Sheldon HEE
Regional Vice President, Asia-Pacific
International Air Transport Association (IATA)

Growth & Sustainable Innovation Challenges in the Asia-Pacific Aviation Sector

Outline

- Introduction to IATA
- The Asia Pacific Era – Asia Pacific as a Key Engine of Growth
- Policy Framework & Industry Leadership
  - Capacity
  - Sustainability
- Creating the Future – Innovation & Standards
  - A Seamless Future
  - Data in Aviation
- Conclusion

Introduction to IATA

- Global trade association for the world's airlines
- Some 350 passenger and cargo member airlines, representing 80% of global air traffic. 100+ member airlines operate different business models
- Founded in Havana, Cuba in April 1945
- Head Office: Montreal, Canada
- Executive Office: Geneva, Switzerland
- Regional Offices: Madrid, Singapore, Beijing, Amman, Miami

Mission

- To represent, lead and serve the airline industry

Vision

- Working together to shape the future growth of a safe, secure and sustainable air transport industry that connects and enriches our world

Core Activities

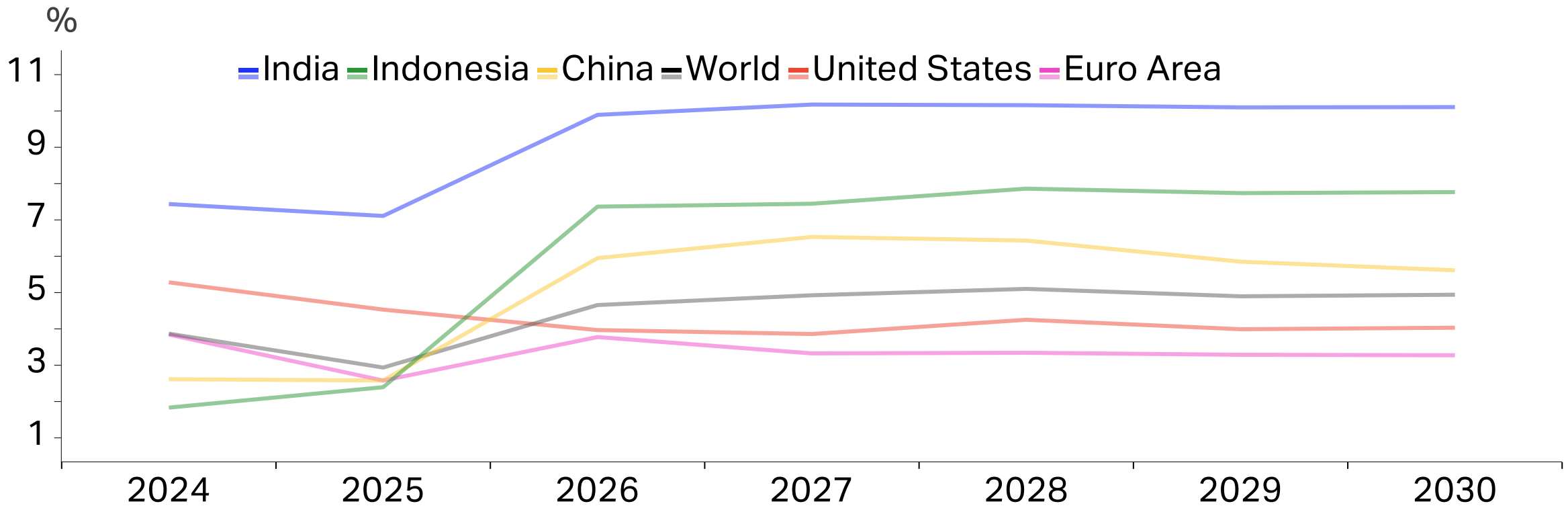
- Advocacy
- Standard Setting
- Products & Services

THE ASIA PACIFIC ERA

Asia Pacific as a Key Engine of Growth

Higher GDP growth of Asia Pacific economies point to increased demand for air travel

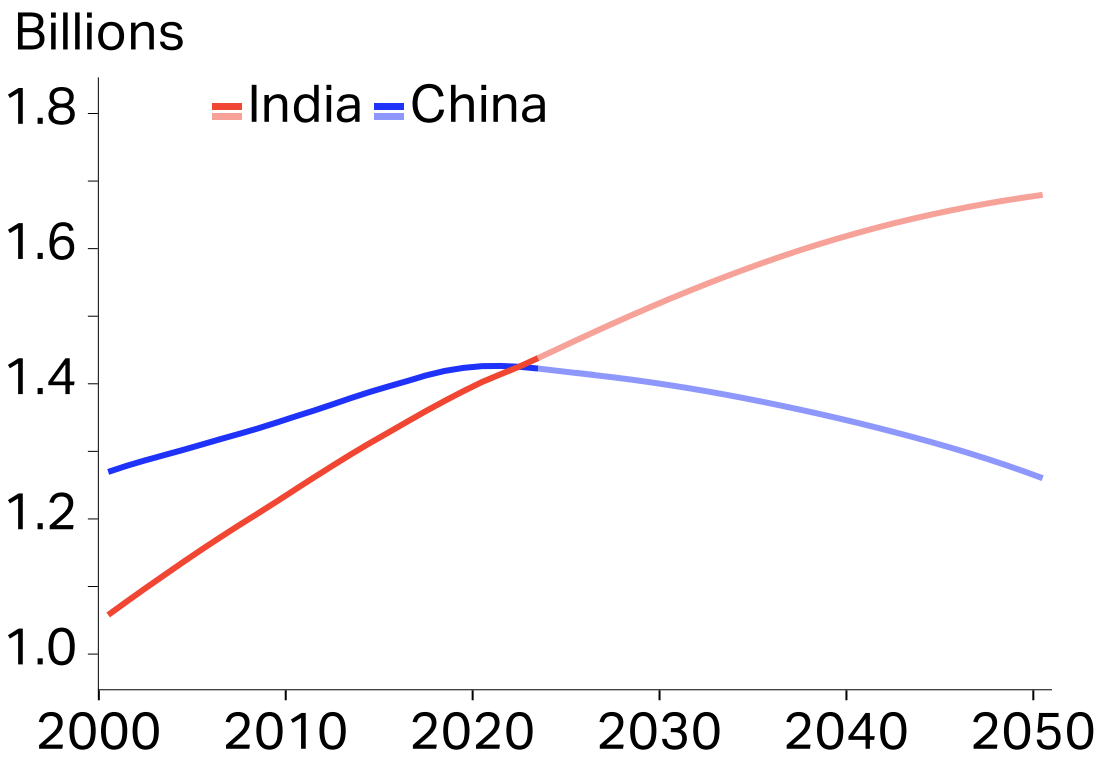
GDP growth of major economies

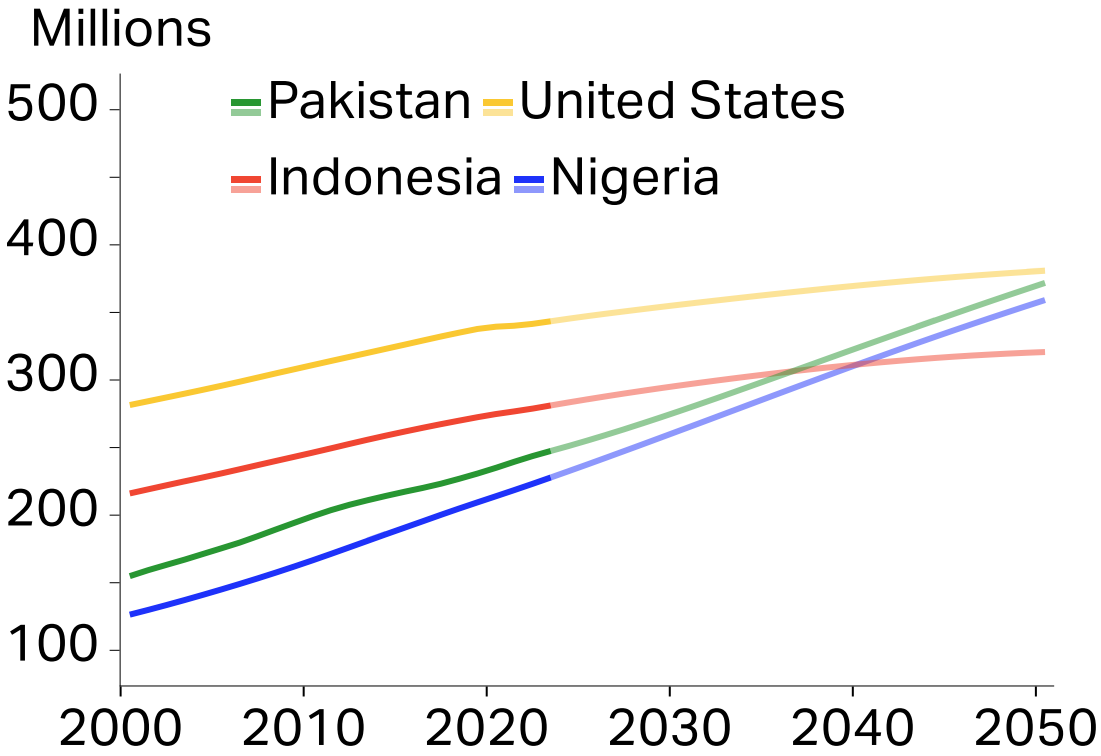


Source: IATA Sustainability and Economics, Macrobond using data from IMF

Asia Pacific accounts for four out of top six most populous countries

Population growth of top six countries in 2050



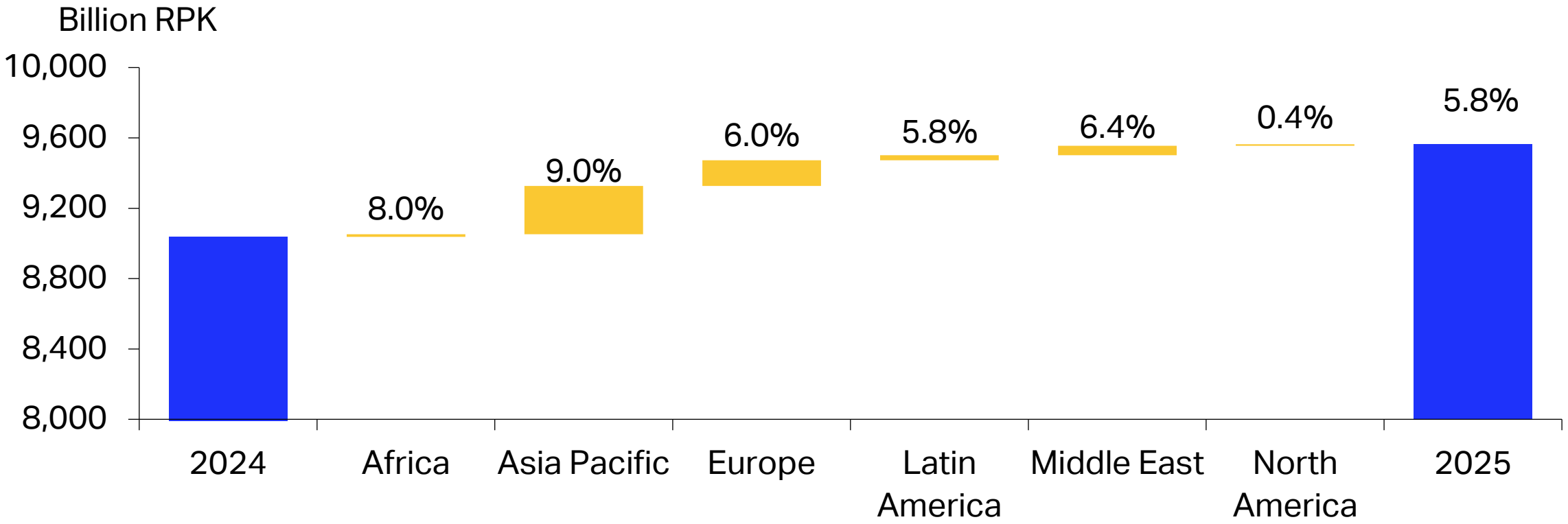


Source: IATA Sustainability and Economics, Macrobond using data from UN Department of Economic and Social Affairs

Global passenger traffic to grow by 5.8% in 2025

Asia Pacific to account for 52% of the industry's growth

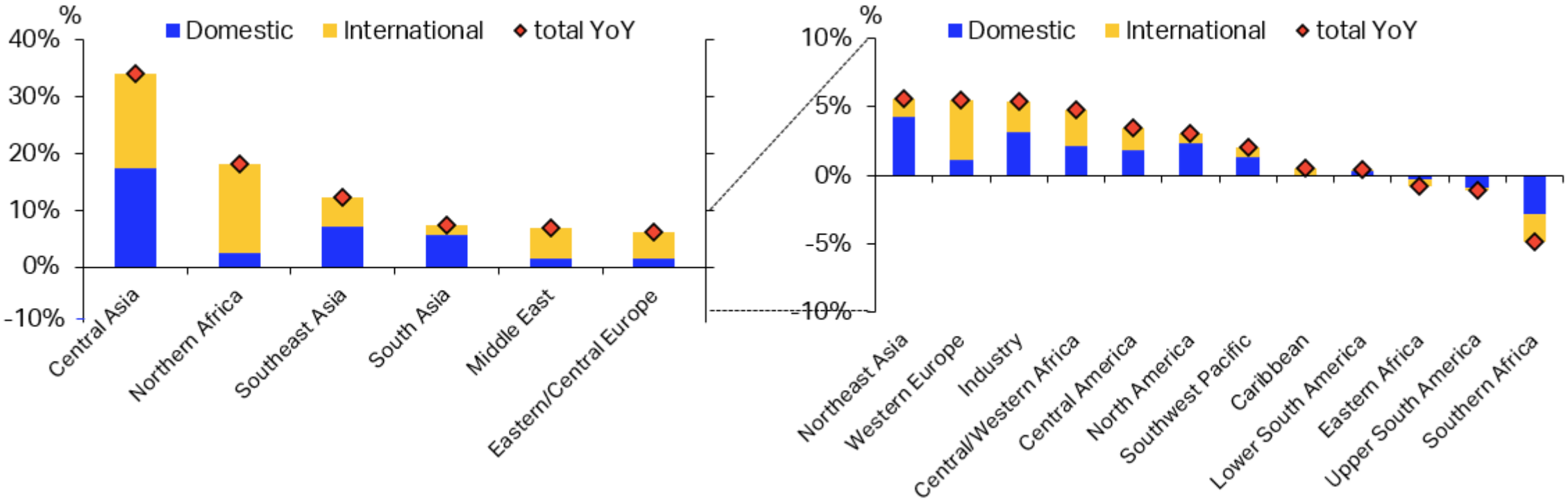
Contribution to passenger traffic growth by region, billion RPK, annual growth, %



Source: IATA Sustainability and Economics, IATA Information and Data – Monthly Statistics

Asian markets lead growth in passenger traffic in Q1

Total passengers by sub-region of traffic origin, Q1 2025, %

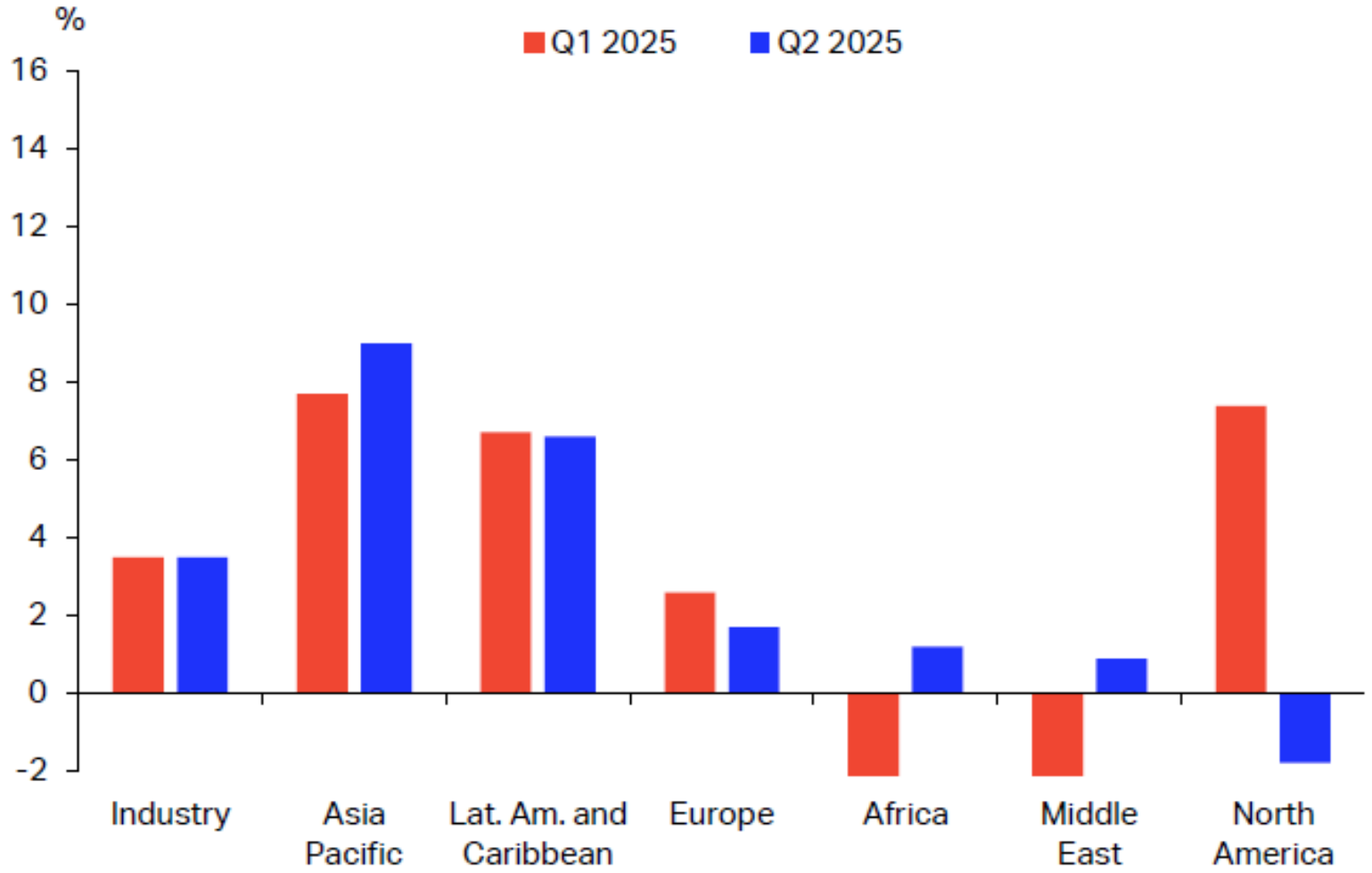


Note: The bar segments represent the contribution of international and domestic traffic to the sub-regional total growth.

Source: IATA Sustainability and Economics, DDS

Asia Pacific carriers led growth across regions

International CTK by airline region of registration, YoY, %



Source: IATA Sustainability and Economics using data from IATA Information & Data, Monthly Statistics

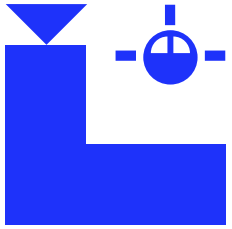
CHALLENGES

Policy Framework & Industry Leadership

Key Issues and Topics

Capacity Building

Supply Chain



Airport & Airspace

Transitioning to Sustainable Aviation

Sustainable Aviation Fuels (SAF)

CORSIA Eligible Emissions Units (EEUs)

CAPACITY

Airspace, Airport and Supply Chain

Airspace Capacity improvements needed

Bay of Bengal airspace capacity

- Old 10-minute separation rules caused delays, especially for SIN-Europe night flights.
- One country switched to 50NM separation earlier; the second followed in July 2024.
- A 30NM trial for aircraft with advanced systems starts 12 Aug 2025.
- Planning is underway for more flexible routing options.

South China Sea airspace constraint

- Outdated route structures and large separation standards limit capacity.
- ICAO-compliant reductions and Performance-based Navigation (PBN) adoption could improve flow.
- Air Traffic Flow Management (ATFM) used to manage congestion, but new routes face frequent rejections.

Regional trends on **Airport Development** present challenges and opportunities

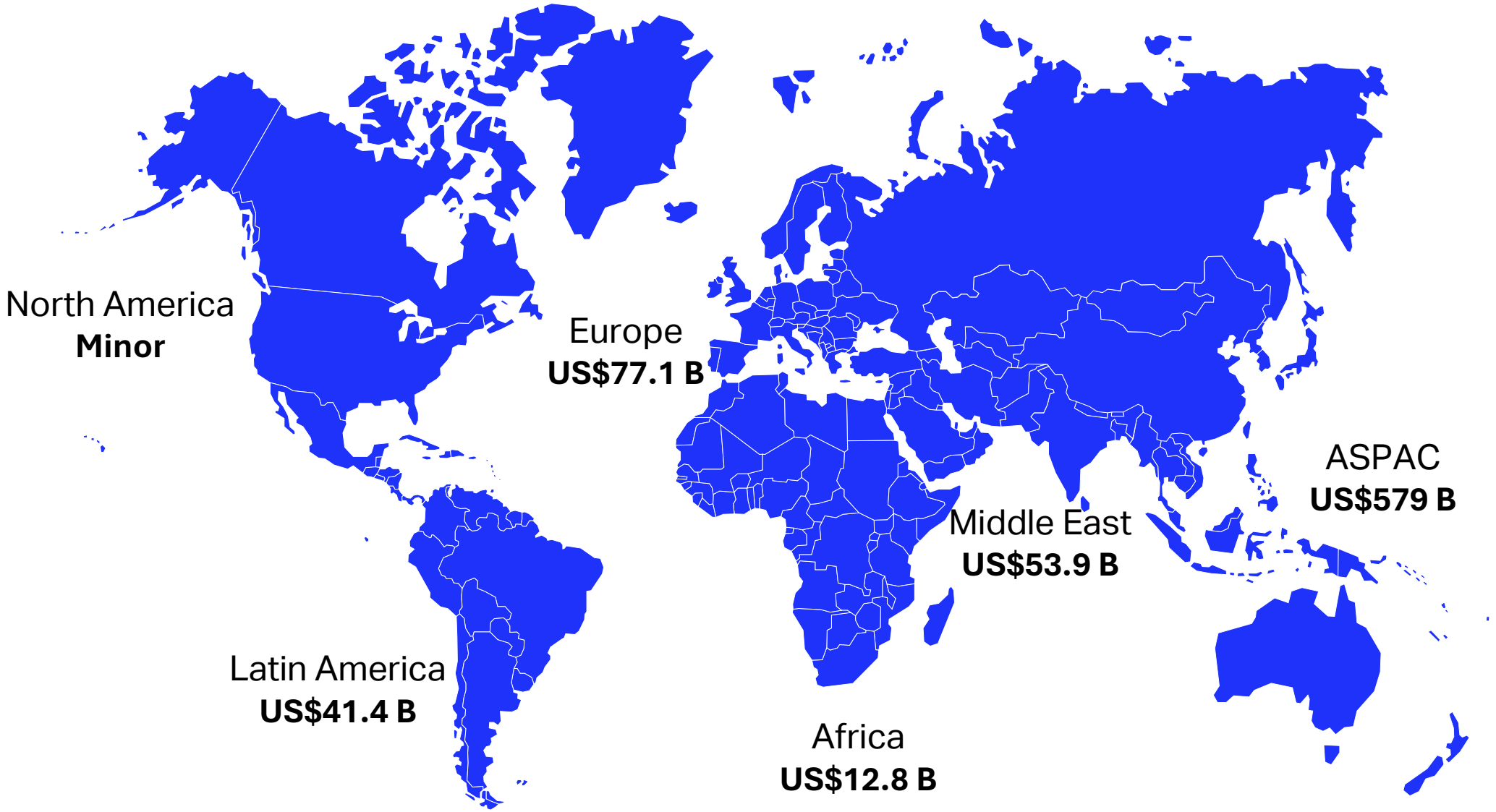
Industry forecasts predict over US$2.4 trillion of airport capex forecast by 2040, over half in ASPAC to address capacity constraints and congestion

Lack of effective economic regulation to incentivize efficiency, service quality and consumer focus is a growing issue

Privatization resulting in long terms airport Concessions and expansion projects focused without sufficient user involvement in the planning stages

Focus on sustainability – “green investments” and enhanced resiliency

Greenfield airports CAPEX – ASPAC leads the way

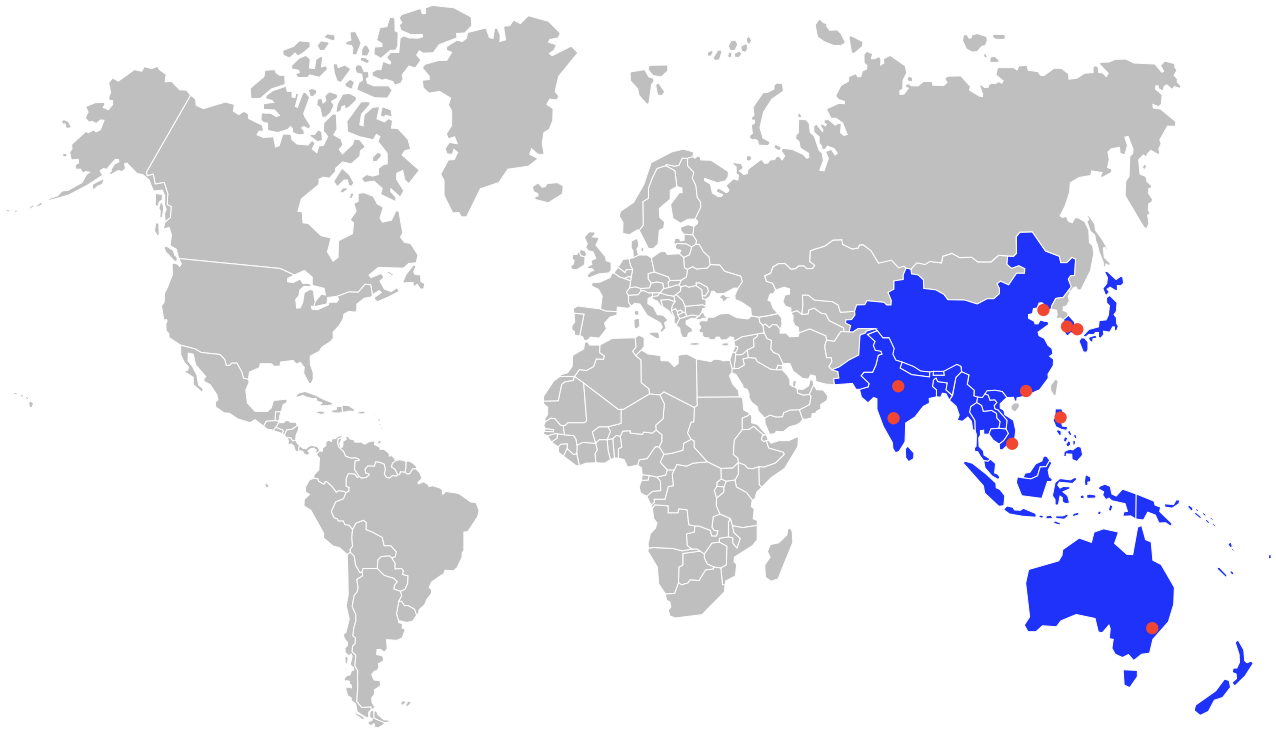


Estimated CAPEX on Greenfield Airports per Regions to 2040

Location of new airport projects in ASPAC

90 new airports under construction or planned (including the world's most expensive greenfield airport)

Airport	Costs (USD billion)	Country/ Territory	Expected Completion date
Long Thanh International Airport	16.79	Vietnam	Sept 2026
New Manila International Airport	14.0	Philippines	Delayed to 2028
Beijing Daxing International Airport (Expansion)	13,80	China	31-Dec-2025
Gadeok Island Airport	10.10	South Korea	31-Dec-2029
Western Sydney International Airport	8.40	Australia	Early 2026
Guangzhou Baiyun International Airport (Expansion)	7.56	China	31-Dec-2035
New Daegu Airport	7.10	South Korea	31-Dec-2030
Shanghai Pudong International Airport (Expansion)	5.2	China	31-Dec-2027
Kunming Changshui International Airport (Expansion)	9.1	China	31-Dec-2030



Source: CAPA – Center for Aviation Construction Database (ACD) Jul. 2024

Airport Development Opportunities and Learnings

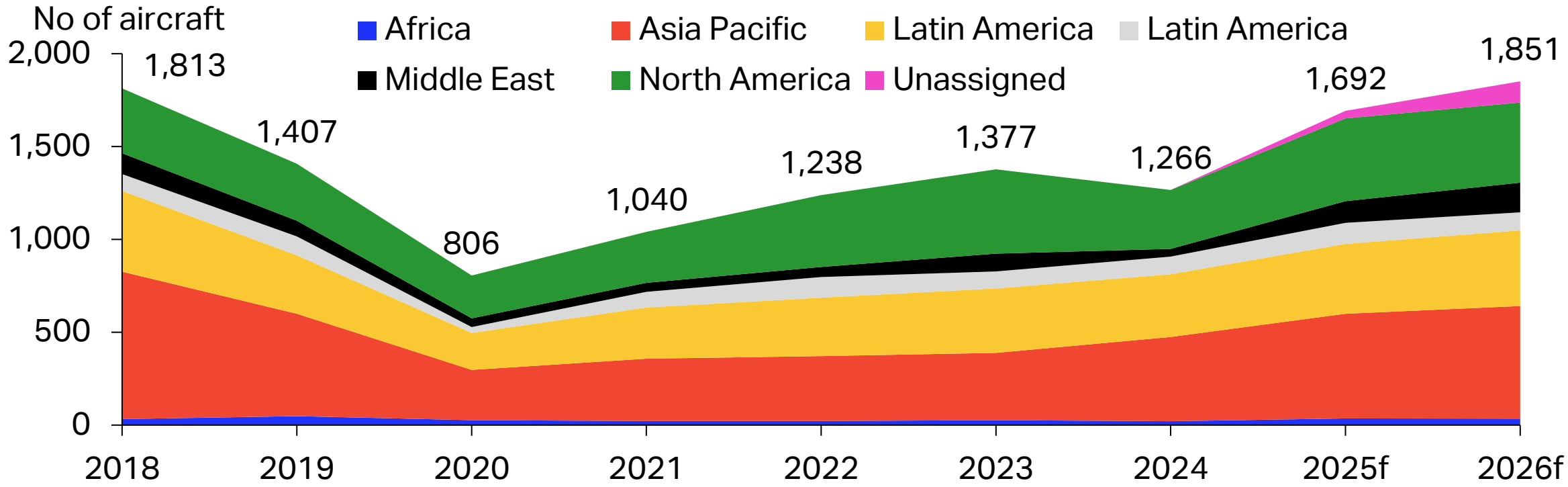
Airport capex has a major impact on users – airport charges, operations and passenger experience. Aligning with airline on their needs from an early stage in the design and development process improves efficiency and customer experience

Robust, independent economic regulation developed to protect consumers and users from airports with significant market power is important to create the right incentives and behaviors

Applying industry best practice standards and guidelines to drive innovation and efficiency e.g. IATA Airport Development Reference Manual, OneID

Aircraft capacity constraints will persist in 2025 and beyond

Aircraft deliveries by region



Source: IATA Sustainability and Economics, Cirium Fleets Analyzer

* May 2025 update

Grounded Aircraft, Missing Engines

- About 15% of the global fleet is in storage — above long-term average of 12%.
- Of these ~1,100 aircraft are younger than 10 years, and most of these jets are parked due to engine issues.
- 69% of young fleet in storage linked to PW1000G engine problems.
- Utilization is near 2019 peaks—airlines are flying everything that can fly
- The demand is ready, the passengers are ready — but the aircraft and engines are still catching up

Supply Chain Pressures on Maintenance

- Airlines are grappling with a perfect storm of supply chain bottlenecks
- What's driving the problem:
  - Skilled labor shortage
  - Parts delays and raw material constraints
  - Clogged MRO shops and poor forecasting
  - Spike in maintenance demand post-COVID recovery
- The result?
  - Rising costs
  - Lower technical reliability
  - Delays in network recovery and growth

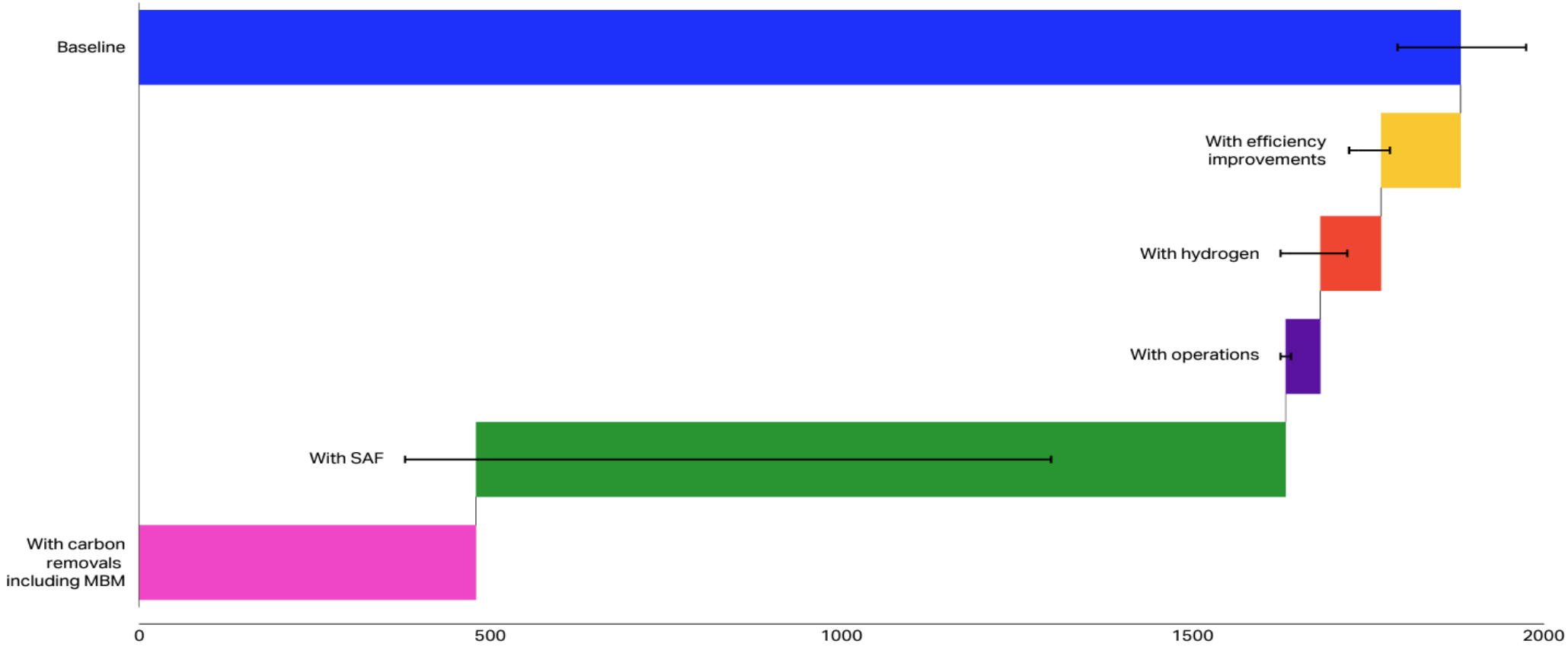
We call on OEMs to step up in collaborating with airlines, resolve supply chain bottlenecks, and deliver on commitments to get fuel-efficient aircraft into service.

Sustainability

SAF is key driver to achieve Aviation Net Zero CO_2 emissions by 2050

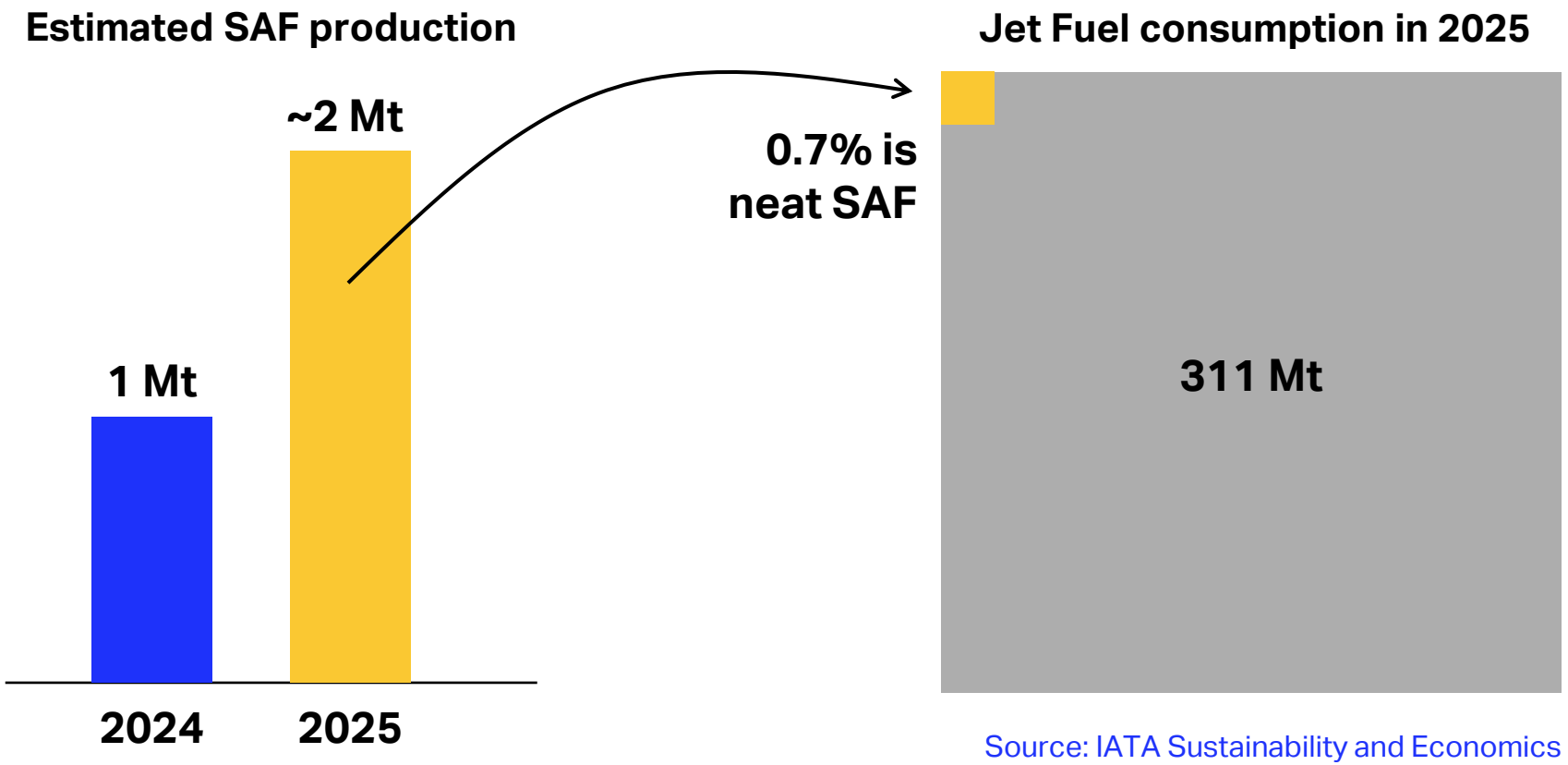
- SAF is expected to have the largest contribution to aviation CO_2 emissions reductions
- Absence of effective policies would severely limit the contribution to LTAG from SAF

Reductions in aviation CO_2 emissions in 2050, by source, Mt



Source: IATA Net Zero Roadmaps

SAF production status

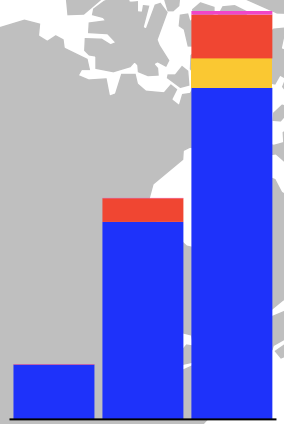


Source: IATA Sustainability and Economics

- **SAF production is expected to double** in 2025, but the share remains very small in the jet fuel pool.
- Around **1.2 Mt** of SAF is required to cover the **EU and UK mandates in 2025.**

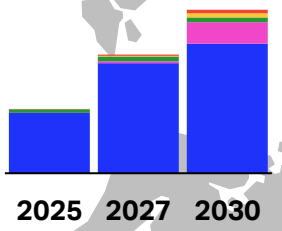
Projects and SAF Pathways to 2030

Renewable fuel capacity* by region (~55 Mt (71 bl) globally by 2030)**



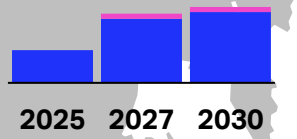
Americas

30 Mt (39 bl)
50 projects



Europe

12 Mt (15 bl)
64 projects

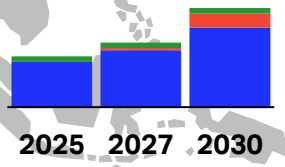


North Asia

5 Mt (6 bl)
13 projects

Africa & Middle East

0.6 Mt (0.8 bl)
5 projects



Asia Pacific

7 Mt (9 bl)
28 projects

- HEFA
- AtJ
- Co-process
- FT
- PtL

Source: IATA Sustainability and Economics

** Renewable fuel capacity of projects with current or upcoming SAF production capability*
*** bl: billion liters*

All parties have a part to play

Supporting pathway to Net Zero

- Governments and other stakeholders need to step up to support SAF production within Asia Pacific and to create a successful SAF market

Abatement of existing emissions

- CORSIA has been adopted as the single, consistent and global carbon offsetting scheme.
- Industry expected to abate 140m metric tonnes of CO2 for period from 2024-2026

A successful transition is only possible if governments, OEMs, airlines, airports and other stakeholders take tangible steps to support SAF and CORSIA, while expediting renewal of fleets with fuel efficient technology

CREATING THE FUTURE

Innovation and Standards

A Seamless Future

One ID
ONE Record

One ID

Transforming the Passenger Travel Experience with Digital Identity and Biometrics

IATA One ID

Future passenger journey

Digitalization of admissibility

Government

Travel Documents

Approval to travel notification

Approval to travel notification

Confirmation of readiness to travel

Airline

Contactless travel

1. Preparation for trip

2. Get Approval

3. Ready to fly

4. Share face image

- Live Biometric Face Image
- Journey Details Information

Contactless process prepared

Airline/Airport

5. Bag drop

6. Security check

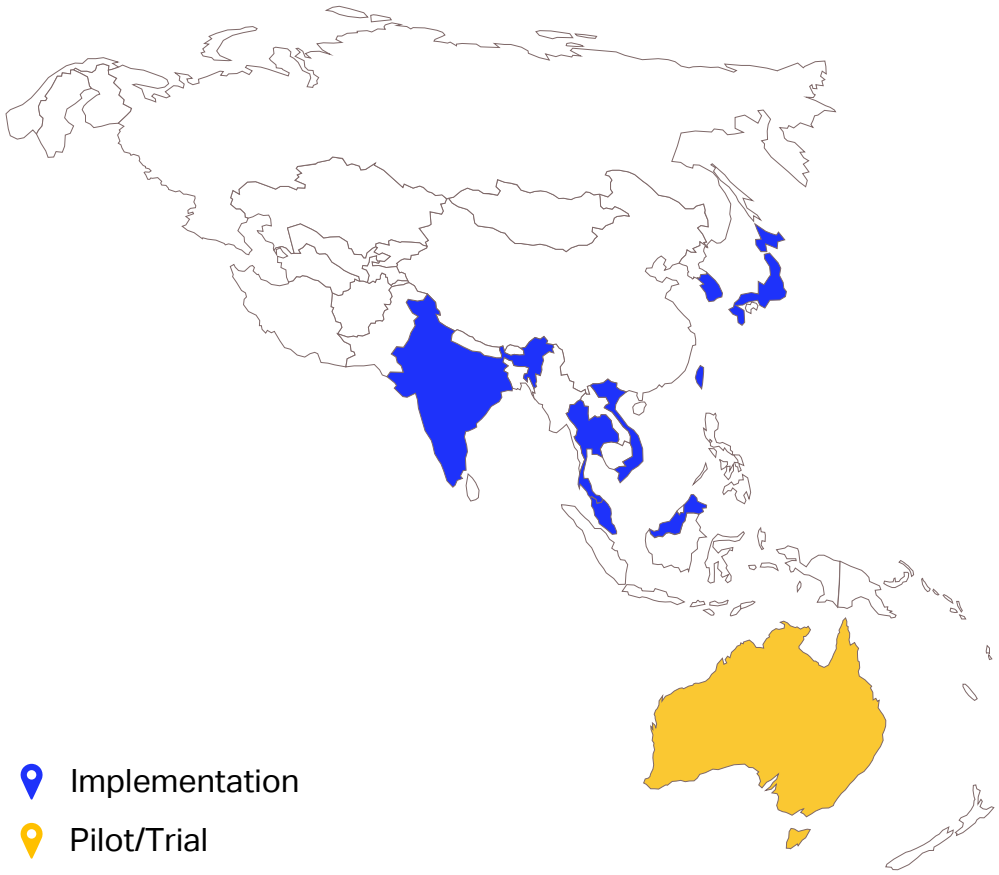
7. Border control*

8. Boarding

*Border control is out of One ID standards scope and passengers may be required to show their physical passport by the authority

IATA

Snapshot – Contactless Travel



Implementation

Pilot/Trial

Hong Kong – International (Flight Token)

India – Domestic (Digi Yatra)

Japan – International (Face Express)

Malaysia – Domestic, International (EZPaz, FACES)

Singapore – International (FAST)

South Korea – Domestic, International (SmartPass)

Thailand – Domestic, International (Automated Biometric Identification System)

Vietnam – Domestic (VNeID)

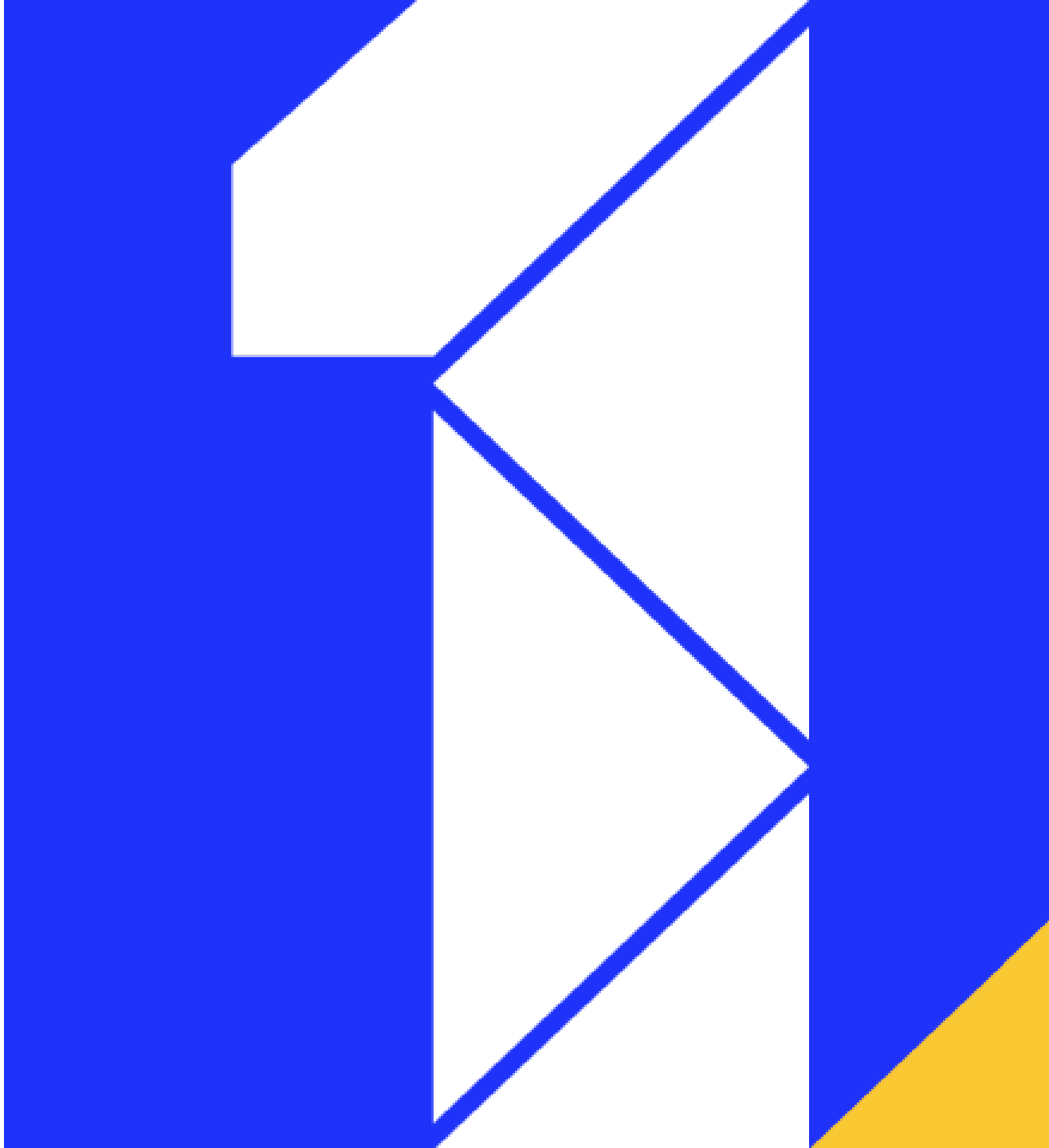
Australia – International

Philippines - Domestic

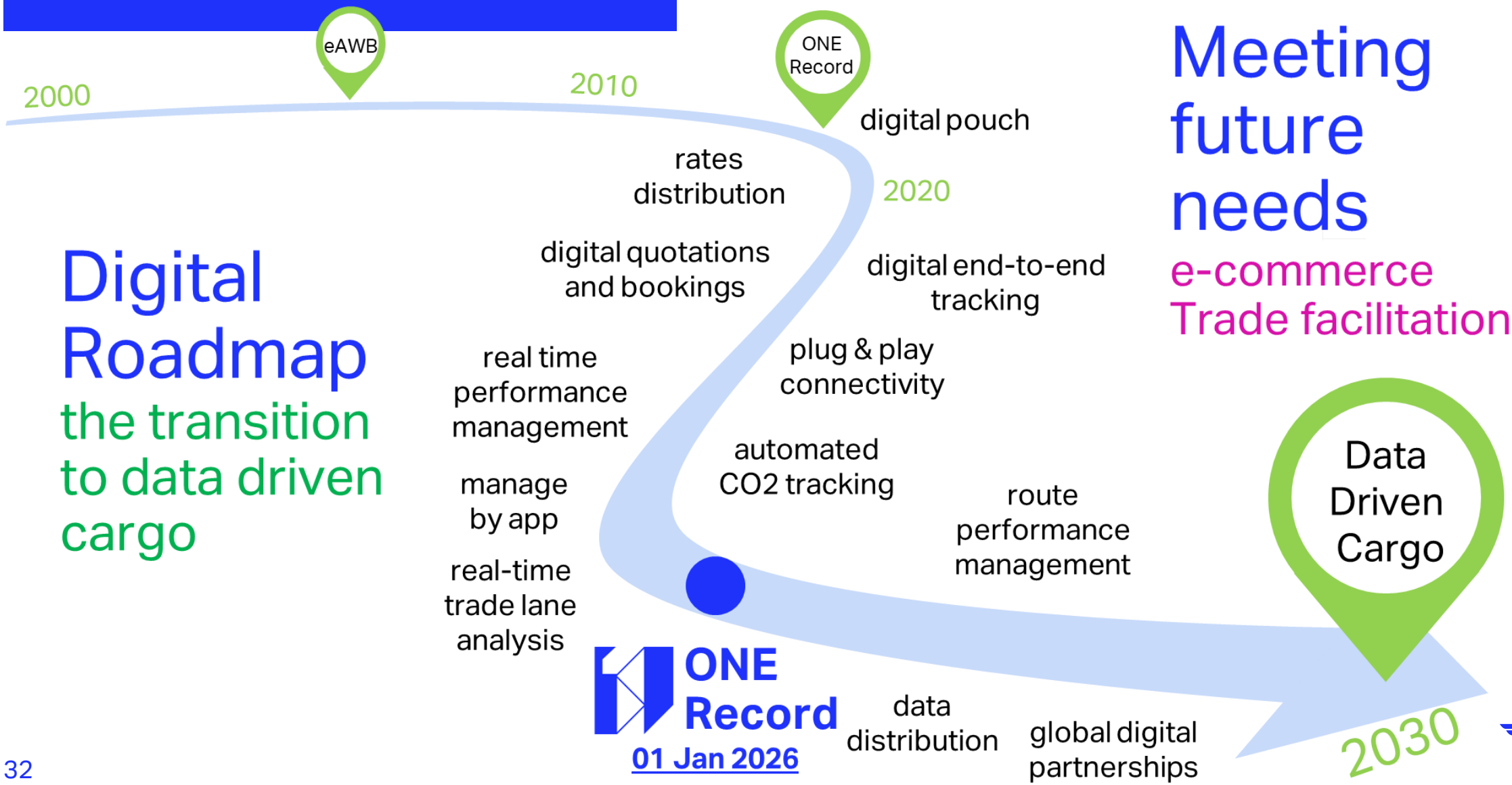
Many airports in Asia-Pacific have adopted biometric technologies to streamline passenger processing. Currently, there is no interoperability between different locations i.e. localized implementations.

IATA is introducing a **cargo messaging exchange standard** and **not a platform**.

The **ONE Record standard** establishes a unified **data model** for information shared through standardized **web APIs**.



Cargo Operations



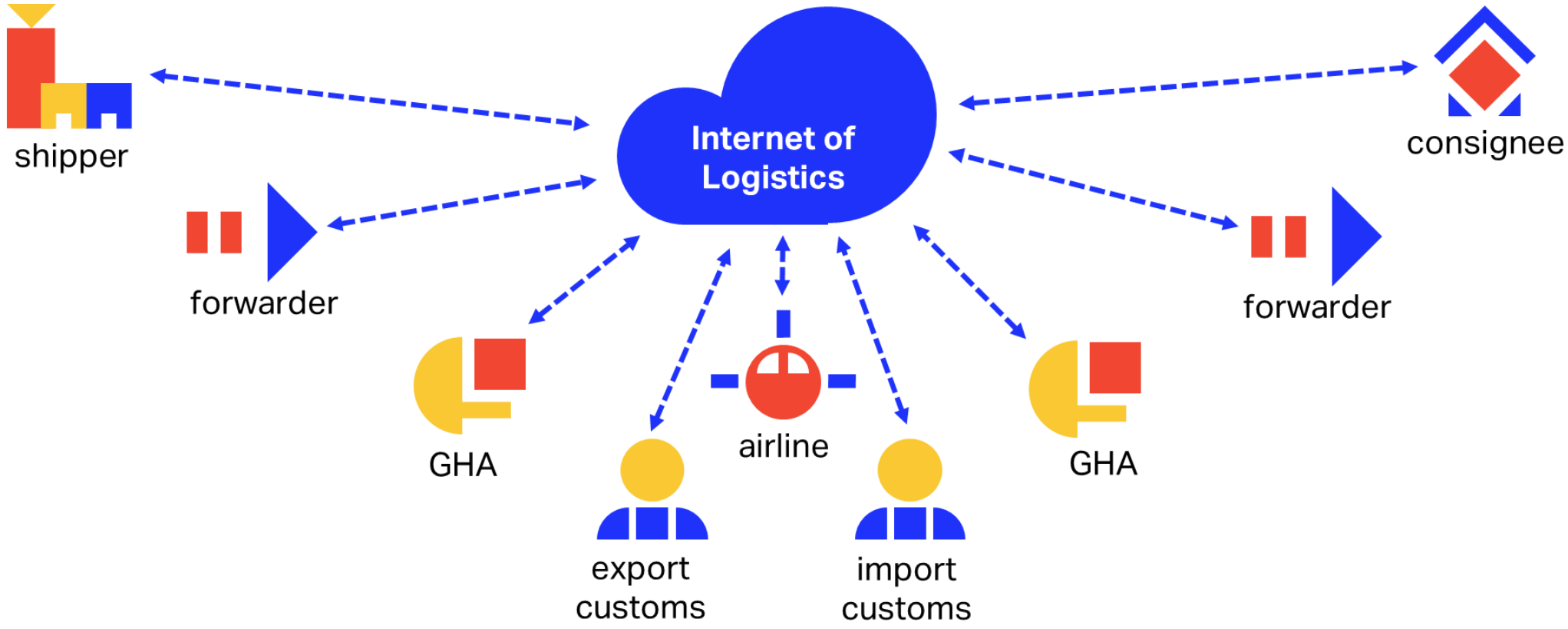
Digital Roadmap

the transition to data driven cargo

Meeting future needs

e-commerce
Trade facilitation

ONE Record: Internet of Logistics



Internet of Logistics – exchange logistics data over the internet, using ONE Record protocols

Data in Aviation

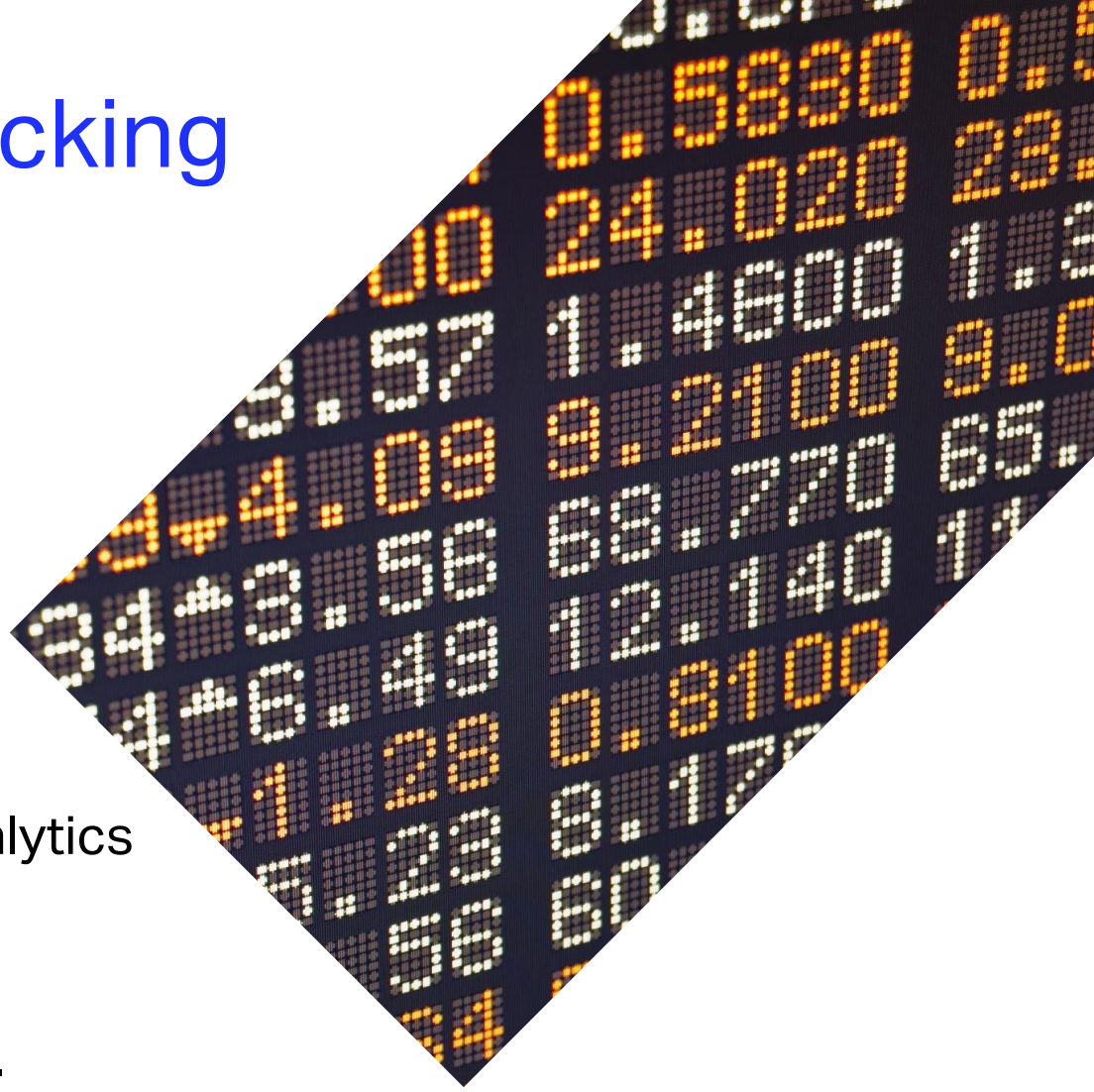
Opportunities Enabled by Data in Aviation

- Predictive maintenance and operational efficiency
- Enhanced passenger experience through personalization
- Air traffic management and route optimization
- Sustainability gains via fuel efficiency and emissions tracking
- New technologies: AI, machine learning, IoT in aviation, Data visualization

In Asia Pacific:

- Rapid digitalization in emerging markets (data collection increase)
- Smart airport initiatives (e.g., Singapore Changi, Incheon Airport) (Tech Environment)
- Regional innovation hubs and startups (Tech environment)

Challenges and Barriers to Unlocking Data Value



- Data fragmentation/Silos and lack of interoperability
- Regulatory complexity and cross-border data sharing
- Cybersecurity and data privacy concerns
- Legacy systems and infrastructure gaps (e.g. operations/distribution/logistics)
- Difficulty in operationalization and scaling
- Skills and talent shortages in ML/data science and analytics

In Asia Pacific:

- Diverse regulatory environments across countries (i.e. Difficult access to data)
- Infrastructure disparities between mature and emerging markets

AI in the Aviation Industry

AI is changing the Aviation Industry on the full value chain. Some examples:

Customer Satisfaction

- Personalization, PAX segmentation
- Baggage handling
- Cabin baggage prediction
- Gen AI (chatbots)

Ground Operations

- Ops optimization
- Baggage profiling, offload prediction
- Air Traffic Management optimization

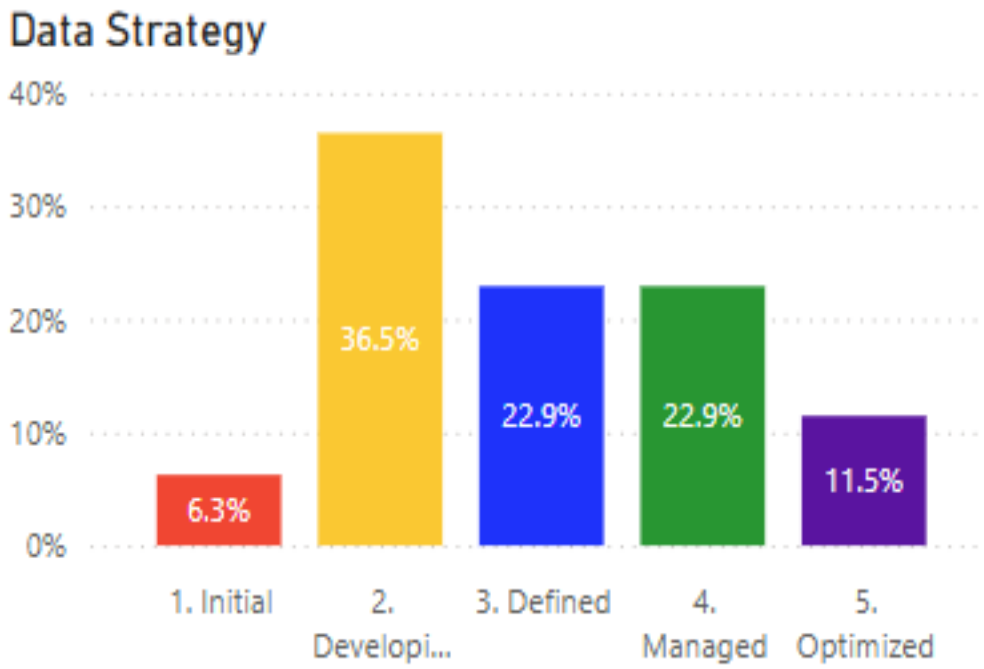
Flight Operations

- Route optimization
- ATM optimization
- Crew management
- Flight Safety management

Sustainability

- Environmental impact cases
- Contrail prevention
- Fuel burn optimization

Data Maturity in Aviation



Data Strategy maturity distribution. Most of airlines consider themselves in early stages in their journey.*

*2025 Data Maturity Survey, IATA

The Economist Topics Current edition More

Regulating the internet giants

The world's most valuable resource is no longer oil, but data

The data economy demands a new approach to antitrust rules

IATA Data Solutions

- IATA Turbulence Aware
- IATA CO2 Connect
- Global Aviation Data Management (GADM)
  - IATA FDX
  - IATA IDX
  - IATA MCX
- Schedule Data Exchange Program (SDEP)

- **Collaboration across stakeholders is key to unlocking value.**
- **Investing in data governance, talent, and infrastructure is non-negotiable.**
- **We must move from data collection to data activation.**

Thank you