunities for personal development, and that has not only increased our skilled staff but also improved retention. Our staff appreciate what we are trying to do.

Of course, we must pay the appropriate salaries and provide the right benefits. There is a process of continuous engagement with our staff and listening to their needs.

Will diversity form an important part of your corporate strategy?
Diversity is already a core value of Philippine Airlines. Some 56% of our middle managers are female, and about 10% of pilots. That is above average for the industry and for the Philippines.

That doesn’t mean we shouldn’t continue promoting diversity. It simply means we have a good platform to build on and we will continue building. Focusing on diversity and inclusion will not only create a better workplace culture but will also help drive long-term business success.

What would you highlight as an important topic that rarely gets talked about?
The important topics are the ones we have talked about. But, as a pilot, I always feel we can do more to improve air traffic management. There are efficiency gains available locally and across flight information regions. We do work with air traffic controllers and allow them to sit in the cockpit so they can see what pilots want and why. We hope this will contribute to a better understanding overall on how we can build up an aviation system that is safer yet more efficient.

Actually, our Filipino air traffic controllers are getting poached regularly. That is an area where we could do with more support. Maybe one approach could be to have these highly skilled people serve a certain number of years in the country that trained them, as a minimum. We can’t have a constant exodus of skills.
Sustainability is a must-have in every aspect of aviation operations. The industry has committed to achieve net-zero carbon emissions by 2050, a target that will only be reached by embracing sustainability initiatives large and small.

At Swissport International, Nadia Kaddouri’s role as Chief Strategy and Sustainability Officer combines this need to integrate environmental, social, and governance (ESG) concerns in all business areas. “It is essential that we integrate sustainability in every decision that we take, and this should be reflected in the responsibilities at the top,” she says. “ESG leadership roles should be tied to both strategic planning and delivery. If that became the norm, we would see a huge acceleration in transformation. As leaders, when it comes to ESG we are all finding our way and inventing the playbook from scratch. That freedom excites me.”

Decarbonization
Decarbonization is always the first topic mentioned when talking about ESG performance in aviation. Swissport aims to reduce its CO2 emissions 42% by 2032. The largest component in its global carbon footprint is fossil fuel-powered vehicles, which will be countered by purchasing an electric fleet. Accordingly, the share of electrically powered vehicles in its fleet will reach at least 55% by 2032.

The company is also working beyond its direct emissions and considering the circular impact. “The current definition of circularity in aviation is too narrow,” says Kaddouri. “This is an interdependent industry and needs a more ambitious approach, focused on the full passenger journey.”

Collaboration will be the key to decarbonization. Only by working together will investment in green initiatives be fully realized. Swissport’s determination to acquire an electric fleet requires the correct infrastructure for charging, for example. In turn, Swissport can support airlines and airports directly in their net-zero journey by encouraging the sale of carbon credits at a Swissport-managed check-in point.

The sustainability journey must include every stakeholder in the aviation value chain.

Nadia Kaddouri, Chief Strategy and Sustainability Officer, Swissport

Airlines 2023 – 02
“We also place huge value on transparency,” Kaddouri emphasizes. “This means being honest about limitations, staying true to our promises, and ensuring that we keep the trust of our business partners and crucially, our customers.”

Kaddouri insists that no stone can be left unturned when it comes to reducing carbon emissions. And though new technologies and power sources will have a big impact in the future, there are smaller ticket items that will have an immediate and positive effect. These include:

- abandoning single-use plastics
- increasing circularity
- ensuring more energy-efficient operations
- using renewable power
- ramping up sustainable aviation fuel (SAF) adoption
- electrifying ground support equipment.

“We want to foster a culture of shared responsibility, because anybody can come up with an idea on how improve our activities,” says Kaddouri. “The transition to sustainability is a group effort and everybody can play a part.”

**Beyond the environment**

ESG goes far beyond carbon emissions. For Kaddouri and Swissport, people are front and center of the business. The company has over 48,000 people working across 45 locations worldwide and takes pride in a diverse workforce. It aims to be an inclusive employer of choice and has diversity as a core value.

Kaddouri says this stance and its entire ESG ethic reflects the diversity of the 97 million people it serves. “The DNA of our diverse workforce needs to be felt in the fabric of how we do business,” she insists.

Swissport has created a new employee value proposition and a new employee app is on the way to create a better sense of community among the staff.

Swissport discloses information on operations and risks in three areas: environmental stewardship, social responsibility, and corporate governance. It has maintained a strong engagement with community service and humanitarian aid, including providing air cargo logistics to support the victims of the February 2023 earthquake in Türkiye and Syria.

**Customer service**

The end goal of all this work is continuing to provide great customer service.

Kaddouri says skilled and engaged employees are vital to providing excellent service. “We have planned ahead for the 2023 peak travel season, creating 5,000 new roles globally as part of the introduction of our new recruitment, retention, and training strategy,” she says.

“Retention is a core issue. For us, inclusivity is essential in making sure that our employees do their best work, feel appreciated for it, and enjoy their time at Swissport... But they do need the right support to help them perform at their best.”

For more information:
Visit swissport.com
African aviation set to soar

Pre-COVID, aviation supported 7.7 million jobs and $63 billion in economic activity in Africa. Projections are for demand to triple over the next two decades.

Africa comprises 54 nations and some 1.5 billion people. That equates to approximately 28% of the world’s countries and close to 20% of the world’s population. Yet African aviation represents just 2.1% of total air traffic.

Infrastructure constraints, high costs, lack of connectivity, regulatory impediments, slow adoption of global standards and skills shortages affect the customer experience and are all contributory factors to African airlines’ viability and sustainability. The continent’s carriers suffered cumulative losses of $3.5 billion for 2020–2022. Moreover, IATA estimates further losses of $213 million in 2023.

“The limiting factors on Africa’s aviation sector are fixable,” says Willie Walsh, IATA’s Director General. “The potential for growth is clear. And the economic boost that a more successful African aviation sector will deliver has been witnessed in many economies already. With Focus Africa, stakeholders are uniting to deliver on six critical areas that will make a positive difference. We’ll measure success and will need to hold each other accountable for the results.”

The six focus areas are:

- **Safety:** Improve operational safety through a data driven, collaborative program to reduce safety incidents and accidents, in the air and on the ground.
- **Infrastructure:** Facilitate the growth of efficient, secure, and cost-effective aviation infrastructure to improve customer experience and operational efficiency.

**“The Focus Africa initiative renews IATA’s commitment to supporting aviation on the continent”**

Yvonne Makolo, CEO of RwandAir and Chair of the IATA Board of Governors
Pre-COVID, aviation supported 7.7 million jobs and $63 billion in economic activity in Africa. Projections are for demand to triple over the next two decades.

Somalian airspace was reclassified to Class A after a 30-year disruption. Some of the region's busiest air corridors traverse Somalian airspace, which is officially known as the Mogadishu Flight Information Region (FIR). It covers the landmass surrounding the Horn of Africa and extends into the Indian Ocean.

“The reclassification of the Mogadishu FIR as ‘Class A’ airspace will significantly improve safety in the region and enhance efficiency,” says Kamil Al-Awadhi, IATA’s Regional Vice President, Africa and Middle East.

Sustainability, meanwhile, means more than cutting carbon emissions. Focus Africa will support the realization of the UN’s Sustainable Development Goals (UN SDGs) for Africa of lifting 50 million people out of poverty by 2030. Trade and tourism rely on aviation and have huge potential to create jobs, alleviate poverty, and generate prosperity across the continent.

Greatest potential
Africa continues the path to recovery. Air cargo is 31.4% over 2019 levels; and air travel is 93% of 2019 levels, with full recovery expected in 2024.

“The tasks for Focus Africa are not new,” says Al-Awadhi. “Work is already underway as part of the work of IATA and other stakeholders in Africa. But after the financial trauma that the pandemic brought to African aviation, we are at a unique time of rebuilding. By launching Focus Africa now, we can ensure that the recovery from COVID-19 moves aviation to an even better place than 2019.”

“Africa stands out as the region with the greatest potential and opportunity for aviation,” adds Yvonne Makolo, CEO of RwandAir and first female Chair of the IATA Board of Governors (2023-2024). “The Focus Africa initiative renews IATA’s commitment to supporting aviation on the continent. As the incoming Chair of the IATA Board of Governors, and the first from Africa since 1993, I look forward to ensuring that this initiative gets off to a great start and delivers benefits that are measurable.”

Connectivity: Promote the liberalization of intra-African market access through the Single African Air Transport Market (SAATM).

Finance and Distribution: Accelerate the implementation of secure, effective and cost-efficient financial services and adoption of modern retailing standards.

Sustainability: Assist Africa’s air transport industry to achieve the “Net Zero by 2050” emissions targets agreed to by industry and the UN’s International Civil Aviation Organisation (ICAO) member states.

Future Skills: Promote aviation-related career paths and ensure a steady supply of diverse and suitably skilled talent to meet the industry’s future needs.

Partnerships will differentiate the outcome of Focus Africa from previous efforts to stimulate Africa’s development with air transport. By partnering, stakeholders will effectively pool their resources, research, expertise, time, and funding to support the common goals of the six work areas.

The partners will be announced and join forces in Addis Ababa on June 20-21, 2023 to officially launch the Focus Africa initiative with more details for each task area.

Safety and sustainability
In terms of safety, the priority for Africa continues to be implementation of ICAO safety-related standards and recommended practices (SARPS).

At year-end 2022, some 28 African countries (61%) had an Effective Implementation (EI) rate of ICAO SARPS of 60% or greater, unchanged from 2021. Increased attention is being placed to address the critical elements of the ICAO SARPS.

“Building a data rich environment across Africa is also essential to delivering regional improvements such as IATA’s Global Aviation Data Management program,” says Walsh.

Safety will also be improved by work in air traffic management. Earlier in the year, Somalian airspace was reclassified to Class A after a 30-year disruption. Some of the region’s busiest air corridors traverse Somalian airspace, which is officially known as the Mogadishu Flight Information Region (FIR). It covers the landmass surrounding the Horn of Africa and extends into the Indian Ocean.

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Emerging technologies, finding the right staff, and continually looking to modernize processes are all vital elements in the success of Turkish Cargo, says the Chief Cargo Officer for Turkish Airlines.

**What improvements can digitization make to cargo processes?**

Data has become one of the most valuable company assets and the use of predictive data analytics is a key step in enhancing our operational capabilities. Data analytics, integrated fully into cargo processes, will allow for a better estimation of the performance of the supply chain network, reduce delays, and increase operational productivity by optimizing cargo routes and timings.

Thanks to the ability of the Transportation Management Systems of freight forwarders to connect directly to the airline’s operational systems, booking processes and shipment tracking processes become quicker, practical, and seamless. Such systems will also enhance customer satisfaction by providing real-time information to the shippers, consignees, and carriers. We will also be able to enhance our sales performance, understand customer requirements better, and observe trends instantaneously.

Mainstreaming of the e-AWB initiative stands out as another important step and we have made quite good progress in this area. Overall, digitized processes will be more productive and sustainable.

**What areas need to be modernized?**

Speed, productivity, and safety are vital to meet expectations and demands. Improvements in communication between the stakeholders will increase the number and quality of the data integrations, making processes quicker and more productive. For instance, implementation of automated processes, which make use of advanced data analytics and risk management techniques in customs procedures and security processes, will reduce delays to a minimum and enable faster deliveries.

With its potential to make breakthrough changes in various fields from healthcare to finance, blockchain technology will play a crucial role. The industry is global but has a fragmented structure. Thanks to blockchain technology, all supply chain and logistics processes will become traceable from a single source. This will ensure compliance with the applicable regulations, health standards, and security guidelines. We will also be able to monitor in-shipment sensor data for temperature-sensitive products.

Security is another area that benefits from digitization. By implementing blockchain technology, we can ensure the safety and security of our cargo. This will enable us to maintain a high level of security and reduce the risk of fraud.

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temperature and humidity values for perishable shipments. Our activities with respect to the Internet of Things (IoT) technologies and the platforms where such information will be exchanged are in progress. The 3D ULD Utilization Project is another sign of success. The core objective of the project is to have cargo loaded optimally into the ULDs and to ensure effective use of capacity, but it will contribute in terms of time and workforce as well. Augmented Reality (AR) technology is also a target. AR glasses will allow quick access to information, minimize errors, and make work more comfortable thanks to the hands-free mode. Finally, using unmanned ground vehicles and unmanned aerial vehicles in our operations will benefit the business. This will automate our shipment processes and enable productivity growth and help to speedily respond to customer requirements.

We will continue to monitor emerging technologies and examine best use cases for these technologies.

For more information:
www.turkishcargo.com.tr/en

from blockchain. It will enable accurate and reliable data sharing and enhance trust among all stakeholders. Moreover, it will only enable access to documentation by authorized persons, preventing any breach of confidentiality.

How can other stakeholders help cargo carriers move to digital processes?
All stakeholders in the industry exchange vast amounts of information daily. But bottlenecks can occur since information is often in different formats and not visible to the end customers.

Success in the industry depends on cooperation between the supply chain stakeholders. Every stakeholder must therefore become a digital stakeholder, meaning it allows necessary data to be seen and recaptured rapidly and accurately by other stakeholders.

What would signify success for Turkish Cargo?
Turkish Cargo is the fastest growing air cargo brand in the world, and we aim to become one of the top three brands in the coming years. Such a target requires technological change and development, and we are building our strategy around this goal.

Since end-to-end shipment tracking is one of the main focal points in logistics, we are planning to do more in this field. We will enhance the traceability of shipments from the time of their acceptance until their delivery and also the traceability of
ATA’s Modern Airline Retailing initiative is taking hold across the aviation value chain. The decades old technologies, processes, and standards that were inhibiting a true customer experience are in the process of being replaced by a world of 100% offers and orders. Just as they do when they shop for millions of consumer products online, prospective air travelers will have full transparency and visibility on airline products and services, regardless of whether they shop directly with the airline or via a travel agent or online travel seller. Additionally, travelers will no longer need to juggle between different reference numbers and documents (passenger name records-PNRs, e-tickets and electronic miscellaneous documents-EMDs). They will have a simple order detailing what they have purchased, while airline internal processes around revenue accounting and reconciliation will be greatly simplified. The pandemic provided impetus to this digital transformation and also got a broad set of consumers familiar with online retailing. “Modern Airline Retailing unleashes value creation opportunities driven by customer-centricity,” says Yanik Hoyles, IATA’s Director, Distribution.

Becoming a modern retailer
Moving to modern airline retailing puts carriers in control of their product, money, and data. There are three major steps involved.

The first is customer identification. IATA’s One ID standard will allow passengers to streamline their journey with advance information sharing and a contactless process at the airport based on biometric recognition. In turn, airlines can offer a seamless experience across different channels and touchpoints and have greater visibility into third party travel partners.

Concurrently, in a world where the airline creates the offer, rather than having it
assembled externally, as is the case today under the standard global distribution system (GDS) model, airlines need to be able to identify the travel seller, or any other intermediary. “GDSs will no longer validate the players in the value chain so airlines will need to recognize their partners through digital identification,” says Hoyles.

Second is retailing with offers, the most mature element, made possible by the introduction of the New Distribution Capability (NDC) technical standard. Some airlines already have over 30% of their indirect bookings coming through NDC channels. Because NDC is built on modern internet language, rather than the decades old EDIFACT standard, travelers will have more choice and see the full value of what is on offer, regardless of whether they are buying via the airline website or through a travel agent.

Major announcements underscore the impact of retailing on airline strategy. In April 2023, American Airlines removed 40% of its domestic fares from EDIFACT-powered channels. The fares are only available through direct or NDC-enabled channels. Given the size of the airline and the market, this represents an enormous development.

Finnair will end indirect ticket sales via EDIFACT channels entirely in 2025 and Air France-KLM (AF/KL) has started to shift some price points to NDC and direct channels only. AF/KL also announced that by 2027, 90% of their indirect sales will be through NDC channels.

A key benefit of NDC is the ability to introduce continuous pricing, which could improve revenue between 1%–4%, according to some analyses. Historically, using EDIFACT, airlines have been limited to just 26 fare classes (corresponding to the number of letters in the English alphabet). Rather than be restricted to 26 and the jump in prices that implies, continuous pricing means the customer can access more acceptable price levels more often.

“Every airline needs to make its own decisions based on its commercial and technical requirements,” says Hoyles. “But the move to customer-centricity is unmistakable. A McKinsey study has estimated that this is a $40 billion annual value creation opportunity.”

The third step in the transformation to modern airline retailing is delivering with orders, which is now gaining interest from leading airlines. Customers will have a single record for their order and will no longer need to juggle between different reference numbers and documents, including EMDs. Industry standards to support this transition have already been developed as part of the ONE Order project.
The pandemic forced airlines to re-examine every element of their operations in the search for new efficiencies. Payment, for example, was previously seen purely as a necessity, a siloed sector tacked on to the end of the booking or selling process. But post-pandemic, airlines are beginning to realize the need to be flexible and proactive in their payment offering, says Brett Turner, Elavon’s Head of Global Airline Acquiring.

“Airlines must make sure they have the right mix of partners, payment options, and a broad geographical coverage,” he says. “They need the right tools in place to use payments as a driver of growth rather than just a cost center.”

An orchestration layer is becoming essential, Turner adds. This is essentially software that sits on top of the payment structure and manages partners. “It’s a big topic and basically helps airlines reach their objectives by organising payments in an effective and efficient manner.”

**Finding the right balance**

Of course, every airline has a unique set of circumstances and so the approach to payments is necessarily different. But Turner says there are key considerations and questions.

To begin with, there is a need to simplify and improve payments for the end user. The customer makes purchases across different channels at various stages of the journey and expects a consistent experience. A payment option available online might need to be replicated in-flight in the cabin, for example.

Choosing which payment methods to offer is therefore vital. There are hundreds of possibilities, and many payment methods are specific to a particular geography. But an airline should decide on a core set of payment options that reaches as broad a set of customers as possible while minimizing costs and complexity.

“In any market, you have to assess what additional benefits you get from offering 20 products rather than five,” says Turner. “Every payment offer must be implemented, and the necessary partnerships and deals established. That means set-up and ongoing operational costs. Do you get a return on that investment?”

Acceptance rates is another interesting element in the payments arena. This can be more complicated than it seems and there are often multiple routes to payment verification. An airline’s revenue is directly tied to getting approvals. The balance is getting the fraud to acceptance ratio properly calibrated, and ensuring that you are using the tools your provider offers to maximize your chances for success.

“Within aviation, there is a wide array in acceptance management,” says Turner. “Some carriers have a best-in-class approach and understand their numbers and the reasons behind those numbers. Others are still on a learning curve.”

This disparity is replicated in the airline structures behind payment. Some carriers understand that payment has become a cross-functional discipline and necessarily involves finance, distribution, customer care and IT departments, among many others. Those that work across their internal stake holders and with their acquirers and other payments partners are best positioned for success.

“**Airlines must make sure they have the right mix of payment options**”

Brett Turner, Head of Global Airline Acquiring, Elavon
“Some carriers have a best-in-class approach and understand their numbers and the reasons behind those numbers. Others are still on a learning curve” Brett Turner, Elavon, Head of Global Airline Acquiring

New forms of payments challenges

Indeed, putting a new payment method in place can be challenging for many reasons. There is the obvious technical challenge, for example. Airlines still have a host of legacy systems, some of which are necessarily involved in the booking and payment process. Interfacing with them can be problematic, both initially and on an ongoing basis.

Specific payment methods carry their own issues. Bank to bank transfers need to be scaled to work in a large payment environment. Airlines also must decide whether they are willing to fill in the gap so that customers are not disadvantaged compared with other payment methods. A card payment, for example often provides consumer protection and carries points, leading to various travel privileges, such as lounge access.

Picking the right partners

Elavon has more than 30 years’ experience helping airlines overcome all these obstacles. They are partnered with approximately 100 airlines to deliver fast, efficient, secure, and compliant payment solutions for customers around the world.

Every card payment method is handled swiftly and securely, from contactless and mobile wallet transactions to online bookings, upgrades, and added extras.

“It’s important to ensure the credentials of your payment partners,” concludes Turner. “Although the development in payments is an exciting opportunity for airlines, post-pandemic it has brought new entrants into the field. But do they have the depth and financial reserves to withstand the cycles that this industry traditionally goes through?

“Elavon can help airlines transition payments from a under cared for function to a dynamic area that can positively affect the customer experience and revenue growth.”

For more information on how the Elavon global airlines team can help with your payments, visit www.elavon.com/airlines
The business case
An industry consortium comprising 12 airlines/airline groups was set up in summer 2022 to help accelerate modern airline retailing. The consortium members have all started the retailing journey and have committed subject matter experts to the various workstreams.

Five modules are being explored: the business case, the reference architecture, an RFP framework, the airline IT transition, and the industry transition to this end vision.

The business case has already been completed. This details the case for moving to retailing with offers and helps airlines understand what they need to consider, especially when moving to delivery with orders.

The consortium has also completed work on a first version of reference architecture—a technology agnostic model that describes the business capabilities an airline is assumed to have in the world of offers and orders. This model could serve as a common point of reference and facilitate coordination of all standards development related to the program. Such a contribution would also allow for further development of the model by all IATA members.

“Importantly, the airlines want an end state that permits a modular approach,” says Hoyles. “This enables competition. An airline could choose one supplier to do everything or could adopt a best of breed approach and have different suppliers for different modules.”

The RFP framework looks at the business requirements components associated with these technical changes. The IT Transition module is arguably the most complex and explores how to go from a legacy passenger service system (PSS) to a true offer and order environment. The industry transition, meanwhile, looks at how other players in the value chain are affected.

Making it pay
Hoyles says a final critical element to consider is payment and settlement. Modern retailing will make it easier for airlines to improve their payment options and alternative forms of payment will be adopted faster. Offering and accepting payment costs airlines some $20 billion every year and yet it is estimated that another $14 billion in value is available if airlines improve their payment and settlement capabilities. That is on top of the $40 billion that retailing will unlock. It is also worth noting that in a world of retailing, the IATA billing and settlement plan (BSP) remains just as valuable and accessible.

“Modern airline retailing is already a live project,” says Hoyles. “It is especially strong in the leisure market as the players shifted rapidly to NDC. Now, we are seeing a knock-on effect and it is gathering momentum across the board.”

There are over 60 airlines on the Airline Retailing Maturity (ARM) index, covering more than 50% of IATA global passengers and some 100 technology providers. “There is growing traction now because the early movers are seeing the benefits,” says Hoyles.

Some airlines or airline groups on the ARM index have or plan to save all or part of their distribution costs—which could be up to $300 million per year. And continuous pricing is driving increased revenues and customer satisfaction for those already live. Smaller airlines are making savings too, and all airlines that are on the retailing journey are posting improved ancillary sales.

“Airlines will always do what is best for their individual business,” Hoyles adds. “We are trying to supply the standards and guidance that enable that. There will be more transparency, more choice, and a better customer proposition. Everybody in the value chain will benefit.”

Air France-KLM also announced that by 2027, 90% of their indirect sales will be through NDC channels

“According to a McKinsey study, this is a $40 billion annual value creation opportunity.”

Yanik Hoyles, IATA’s Director, Distribution
SHIPPING A WORLD OF POSSIBILITY
WE KNOW HOW

At Cathay Cargo, every shipment matters. That’s why we take extra care to ensure that our cargo arrives in the best condition, delivering more value to customers and the world.
AF is the sector’s chance to decarbonize. To enable greater scaling of sustainable aviation fuels (SAF), there needs to be more cooperation and coordination between airlines and corporations.

How can we encourage greater cooperation along the value chain to stimulate demand for sustainable aviation fuels?

With SAF offering the greatest potential for the aviation sector to reach net zero by 2050, a sectoral approach is key, and every part of the value chain needs to work together to scale SAF. Shell is actively working with players across the breadth of the aviation ecosystem to help accelerate SAF supply and use.

It is this need for collaboration that led Shell, AMEX GBT, Accenture, and Energy Web Foundation to team up to create Avelia last year—one of the world’s first blockchain- powered SAF book-and-claim platforms for business travel. In leveraging the buying power of the business travel sector and aggregating airline and corporate demand, Avelia can be a game-changer in scaling SAF demand, and in turn structurally scale SAF production.

What more can governments do to promote SAF production?

Governments have a critical role to play and must do more to enable the scaling of SAF. Without a supportive policy framework, the high production cost of SAF is preventing it from commercially competing with fossil-based jet.

Globally aligned policy frameworks are needed and such actions need be seen across all the regions of the world to ensure progress, albeit at different speeds. With progress being seen in places like the United States and Europe, attention is increasingly turning to other regions where action is needed to meet the internationally agreed ICAO net zero 2050 ambition.

Policy should offer comprehensive solutions, so incentives should be introduced alongside mandates to drive price stability and help overcome the SAF affordability challenge the aviation industry is facing. It’s not an either/or situation, we need many different policies to structurally scale and accelerate SAF.

Could airlines do more through purchase commitments or infrastructure?

Airlines are steadily acting on SAF and we’ve seen an increasing number of them showing real intent on buying larger volumes over longer timeframes. The next step is to see more of that interest converted into SAF supply agreements—something we’re actively working on with our customers.

But while one-off agreements are important, on their own they are insufficient to deliver the demand volume to scale SAF production to the levels required. SAF demand remains too fragmented, which impacts the level of confidence fuel suppliers have to invest and ramp-up production and supply.

This is why we launched Avelia. As a concentrated industry that also needs to decarbonize, business travel is uniquely positioned to play a role in scaling SAF demand. Avelia offers a way to aggregate both airline and corporate demand for SAF under one platform. By joining solutions like Avelia and introducing SAF to their corporate programs, airlines can increase their efforts to support SAF.

Airlines can also act on the demand-side through innovative, sustainable flight initiatives, and ticket options for passengers, encouraging consumer interest in SAF-powered flights.

Jan Toschka, President at Shell Aviation, says perfection cannot be the enemy of progress when it comes to sustainable aviation fuels.
But this cannot be a distraction from the technologies already available. We need to prioritize ramping up what’s proven today, while investing in new technology for tomorrow.

The scale-up of SAF required is enormous. Will we get to the SAF quantities required to be net zero by 2050? I’m concerned by the pace of the transition, but we can achieve net-zero emissions by 2050. We’ll need all parties in the aviation ecosystem to play their part. Shell aims to have 10% of its jet fuel supply as SAF by 2030 and is investing in production and supply capabilities as well as collaborating across the value chain to meet this ambition. And policymakers will have a key role in mobilizing every part of the value chain to support SAF, from production and supply to end-use.

SAF is the sector’s chance to decarbonize. I implore everyone to act now on SAF and drive our industry towards net zero.

For more information: Visit https://bit.ly/40EAOlw

Is there a preferred pathway to SAF certification for Shell?

There are multiple technologies to produce SAF that are at various stages of maturity. It is critical that the industry progresses as many pathways and as quickly as possible to meet growing demand. At Shell, we have invested in a range of production pathways, from established technologies like hydroprocessed esters and fatty acids (HEFA) to advanced ones like alcohol-to-jet so that we can play our part in producing the volume of SAF necessary.

To achieve the 2050 target, the industry needs a wide range of feedstocks that meet agreed criteria. This would allow the industry to accelerate the growth of a range of SAF production technologies as well as de-risk investment in synthetic fuels like Power-to-Liquid.

Without targeted feedstock support, the industry will face a greater risk, delaying investment in less mature technologies and feedstocks until those are proven. I believe that this is an area where we cannot afford to let ‘perfection be the enemy of progress’. There needs to be pragmatism about what feedstocks are sustainable.

At Shell, we are committed to supporting a variety of SAF feedstocks that meet required sustainability standards and offer lower lifecycle carbon emissions than conventional aviation fuel.

What is your view of power-to-liquid SAF?

Synthetic fuels like power-to-liquid SAF offer exciting potential. Policies should aim to de-risk investment in such fuels and ensure flexibility on the source of CO2 used to help progress this technology.

In 2021, Shell helped demonstrate the reality of such fuel on a small scale by producing 500 liters of a synthetic power-to-liquid kerosene in The Netherlands. This fuel was mixed with regular jet fuel and powered a KLM flight from Amsterdam to Madrid, the world’s first scheduled passenger service using certified synthetic kerosene from a non-fossil fuel source.

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SAF is the sector’s chance to decarbonize. I implore everyone to act now on SAF and drive our industry towards net zero.

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Air cargo became the star of the aviation show during the dark days of the pandemic. Without the robust performance of the air cargo sector, many airlines would have struggled to survive.

Looking ahead, it’s unlikely that air cargo can maintain such a powerful impact, but that’s not to say it will do badly. Cargo revenue will drop in 2023 to an expected $148 billion according to IATA, some 20% of total airline revenue rather than the 28% share it had in 2022. Even so, it’s still far better than 2019’s 12% contribution.

“Exceptional levels are at an end, and we are now returning to more traditional variables,” says Brendan Sullivan, IATA's Head of Cargo. “But there is plenty to be positive about. E-commerce, the reopening of China, and perishables such as healthcare are a strong platform for growth.”

E-commerce now represents nearly 6% of the entire global economy. Cross-border digital trade alone is worth more than $2 trillion and speed is integral to the product offering. Air cargo therefore has an enormously powerful revenue stream to tap into if it can match its operations to customer expectations.

### Digitization

E-commerce is built on the idea that air cargo is there to support it. But fully realizing the potential of this emerging sector will require air cargo to accelerate its digital transformation.

“Digitization removes the friction in trade through new processes and systems,” says Sullivan. “We are far more advanced than we were. We are not just turning paper into a digital form without changing processes but moving to a true data-driven approach.”

Air cargo's digital transformation began with the e-air waybill (eAWB) in the early 2000s, and the eAWB is now used on two out of every three shipments. But it is IATA’s ONE Record initiative that will take air cargo into the next phase of development by creating an end-to-end digital logistics and transport supply chain where data is easily and visibly exchanged in a digital ecosystem of air cargo stakeholders, communities, and data platforms.

ONE Record is simply a technical standard...
the industry must therefore maintain its focus to stay on top of the issue. But guidelines and standards and a suite of mitigation tools should enable this dangerous good to be safely handled in quantity.

Similarly, the correct use of unit load devices (ULDs) is under scrutiny and best practice is being promoted to ensure safety at every loading/unloading.

Air cargo will also have to contend with new security regulations in the next 12 months. Pre-Loading Advance Cargo Information (PLACI) protocols will need to be adhered to in key regions and in the European Union a new Import Control System (ICS2) took effect in March 2023 that will touch on some 4 million shipments per year. New legislation is also due in Canada and the United Arab Emirates, among others.

As for sustainability, air cargo is a crucial element in the industry's ambitions to achieve net-zero carbon emissions by 2050. The aim is to reduce single-use plastics in air cargo as far as possible, minimize the weight of containers, and eliminate perishable waste. Nets, straps, and other materials are also being reviewed for recycling potential. Cargo facilities are also being transformed to reduce energy consumption.

“Sustainability is a collective challenge and must involve the entire air cargo value chain,” says Sullivan. “This includes governments and regulators, which must make possible greater SAF production and digitized processes.”

Complicated outlook
Overall, air cargo demand is softening after an extremely strong period. But numbers are still robust compared with pre-pandemic levels. There are significant downside risks—global GDP growth is shrinking and extra cargo capacity in the form of bellyhold and new freighters is being delivered into a cooling market, affecting yields—but some potential upsides to consider too.

“Air cargo is still an invaluable part of the global supply chain, from fast-moving consumer goods to humanitarian aid,” concludes Sullivan. “And greater agility and resilience means air cargo is much better placed to face the challenges ahead than it has been before.”

IATA has been working on the ONE Record standard since 2017 and it will become mandatory from January 1, 2026. Sullivan accepts that this is a tough deadline as numerous partners are involved, but he is confident that it will be met. “We need a consistent approach to ensure customer service and ONE Record will be vital to that,” he says. “We have about 175 companies involved in a multitude of pilot schemes and continue to scale up.”

Ultimately, it is envisaged that data-driven cargo—when all business is conducted digitally—will become a reality post-2030.

Safety and sustainability
Alongside digitization, safety and security are top priorities. The issue with lithium batteries is not going away and Sullivan accepts that it is “not the easiest nut to crack.” The market is growing 35% year-on-year with thousands of new entrants, and it is envisaged that data-driven cargo—when all business is conducted digitally—will become a reality post-2030.

It is envisaged that data-driven cargo—when all business is conducted digitally—will become a reality post-2030.
I imagine a world where planes take to the skies with minimized environmental impact, where gender diversity and social responsibility are top priorities in the aviation industry, and where businesses actively work towards creating a greener future.

At Hitit, we are dedicated to making this a reality through our unwavering commitment to sustainability, innovation, and social responsibility. I am excited to share how our company is actively working towards a more sustainable approach in aviation.

The urgent need to address aviation’s environmental impact has been widely recognized, and ambitious targets have been set to reduce CO2 emissions, such as IATA’s Fly Net Zero project, which calls for airlines to achieve net-zero carbon emissions by 2050. Hitit understands the significance of coordinated efforts across the entire aviation industry in achieving sustainability goals. We play a crucial role in supporting these efforts through our innovative Cloud solutions.

**Carbon emission monitoring**
A key challenge in achieving sustainability in aviation is accurately calculating and monitoring carbon emissions. Our Cost Accounting (Crane.CA) solution includes carbon emission tracking and optimization functions, developed by Hitit in accordance with the Carbon Offsetting and Reduction for International Aviation (CORSIA) guidelines issued by the International Civil Aviation Organization (ICAO).

With these functionalities, Hitit’s airline partners can accurately forecast their resulting operational emissions, and determine the ideal fleet/aircraft assignments, route plans, and tariffs to optimize operations, yet effectively minimize those emissions. This enables airlines to take proactive measures to reduce their carbon footprint, contribute to a better environment, and support the aviation industry’s commitment to sustainability.

**Maximum contribution**
But our contribution to sustainability in aviation goes beyond emissions tracking. Social sustainability is also a critical aspect of our approach to corporate responsibility. At Hitit, we carry out our activities in accordance with the United Nations Sustainable Development Goals (SDGs), in a way that benefits society in real terms. We provide support and implement projects not only in our own country but also in the regions where our partners are located. This reflects our commitment to creating a more sustainable and livable world.

We also set an example in the industry by promoting gender diversity and inclusion within our organization. With 36% of our employees, 50% of our Board of Directors, and 65% of our executive team being women, we exceed the world averages for gender diversity in the workplace. This commitment to diversity, equality, and inclusivity is reflected in our employment policies, social responsibility initiatives, and commitment to industry-wide initiatives, such as 25by2025 launched by IATA, which aims to bring the representation of women in the aviation industry to at least 25% by 2025. We have already exceeded IATA’s 25by2025 target for gender diversity and inclusion and are actively working towards further increasing our women-to-men ratio.

**Protecting the sky**
Our multifaceted approach to sustainability through innovation and social responsibility sets a benchmark for the industry, reinforcing our position as one of the largest global airline and travel IT solution providers. We embrace the motto ‘One Sky. One Partner’ with a deep sense of responsibility, recognizing there is only one sky that should be resolutely protected. We are committed to upholding this principle throughout our ongoing Cloud solution development—and we are always ready to participate actively in initiatives that contribute to creating a more sustainable, equitable, and livable world.

For more about Hitit, please contact sales@hititcs.com
Where Sustainability and Digital Transformation Connect

hitit.com
Positioning itself as a premium boutique airline, Oman Air’s CEO believes it is the perfect size for the market, working with other stakeholders to promote Oman as a go-to tourist destination and enabling visitors to experience all that the country has to offer.

Why are you being so aggressive in terms of fleet and network expansion?

Our airline’s approach to network expansion is not aggressive. Rather, we prioritize stable travel demand as the foundation for growth. As with many airlines operating in the post-pandemic environment, we are working towards returning to our pre-COVID operations. To achieve this, we have been gradually expanding our network to match the global recovery of air traffic demand. We are also striving to remain dynamic in reacting to market changes while cautiously evaluating any shifts.

One of our strategies to expand our network is leveraging codeshare agreements, which enable us to provide more options to our customers. We are also excited about our upcoming oneworld membership, which will significantly increase our connectivity and broaden our network.

We are also focused on exploring new opportunities for growth through cargo operations. Cargo continues to present new opportunities for us, and we are excited about our upcoming project of launching a new freighter by the end of the year. We believe this will be a game-changer in our cargo operations and enable us to serve our customers even better.

How are you positioning the airline given the competition in the region?

Our airline has always aimed to be the perfect size for our market, and we are not interested in competing with regional giants in terms of size. We prefer to focus on positioning ourselves as a premium boutique airline, providing a unique product that has earned us international acclaim.

Eng. Abdulaziz Al Raisi, Oman Air CEO, says that aviation enriches the world and enables friends, family, and business associates to meet face-to-face.

WORDS: GRAHAM NEWTON
“We see ourselves as ambassadors to the world, with a responsibility to promote Oman as a destination”
Additionally, as tourism is a vital industry for our country, we also see ourselves as ambassadors to the world, with a responsibility to promote Oman as a destination and enable visitors to experience all that our beautiful country has to offer. We take this role seriously and provide our guests with an exceptional travel experience that reflects the best of Oman.

You have an excellent punctuality record. How closely do you work with Muscat International Airport and other stakeholders? It is crucial to have a strong cohesion between various operations such as ground handling, catering, immigration, and customs. This is essential for ensuring that we can maintain our punctuality record and deliver a seamless travel experience for our guests.

We are fortunate to be supported by a highly skilled team of professionals who work closely with airport authorities in every station to ensure our operations run smoothly across our network. In addition, our new hub airport has significantly boosted our operations, improved our efficiency, and supported our performance. The modern facilities and infrastructure have been instrumental in helping us to maintain our reputation and service.

How important is sustainability and what work are you doing in this area? Sustainability is critical for the future of the aviation industry. But it is a complex and multi-faceted issue that encompasses both environmental concerns and business practices, requiring the participation of all stakeholders.

We have implemented operational changes such as reducing downwind patterns, using single-engine taxi, and other fuel-saving techniques. We have also updated our fleet by phasing out older, less fuel-efficient aircraft and introducing the latest aircraft technology that is more environmentally friendly.

For instance, we recently purchased new 737 Max aircraft, which are known to have the most fuel-efficient technology, as well as the 787s. In addition, we have made changes to our cabin setup, including using lighter seats that positively impact fuel consumption. And we are making small changes to our on-board products, such as moving away from single-use plastics.

Our forthcoming inclusion in the oneworld alliance will also add impetus to our sustainability commitment, facilitating collaboration between us and partner airlines. Our commitment to sustainability is an integral part of our organizational ethos and we continually strive to better our practices to achieve sustainable outcomes.

What more should be done to make sustainable aviation fuels widely available? Increasing production and making SAF more accessible and cost-effective is crucial, as is standardization to ensure they meet the quality standards. Raising awareness about the benefits of SAF is also important in generating more demand for these fuels. Finally, fuel companies should invest more in research and development to reduce the cost of SAF and make it economically feasible for airlines to adopt.

You recently had your first female captain. What is Oman Air doing to improve diversity? From its inception, Oman Air has maintained an inclusive work environment, in line with the vision of the late His Majesty Sultan Qaboos from the 1970s, advocating for the full inclusion of women in the workforce.

Oman Air is proud to have set a precedent in the Gulf region by appointing its first female engineer in 1994. We continue to encourage women to pursue careers in aviation through graduate training and cadet programs, which are equally balanced between men and women, reflecting how we want the organization to move forward. Women are a vital part of all areas of Oman Air’s operations, including technical operations, and many of them hold high-level management positions. We hope to highlight their achievements and inspire more young women to pursue careers in this field.
What new technologies excite you and how important is it for an airline to invest in a digital transformation?

In today’s highly competitive industry, investing in digital capabilities is essential for long-term success, enabling us to optimize operations, function more efficiently, and meet customer expectations.

At Oman Air, we have introduced a program of digital initiatives to keep up with the rapidly evolving landscape. One of these involves the restructuring of our Passenger Service System (PSS) to advance our digital retailing capabilities, facilitating the initiation of a new Internet booking engine and mobile app. This will provide our customers with an enhanced digital experience and more seamless interactions with our airline.

Furthermore, we have developed a New Distribution Capability (NDC) solution that allows travel agents to deliver rich content and ancillaries to customers, providing them with more personalized travel experiences. We have also recently joined IATA as a founding member of the pioneering Modern Airline Retailing program alongside a global consortium of airlines. Investing in our digital capabilities is vital for staying ahead of the curve.

What other challenges do you see for the industry, either regionally or globally?

The aviation industry has always been subject to external factors that can significantly impact operations and profitability. Therefore, it is crucial to remain agile and be able to cope with future crises effectively. Taking the lessons learned from the pandemic, we understand the importance of making better decisions and being able to implement them quickly. As the world continues to navigate an uncertain economic climate, fluctuating fuel costs, and unanticipated consumer demand, airlines must remain flexible and responsive to changing conditions.

Additionally, geopolitical factors are another consideration that airlines must be mindful of. Global events, such as changes in government policies, trade agreements, or conflicts, can significantly affect aviation operations and stability. As a result, airlines must have contingency plans in place to address geopolitical risks and be able to adapt quickly to changing circumstances.

If there was one thing you could change about your airline or aviation in general, what would it be and why?

Airlines are the core of aviation, yet they are also the weakest in the chain. As the CEO of an airline, I would like to seek more developed and improved partnerships between all the stakeholders within the industry, including manufacturers, regulators, and service providers.

COVID-19 taught us many things. Once again, the industry weathered a global crisis, much like it did during the earlier Global Financial Crisis or SARS and has come out stronger. No other industry that I can think of has shown such resilience.

During the pandemic, the media predicted a “new normal” where video conferencing, whether for business or personal reasons, would signal the decline of aviation, particularly in Business Class cabins. What we have seen has been the opposite—the industry has bounced back far stronger than anyone predicted and this bounce-back has been led by Business Class.

Ultimately, as human beings, we are a social species who thrive on face-to-face contact. Maintaining contact with friends or family overseas, or with business partners, is what aviation enables. Without aviation, the world would be a much smaller and less enriched place. What I would like to see changed in our industry is a recognition of how our industry brings people, families, and business together.

Yes, the industry does need to address environmental concerns, but there also needs to be more appreciation that our industry every single day carries the hopes, ambitions, anticipations, and joy of every person that flies on any one of the aircraft operating around the world at any time.
The spare engine leasing market is broadly following the trajectory of the aircraft leasing sector. The latter accounts for about 55% of the world’s total commercial fleet. Spare engine leasing—standing close to 45% of the engine market—will get to that figure in the next 5-10 years.

It will be quite an achievement for a sector that suffered a devastating downturn during the pandemic. “Revenues fell off a cliff and we were engaged with almost all our customers on payment deferrals and other ways to assist them through the crisis,” says Richard Hough, Chief Operating Officer, Engine Lease Finance Corporation (ELFC). “Payments slowly started coming back at the end of 2020 and have been increasing steadily since.”

ELFC’s assets followed a different path, reaching a nadir in December 2021. Leases ran their course, air traffic remained below pre-pandemic levels, inventory placements were minimal, and leased engines were redelivered rather than extended. A return to normal levels of business is expected in 2024 though there are regional differences. North America has always been robust, for example, while Asia-Pacific lagged.

“Over the past 12 months, we have reduced our inventory by half, which is positive for the coming year,” says Hough. “Yields are increasing too, albeit from a low base, and are expected to accelerate during 2023 as inventories of quality engines dry up.”

**Independent support**

Hough is confident that the overall market will grow. “Aside from having at least another 10% growth in the engine market if you track the penetration of aircraft leasing, the number of aircraft required to meet consumer demand is set to double in the next two decades,” he says. “That alone means a lot more engines.”

In business since 1990, ELFC plans to leverage its extensive skill and experience to serve this growing demand. The company is independent and supports all OEM products, working closely with each one to refine its services. The aim is to be a supportive partner that answers customer needs, offers competitive rates and services, and honors all commitments.

There will be bumps in the road so staying agile will be vital. “We have always been flexible,” says Hough. “We’ve come through financial crises, geopolitical turmoil, the pandemic, and OEM growth in the aftermarket, which has been a major disruptor.

“Past performance is no guarantee of the future,” he adds, “but we have successfully operated in a competitive yet volatile market for many years. We know how to utilize that experience to look ahead and be prepared.”

**Sustainability**

Sustainability is a key area, for example. ELFC continues to invest in the latest engines that are compatible with sustainable aviation fuels (SAF) and have considerably improved performance. The percentage of new technology in the company’s portfolio has increased 10% in the past year alone and now represents almost 50% of assets by value.

Aviation is one of the hardest industries to decarbonize and Hough acknowledges it has significant challenges to meet targets. “Fuel efficiency improvements will continue to be a significant element of the drive to decarbonize but won’t move the dial fast enough, electric power is only feasible for regional operations, and hydrogen requires such a new aircraft concept and supporting infrastructural change it will likely only be a reality at scale post 2050. Therefore, SAF or e-fuel is the most practical solution, but it needs huge investment to be produced in sufficient quantities and at lower prices.

Growth in the spare engine leasing market promises a sustainable future. We speak to Richard Hough, COO at ELFC, about why he is confident of growth in the sector.
“Past performance is no guarantee of the future, but we have successfully operated in a competitive yet volatile market for many years. We know how to utilize that experience to look ahead and be prepared.”

Richard Hough, Chief Operating Officer, ELFC

"The alternative is that the industry could have its growth curtailed through higher fuel prices and/or taxation,” he continues. “But that gets you into the complex argument about restricting connectivity and the right of emerging economies to develop, there's no doubt those countries will want to maximize the benefits of aviation. So, the most obvious way forward is to accelerate SAF deployment.”

The engine market could also further environmental efforts by embracing the circular economy. Too often, engine parts are treated as consumables for numerous safety-related reasons. Greater focus on repairs, including non-OEM options need to be supported. Spare parts company, INAV—a subsidiary of ELFC—has a strategy to reuse and recycle wherever possible.

Understanding risk
Whatever happens, ELFC will continue responding to market needs and its customers. As an established player, ELFC doesn’t have a need for rapid expansion but rather, says Hough, “the company will grow organically, using our knowledge, experience and culture to offer the best possible deals that meet our customers’ needs more often than our competitors.”

“For engine leasing it's always a mixture of caution and risk,” he sums up. “That's the same for most businesses. There will continue to be new entrants and others who exit the market when they find the asset management demands of engine leasing too burdensome. We will use our knowledge to make good decisions and purchase portfolios when it makes sense. Ultimately, our business depends on the end customer. So long as people want to fly, we will have a job to do.”

For more information on ELFC, visit https://elfc.com/
Assessing risk with imperfect information

A wide range of factors, often unpredictable, can affect the safe and secure continuity of civil aviation and yet airlines do not always get the right information at the right time.

WORDS: GRAHAM NEWTON

In mid-December 2019, Chinese carriers reportedly noticed a downturn in their domestic forward bookings to and from Wuhan. Just weeks later, a novel Coronavirus was identified with its origins in the city and months later a global pandemic was in full swing.

Something similar occurred in the Arab Spring in January 2011, when commercial flights to Cairo saw a drop in load factor just before protests hit the Egyptian capital.

Airlines were unable to properly risk assess these events even though the information was obviously available in some form.

Even what might be termed “known” risks are far from straightforward in their assessments. Currently most obvious is the Ukrainian conflict, where airspace normally available to civil aircraft operators was proactively restricted weeks prior to the actual moment of hostilities between the countries involved. They later affected adjacent airspace, including Belarusian and Moldovan airspace.

“The interesting point about this is that Russia was one of the first States to issue safety notices about the closure of sovereign airspace,” says Matthew Vaughan, IATA’s Director Aviation Security and Cyber. “Today, however, airspace restrictions apply for specific locations around the conflict zone but there is not a territory-wide Russian NOTAM closing airspace that is based on risks stemming from the conflict.

“What is preventing EU-registered airlines, for instance, are restrictive measures that would make it impossible to access maintenance and repair services in Russia should the need arise,” he adds. “Thus, by implication and owing to flight safety concerns, EU airlines
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elect not to use Russian controlled airspace. We’re 18 months down the line and overflying the affected States remains an opaque and deeply complicated situation to effectively risk manage.”

Aside from Eastern Europe, there are concerns regarding ratcheting tensions between the People’s Republic of China (PRC) and Chinese Taipei, as well as in the Middle East, the Korean Peninsula, and in certain Latin American regions.

There have been civil disruption protests in Brazil and Venezuela, for example, and no less correlated in the way civil aviation is implicated, shots were fired at an aircraft in Santiago during an attempted robbery. As of end April, the most recent developments include the conflict in Sudan. As a result, safe and secure sovereign airspace is either restricted and/or unavailable as is the national airport in Khartoum.

Understanding risk
The problem for airlines is that they need to risk assess these situations in a time sensitive manner and yet they are having to make decisions based on imperfect information. “The information collection model and the way that information is shared has to improve,” says Vaughan. “The information airlines get is often too fragmented and reactive in nature. Airlines based in certain countries or operating into volatile regions have geopolitical risk at the top of their concerns and yet they don’t have the full picture available to them.”

Generally, information sharing is good between an airline and its home country or State of registry. But that bilateral relationship isn’t replicated on the multilateral level, meaning every risk assessment has biases or blind spots. And flag carriers may have different concerns to other, privately-owned carriers. But access to reliable, timely and corroborated information is still a challenge.

Vaughan highlights the Abraham Accords between Israel and the United Arab Emirates (UAE), Bahrain, Morocco, and Sudan. “This series of treaties came about during the pandemic and so the connectivity of civil aviation between nations was not the headline it perhaps should have been,” he says. “For example, there are now scheduled services between Israel and the UAE, but hand-in-hand with this greater connectivity is that the Accords have added an extra dimension to an already complicated region. The tensions are impossible to measure every day with a useful degree of accuracy, especially given the Eastern European and Sudanese developments.”

Equally difficult to untangle are airspace restrictions. Aside from the usual civil-military concerns, few States align in how they publish restrictions or guidance. “It puts more fatigue in risk assessment than is necessary and makes mistakes in risk judgement more likely,” says Vaughan.

Travel advisories often complicate the picture and can affect the various insurance products available. In the United States, there is no cover if the US State Department has issued a travel advisory urging against flying to a certain country. Or it may be that advisories affect customer choices when it comes to choosing airlines or routes if they have to transit on long-haul, for example.

Flight planning
Many airlines pursuing the safe optimization of their networks therefore face myriad costly geopolitical challenges without the right tools at their disposal.

Vaughan calls for better information sharing throughout the value chain. “The geopolitical situation continues to affect airline operations and security,” he says. “Whether it is a pandemic, international conflict, economic sanctions or domestic disturbance, aviation can suffer severe disruption.

“It is not just cost but the safety of airline assets, crew, and passengers,” he continues. “Airlines need full understanding of the destinations they are flying into and plan to fly to. We need mechanisms in place for real-time monitoring of potentially disruptive situations. Airlines need to be assured of security, fuel supply, the availability of spare parts, and much more. As long as geopolitical tensions remain—and this is volatile time—aerospace operations will be affected. We need solutions in place.”
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Since its inception in 2003, IOSA has been an overwhelming success. Safety has improved significantly, industry auditing costs have been reduced, aviation insurers consider IOSA when establishing premium levels, and the lessons learned have informed risk management across a multitude of areas.

The all-accident rate for airlines on the IOSA registry in 2022 was four times better than the rate for non-IOSA airlines. And with some 407 airlines on the registry from more than 130 countries—exceeding IATA members by more than 100—the value of IOSA to the broader industry is clear.

“The story so far is very positive,” agrees Serkan Simitcioglu, Head of IOSA. “The program has become a center of excellence for safety auditing. But that is also the challenge we have going forward. How do we keep up this incredible momentum?”

Humble beginnings
The original aim of IOSA was simply to reduce an audit frenzy, with regulators requiring airlines to audit each other before they could start codesharing. As a single internationally accepted audit process for airlines, IOSA replaced a multiplicity of audit practices that lacked common standards and consistency.

But the audit soon evolved, and in 2008 the IATA Board of Governors voted to make IOSA mandatory for IATA members. Even States joined in, with many making it part of their safety oversight.

Over the past 20 years, the IOSA checklist has been constantly upgraded and spin-offs include the IATA Safety Audit for Ground Operations (ISAGO) and the IATA Safety Standard Assessment (ISSA), which extends the benefits of the IOSA program to the operators of smaller aircraft. Safety Management Systems have been introduced and Enhanced IOSA promoted the idea of a constant safety focus as opposed to a biannual compliance exercise.

Now, IOSA is a byword for safety. It is essential for virtually all wet leasing or codeshare agreements, for example. IOSA has even moved into the sustainability sphere, being

Two decades of safety achievements for IOSA

On the 20th anniversary of the IATA Operational Safety Audit (IOSA), thoughts are turning toward the next generation of safety assurance.

The goal is to conduct approximately 25 risk-based audits in 2023, more than 100 in 2024
The ultimate aim of IOSA will always be to improve safety. But greater emphasis will now be placed on understanding the operator profile in advance of the audit. Any safety events or operational changes will be examined and the audit scope tailored accordingly.

A network expansion might mean an airline encounters new terrain or conditions, for example. Risk-based IOSA would explore how these new risks were being managed. Or consider crew training, which previously only needed to be in place. Now, the audit will also assess its maturity.

“This will give extra insight for airlines and help them improve,” says Simitcioglu. “It may lead to some new findings or other opportunities for improvement to begin with but that should be seen as a positive. It means IOSA is becoming more thorough and generating additional safety insights.”

The IOSA business model is also changing. Third party Audit Organizations are gradually being phased out in favor of auditors directly engaged by IATA. This is a necessary response to the move to customized audits. In-house auditors can be directly trained and will be more adaptive to airline needs. In the mid-to-long-term, a variable registration period is also under consideration, which would provide the airline community with additional value.

Six risk-based trial audits conducted in 2022 proved a huge success. The airlines involved reported a transformed audit experience and greater insight into operational safety. The goal is to conduct approximately 25 risk-based audits in 2023, more than 100 in 2024, and to have all audits risk-based by the end of 2025.

“The industry needed a more progressive solution,” Simitcioglu sums up. “A prescriptive audit every two years meant the IOSA safety rate—although always improving—wasn’t moving upwards as quickly as it once did. All airlines want a steeper curve in safety improvement and an even better value proposition, and IATA is determined to give them that.”

**Accident Performance:** IOSA vs Non-IOSA Airlines, 2005-2022

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“Aside from improving safety, it provides access to markets and agreements. But IOSA must develop beyond a prescriptive audit”

Serkan Simitcioglu, Head of IOSA

the safety standard recommended by the Sustainability Accounting Standards Board and so an integral part of environmental, social, and governance (ESG) metrics.

“IOSA provides huge benefits to its registrants,” says Simitcioglu. “Aside from improving safety, it provides access to markets and agreements. But we must continue increasing the value proposition. IOSA must develop beyond a prescriptive audit.”

**Risk-based IOSA**

The answer to the value proposition conundrum is risk-based IOSA. This marks a move from a standardized to a customized product.

Simitcioglu explains: “Airlines must still meet all the required standards in safety. After all, the
Carbon markets are under pressure, with some believing that poor measurability and lax standards harm the world’s ability to achieve climate goals. So, although many airlines around the world are doing an admirable job in trying to address their emissions via carbon offsets, they are subject to “greenwashing” claims.

CarbonKerma has created a platform designed to overcome these objections. It takes the strength of Carbon Capture, Utilization, and Storage (CCUS) technology—that captures and sequesters CO₂—and couples it with the innovative use of blockchain technology to bring a level of traceability, transparency, immutability, and measurability that has not existed in the carbon offset market before.

The result is an efficient marketplace of high-quality carbon offset credits that industries such as commercial aviation can utilize to offset their emissions.

“Companies with unabatable emissions rely on their carbon offset providers to have integrity and transparency so that their efforts are making a difference,” says Irfan Ali CEO, CarbonKerma. “It is CarbonKerma’s aim to be that reliable partner to sectors and corporations whose good climate intentions are being thwarted by carbon markets that are not operating as they should.”

**A tonne of success**

CCUS is a proven technology that has been successfully used for decades. Any large industrial emitting source or power generating source can install equipment to capture flue gas, which is typically rerouted through an amine-based solution that separates the CO₂ into a pure stream.

The CO₂ is then transported to wells drilled in deep geological formations where it is permanently sequestered. The entire process is highly regulated, and permits are needed for each CO₂ sink well, which also involves strict Measure Report Verify (MRV) regulations.

CarbonKerma’s platform then assigns each tonne of CO₂ a unique carbon tag (UCT). This patent-pending innovation identifies where and when the carbon was removed and where it is permanently stored. Each token is equal to precisely one tonne of CO₂ removed from the atmosphere.

“By giving access to the power of CCUS to reduce atmospheric CO₂ to other sectors through digitization, we hope to broaden the capacity for commercial aviation to offset its unabatable emissions in the most effective and measurable way available in the market,” he adds.
Moreover, a recent IPCC report found that the “model results... suggest that use of CCUS in conjunction with other measures could significantly reduce the cost achieving stabilization and would increase flexibility in achieving these reductions.”

CarbonKerma is in the unique position to be able to incentivize the acceleration and expansion of CCUS facilities by providing a liquid market for their sunk carbon. CarbonKerma removes the gap in capital expenditure required for the operation and building of these CCUS facilities.

“Since CCUS is the only scalable solution that will meet the Paris Climate Accord goals of removing sufficient quantities of anthropogenic CO2 from the atmosphere by 2050,” Ali concludes. “The trading of CKT not only provides direct benefits to those currently able to sink CO2 using CCUS, it also helps fund the expansion of this vital technology among developing nations.”

For more information:
Visit https://carbonkerma.com/
Sustainable aviation fuels work. Reducing carbon emissions up to 80%, they are a proven drop-in technology and certified for 50% blends in engines. With 100% carbon reduction and 100% certification on the way, the future from a technology perspective looks bright.

But there are challenges. SAF are more expensive than Jet A1 and supply is limited. Marie Owens Thomsen, IATA’s Senior Vice President, Sustainability and Chief Economist says the complexities involved mean there are no easy solutions. But, just as Thomsen’s role now combines sustainability with economics, certain financial truths need to be understood to at least get SAF on an equal footing with conventional jet fuel.

“Governments must start the ball rolling with the right policies and then the financial side will follow,” she says. “And the first thing governments should do is create supporting policies to increase SAF production.”

Countries that have signed the Paris Agreement to limit global warming to 1.5C are still subsidizing an overwhelming number of products and services that are based on fossil fuel. In the European Union alone, some €50 billion is spent in this area annually. Although, overall, more EU money goes to green energy than brown energy that is not necessarily true of individual countries.

“To date most countries don’t incentivize SAF production,” says Thomsen. “It’s extraordinary. It means that refineries that could produce SAF aren’t doing so. As we see more renewable fuel production capacity coming online that doesn’t necessarily mean that SAF will be produced, as bio-diesel remains the cheaper production option.”

Mandates
Instead of incentivizing production, some governments are mandating SAF output. Mandates could force producers to focus on using proven SAF pathways like HEFA (cooking oil) at the expense of other feedstock pathways that require more research or e-fuels. It will also be a barrier to entry for potential other producers.

“A mandate is not an action that makes

Making **SAF** the default option

The bridge between finance and sustainability is crucial if aviation is to achieve its net zero goal.

**WORDS:** GRAHAM NEWTON
sense," Thomsen suggests. “We have a supply problem, not a demand problem. More than 450,000 commercial flights have been operated using SAF and every drop ever produced has been bought and used. That is why incentives make more sense.”

The transition to affordable SAF is possible. Solar and wind are now the cheapest energies available, for example. And SAF doesn’t need to become cheap in absolute terms—a relative price advantage compared with Jet A1 is enough. That would make SAF the most profitable option to take, provided production follows.

“There are so many other factors that will affect the price of SAF,” Thomsen warns. “The availability and price of feedstocks, for example, but also the availability of green energy to develop e-fuels that are still in the research stage.”

But the point is not what the price of SAF will be, but the fact that it cannot be an inferior investment option. A clear policy framework that investors trust to venture into this nascent field is essential. This means policies that are forward looking, stable, and harmonized.

Silo thinking
The complexities surrounding SAF are mirrored in other sustainability initiatives. Sustainability projects generally have a higher

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risk profile than large blue-chip companies, which rules out most investors. That needs to change if the industry is to secure the finance needed to achieve net zero.

A major issue is silo thinking. “Sustainability is a systemic problem, and a system is not simply a sum of its parts,” says Thomsen. “There are endless dynamics involved in the aviation ecosystem due to the complex and nuanced interactions. But we rarely see a systems approach, especially from governments, which is why we get unintended consequences. A lack of systemic thinking tends to produce unintended consequences in policy making.”

The industry has devised a conceptual path to net zero and work is ongoing to flesh this out. The energy, infrastructure, funding, technologies, and policies required all need to be integrated into the roadmap. All aviation stakeholders are involved to ensure collaboration and promote this systemic approach.

Metrics
A first step is ensuring sustainability has the right metrics for the industry to understand where it stands and where it can make progress. These metrics need to be defined, with the definitions agreed globally for maximum applicability.

Second, Thomsen insists that every possibility for carbon reduction must be explored, and no progress is too small when it comes to reducing the industry’s carbon footprint. Sustainability initiatives will be a work in progress for decades yet and how they will all play out is unknown.

For instance, electric batteries will not power larger commercial aircraft over longer distances before 2050. But they could play their part in powering small aircraft on short-haul flights. “That’s better than not having those flights at all,” says Thomsen. “Because short haul can be a vital connector for remote communities.

Carbon offsets have been criticized too, but the industry has committed more than $30bn to date. Offsets are an interim solution, but a necessary part of the transition, particularly for aviation, as the industry lacks immediate options at scale. The goal is to diminish the industry’s reliance on offsets as technologies and SAF are more widely available.

“There is no magic wand,” Thomsen concludes. “We must use every possible solution, even the ones with limited impact. I am frustrated by debates that paint the situation in black and white—this is the right way forward, that isn’t. We don’t have that luxury yet. Maybe closer to 2050 we can be choosy about how we reduce carbon but right now we need everything. There is value in small-ticket items. They can add up to something meaningful and they are often cheap, available, and easy to implement.”
PERFECT PRACTICE MAKES PERFECT

Istanbul Airport established its Academy in 2021 to ensure the future of the airport and the industry.

The rapid recovery of air transport following the pandemic left many airports short of skilled staff. Aviation’s aim is to ensure this situation is not repeated and so the industry is working hard to recruit and retain talent. Istanbul Airport’s new Academy—established in 2021 and already accredited by IATA and Airports Council International (ACI) with ICAO accreditation on the way—will help overcome this challenge and secure the future of the industry.

“This is about improving safety, efficiency, and sustainability,” says Dr Tunç Cavcav, Manager of the IGA Academy. “Trained professionals will enhance the airport and the industry in these key areas. They will develop new solutions and new technologies to boost operations and reduce cost.”

New and existing talent
Aviation is still an attractive proposition for new recruits, but it does have its challenges. These include ensuring its sustainability efforts are understood and that the next generation of talent know that new technologies and innovation are welcomed.

“Also, training standards in the industry are high,” says Cavcav. “It takes about six months training at least for many positions. Then you must take into account a probationary period before you are finally a full employee. That’s a long time compared with other sectors and can seem especially long to younger recruits.”

Cavcav says the key is understanding the challenges in the market, the power of a brand, and devising a strategy that answers the need of the airport and the industry.

Ongoing training is also a vital component. Any airport must work hard to retain its top talent across all aspects of operations and the IGA Academy is committed to supporting the professional progress of its employees. The benefits of offering learning opportunities to current staff include:

- improved productivity
- increased innovation
- enhanced employee engagement
- ensuring safety
- a competitive edge.

“Employees are the new customers,” Cavcav notes. “The customer experience is only as good as the employee experience. So, we give our staff the opportunities and
resources they need to deliver the best possible customer service. It is a win-win situation. We reinforce this by offering award-winning training in Turkish hospitality.

“Remember, an airport is not just a hub for airlines,” he continues. “It is a hub for retail, for other transport modes, and for much else besides. It is a gateway to the country. User-friendliness is therefore essential to the modern airport and our Academy can teach the skills that make this requirement real.”

Training methods

Just as the industry is moving on and embracing digitization, so too must training. New techniques include virtual reality and gamification, as well as online learning.

Cavcav says that it is impossible to expect results from a young generation when the training is based on old methodologies. The emphasis now is on quality not quantity. Training is evidence-based, learner-centric, data-driven, and technology-enabled.

“The methods we follow is how we differentiate ourselves,” he says. “We train in 11 languages and even use sign language on some courses. Most importantly, we understand that learning is a process, not a single event. We therefore focus on practical training and practical results and participants get to train on-site with experts. It is essential in aviation to understand the reality of any situation. We want to close the gap between theory and practice.”

The IGA Academy offers a comprehensive array of courses from airport planning to commercial activities to safety and security protocols. There is also the opportunity for participants to learn soft skills, such as languages.

“We welcome anybody who wants to train,” Cavcav concludes. “We want to develop individuals for tomorrow’s industry. The IGA Academy is a unique training experience and a sustainable training system in every sense.”

For more information on the IGA Academy:
https://akademi.igairport.aero/
Aviation’s journey to net-zero carbon emissions by 2050 will be a difficult one. Fossil fuels dominate the industry’s value chain and extensive, collaborative efforts will be required to eliminate air transport’s carbon footprint.

Sustainable aviation fuels (SAF), hydrogen, electric power, and revolutionary airframe designs are among the many dynamic fields with challenges and opportunities galore. The importance of every element on the road to net zero must be understood by all stakeholders as must the timescales involved in the availability of potential solutions.

Five roadmaps
To help, IATA is producing five roadmaps to guide airlines on their journey. The five roadmaps will cover:
- Aircraft Technology
- Infrastructure
- Operations
- Finance
- Policy

Signposting the road to net zero

IATA is producing five roadmaps to guide progress toward net-zero carbon emissions.

WORDS: GRAHAM NEWTON
The technology, infrastructure, and operations roadmaps are already available and the remaining two will be published in the near future.

“The idea is to provide a clear direction for supply chain partners, governments and other key actors to be able to support airline strategy,” says Alejandro Block, IATA’s Manager, New Energies and Technologies. “The roadmaps can be used as guidance for where all stakeholders should focus their efforts. The timelines may change—some things may happen quicker, some slower. But we’re confident that everything covered in the roadmaps will happen. And we’ll update the roadmaps regularly as new information becomes available.”

The confidence in the roadmaps is based on the rigorous processes in their production. For instance, for aircraft technology, IATA consulted with experts on every facet of carbon reduction, including the airframe and engine manufacturers and leading research centers, such as NASA. Their technology strategies were examined and integrated into a timeline. So, everything that appears in the roadmaps, and the associated timelines, is based on this expertise.

On the Infrastructure side, start-ups were also consulted to ensure their innovative ideas had proper representation. This solidified the work on milestones in cutting-edge technologies and power sources. “For instance, hydrogen will first of all have to demonstrate the validity of fuel tanks, supply infrastructure changes, and production facilities,” says Block. “And we looked at the steps to new aircraft too. When will new power sources, infrastructure, and airframe designs be available? How are all these aspects related?”

The Operations roadmap also defines the critical improvements that need to be made to abate carbon emissions.

Modeling
The thorough peer-to-peer review has been supplemented by a modeling tool provided by University College London in the United Kingdom. The aim was to calculate the emission reduction for each technology. The baseline for the model was established by looking at the world fleet composition and predicted traffic growth. Certain assumptions were then fed into the model to estimate how emissions would reduce over time. One scenario took a positive view of hydrogen, for example, and another assumed more ambitious availability of SAF.

Predictions of carbon abatement for each technology and development are provided in a range with the roadmap taking the most realistic view based on an average.

The Finance and Policy roadmaps will be vital as these subjects are the enablers for reaching the net-zero target. They will cover such subjects as incentives, public funding, grants, and tax credits.

“Without the right investment and the right policies, many of the technologies and...
Innovations simply won’t happen at scale,” says Block. “Everything is related and that is why we have the five roadmaps to tie all the disparate elements together and give airlines a complete understanding of everything that needs to happen.”

Lessons learned
Block says the work on roadmaps has already produced several insights that can be fed back into the journey to net zero. Speaking to start-ups involved in hydrogen made it clear that this technology could advance rapidly and therefore work on hydrogen standards and certification must begin immediately.

“Our work has made it obvious that this isn’t about hydrogen or SAF,” says Block. “It is about both energy solutions and all the other elements as well. Nothing should happen in isolation.”

Block points out that the world’s existing fleet cannot decarbonize unless there is SAF in them. The complexity of the picture and the need for roadmaps therefore becomes obvious.

Block also highlights the knock-on effects of reducing energy use inflight. It is estimated that aircraft flying in 2050 will reduce their inflight energy about 12%. But research for the roadmaps revealed that for every one unit of energy saved inflight, about three units of energy would be saved on the ground.

“The production and supply of energy also takes energy,” Block explains. “Using less energy inflight therefore leads to significant gains along the fuel supply chains.”

Supporting airline ambition
Hemant Mistry, IATA’s Director of Energy Transition, concludes that the initial roadmaps will give a clear view of the direction that the aviation industry needs to go in, though details will doubtless change. And as these details emerge, it could lead to new milestones and opportunities in carbon reduction. It might also be possible to adapt the roadmaps specifically for airline elements or regional requirements.

“The different stakeholders involved will have slightly different ideas and priorities when it comes to net zero,” Mistry suggests. “But that’s fine. We all have the same goal. The roadmaps show the actions that need to be taken and the sequence in which they need to occur.

“Much is still unknown, but we will continue to review and update the documents,” he adds. “But we are clear about two things. Other actors shouldn’t define what the airlines should do without including the industry, and by the same notion airlines can’t achieve net zero on their own. Aviation partners must support airline ambition and the opportunities for carbon abatement and the roadmaps provide a good guideline to plan and sequence priority actions.

“The ultimate idea is to inform strategies and provide guidance at all levels. Airlines are committed to achieving net-zero carbon emissions by 2050 and these roadmaps are a huge step forward.”
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Ancillary revenue has grown enormously over the past decade and is now worth more than $100 billion to airlines worldwide.

Ken Harris, CEO of Plusgrade—a pioneer in ancillary revenue and merchandising in the global travel industry—says the growth has structurally changed the industry.

“Ancillary revenue was once called the new gold rush, but it is now a vital lifeblood of the industry,” he notes. “It is a critical source of high-margin revenue. Moreover, the diversity of the revenue streams means airlines have more stability and durability in their finances. A strong and diverse foundation of ancillary revenue puts airlines on a solid footing.”

**Competitive advantage**

Surveys in this area have shown that airline CEOs are well aware of the growth of ancillary revenue, especially among frequent flyers, and in many instances are making it a strategic priority. And the value of a loyal customer is clear. Reports suggest that American Airlines’ AAdvantage program is worth up to $31.5 billion. Every airline is different, but ancillaries can represent some 15%-20% of total revenue. Even if an airline falls below this mark, the money brought in by an unbundled product can be significant. And, in the post-pandemic era, that could make all the difference to the bottom line.

According to Harris, however, airlines are beginning to understand that revenue cannot be the only driver. “This is about getting a competitive advantage,” he says. “It is about improving the customer experience and customer loyalty. Ancillary revenue must promote value.

“There aren’t many things that people celebrate paying for,” he adds. “So, you need to look at how you leverage ancillary revenue to ensure it has an empowering and positive impact for customers. Because when you get it right, customers are more than willing to open up their wallet.”

**Traveler categories**

Plusgrade helps airlines improve ancillary revenue through the customer experience. Products such as Seat Blocker and SpeedPass were a response to passenger needs and have proven both popular and lucrative.

Harris notes that, according to an industry report, two major categories of travelers going forward are experience seekers and memory makers. “The aim must be to find the ancillaries that combine well with these groups,” he says.

But no category can be overlooked. Across the board, passengers want choice on how to define their journey. At the core
The company’s success with these airlines breeds trust and creates an atmosphere in which new ideas can flourish.

For more information on how Plusgrade can help you: Visit https://www.plusgrade.com/

Ken Harris, CEO of Plusgrade

“"This is about getting a competitive advantage. It is about improving the customer experience and customer loyalty. Ancillary revenue must promote value”"
IATA Opinion: Rafael Schvartzman

Environmental grandstanding won’t help us reduce emissions

Rafael Schvartzman, IATA’s Regional Vice President for Europe, says airlines need the correct support to achieve net zero in the region.

As the European summer season gathers for take-off, we are looking forward to some clear skies after years of storm clouds. Unfortunately, some delays will be inevitable because of the mess that is European air traffic control. The Ukraine war has loaded even more traffic into some sectors and this creates a congestion challenge which our Eastern and Southern ANSP partners are working hard to overcome. Less acceptable is continued strike action by French controllers and rostering problems in Germany.

Many of the issues with airspace could be resolved if the Single European Sky (SES) were in place. The SES would also lead to a 10% cut in emissions. But the political failure to drive through the emissions savings of SES is sadly typical of the grandstanding we have seen on aviation emissions in recent years.

Another example of this is the “Fit for 55” legislation—which is a package of measures designed to bring CO2 emissions across the entire European economy down 55% by 2035. It has three main components that affect aviation. The first is the EU Emissions Trading Scheme. The European institutions have grudgingly allowed this to continue to impact aviation on an intra-EU basis only, however the ICAO Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) will need to jump through various hoops by 2025 in order for this to continue. In a recent blog post I described this as “holding CORSIA hostage.” It is clearly unacceptable to continually make unilateral demands to change an international agreement, one which was only recently made more ambitious at the behest of the EU and other states.

The second element is ‘Refuel EU’. This is looking to push forward the uptake of sustainable aviation fuels (SAF). We welcome the focus on SAF as the key technology for reducing emissions in the short-medium term. But the EU has not done nearly as much as the US to put in place practical support for SAF production. A mandate on use is a very inefficient mechanism for driving greater supply. The US approach, of a direct tax credit to SAF refiners, is more effective.

Finally, the European Tax Directive (ETD). It is proposing a tax on jet fuel, which will function purely as a cash-grab on travel that will affect peripheral countries and islands of the EU the most. It goes directly against the principles of freedom of movement that are key to the European project.

We hope that ETD will be rejected, not because we don’t want to see environmental action, but because poorly thought-through measures simply drain industry resources from where they can be most effective. Implementing the SES would cost virtually nothing. Putting in place a proper incentive scheme for SAF production would enable airlines to buy more of it. Protecting and promoting CORSIA will increase its international take-up and deliver emissions savings all over the world. These are the areas that European politicians and regulators should be focusing on in order to accelerate the development of a successful and sustainable air transport industry.
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