**IATA
GLOBAL
MEDIA DAY**

Air Cargo

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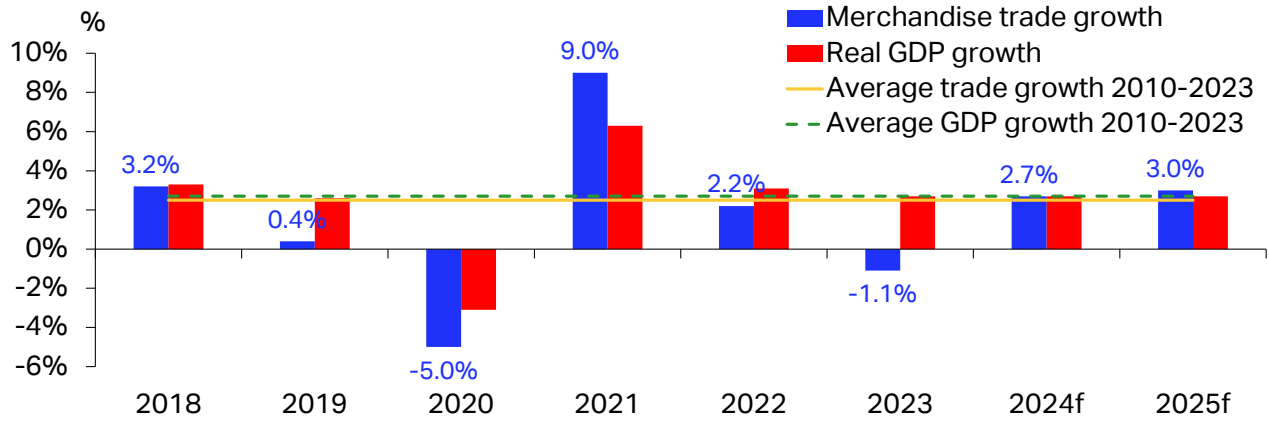Global Head of Cargo

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Cargo Industry Outlook

Ghislaine Lang

Economist, IATA Industry Analysis

Trade and GDP experience steady growth globally

World merchandise trade volume and GDP (constant prices), % YoY

Legend:
- Merchandise trade growth
- Real GDP growth
- Average trade growth 2010-2023
- Average GDP growth 2010-2023

Data labels (Merchandise trade growth):
- 2018: 3.2%
- 2019: 0.4%
- 2020: -5.0%
- 2021: 9.0%
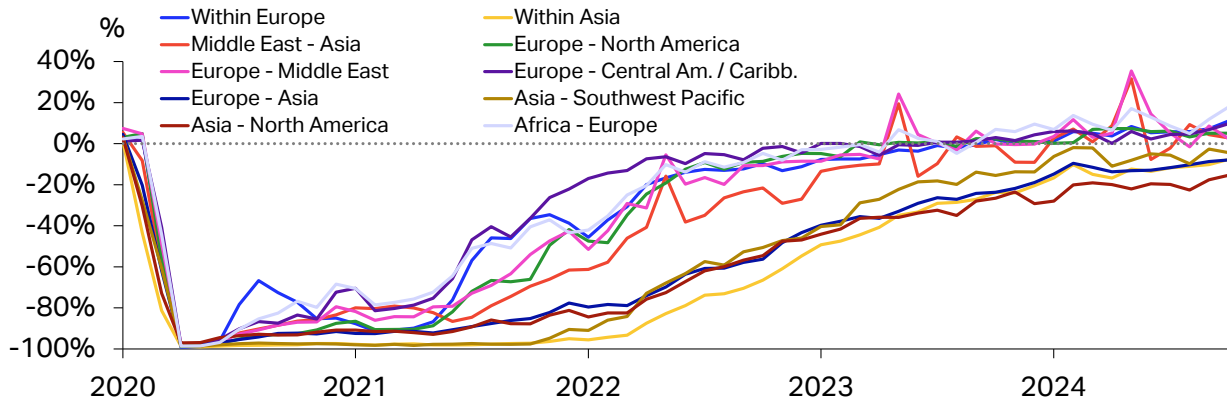- 2022: 2.2%
- 2023: -1.1%
- 2024f: 2.7%
- 2025f: 3.0%

Source: IATA Sustainability and Economics using data from WTO Global Trade Outlook and Statistics, October 2024

Passenger demand keeps growing but more slowly
Routes connected to Asia Pacific still lag others

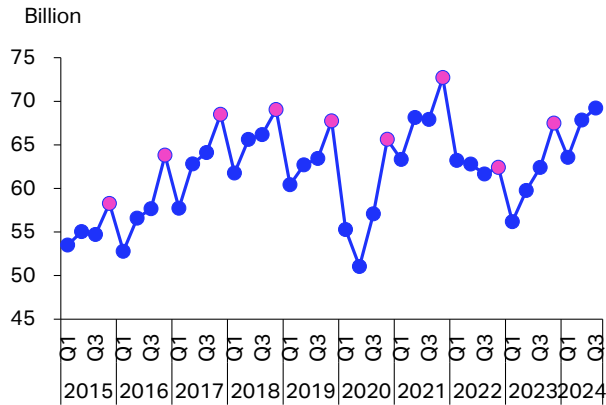**Top 10 passenger route areas, international RPK, % change versus 2019**

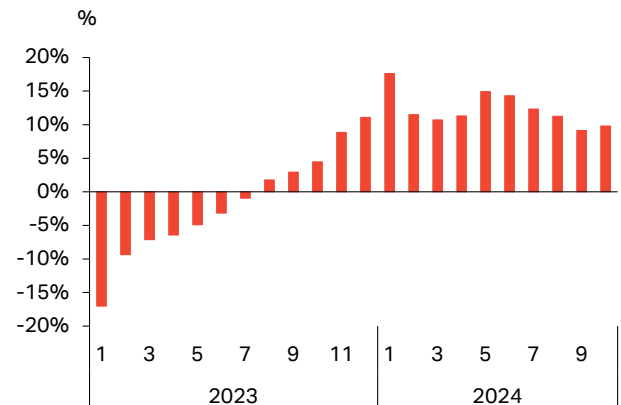Source: IATA Sustainability and Economics using data from IATA Information and Data

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Air cargo will see record demand in 2024

Industry CTK, billion

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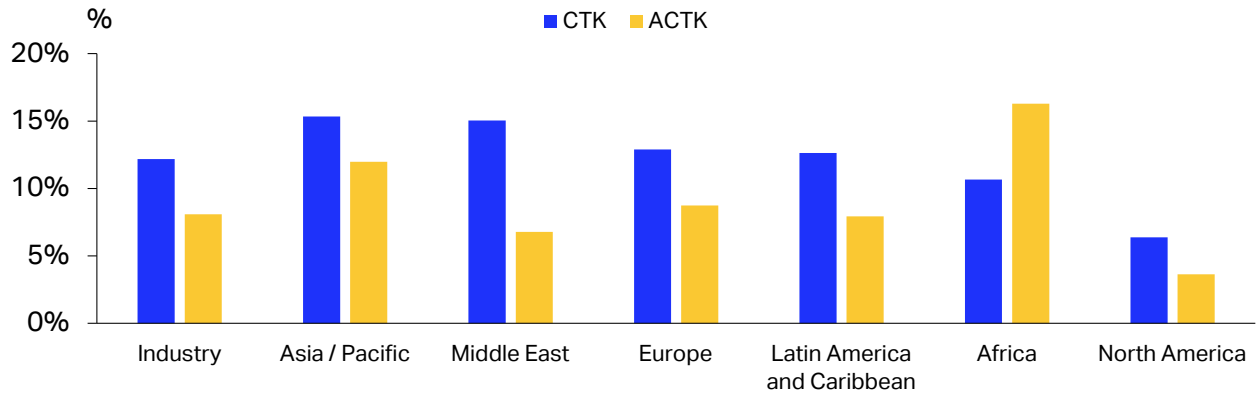Information and Data - Monthly Statistics

Industry CTK, % YoY

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

This year has seen market expansion across all regions

CTK and ACTK by airline region of registration, 2024 year-to-date (Jan – Oct), % YoY
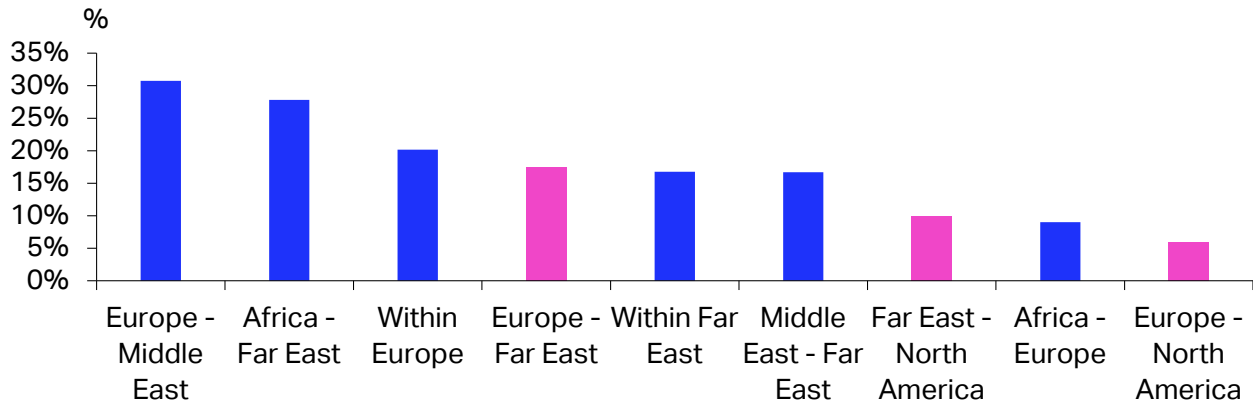

Source: IATA Sustainability and Economics using data from IATA Information and Data - Monthly Statistics

Demand growth across all major route areas

International CTK by selected major routes, 2024 year-to-date (Jan – Oct), % YoY

Source: IATA Sustainability and Economics using data from IATA Information and Data

Freighters hold high market share on transpacific route

International CTK by major route and cargo business type, year-to-date (Jan – Oct), % of total
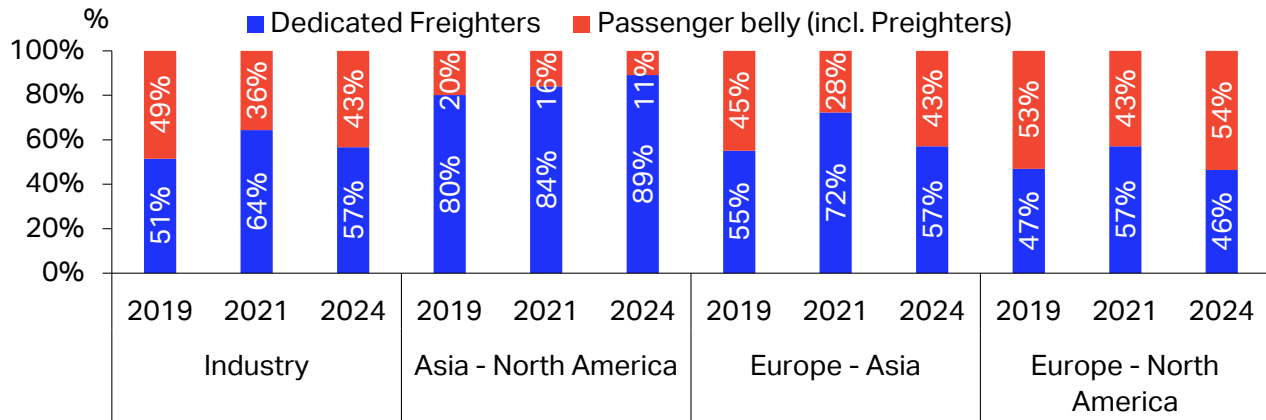
Source: IATA Sustainability and Economics using data from IATA Information and Data

Air cargo yields follow a slight upward trend in H2 2024

Industry air cargo yield (with surcharges), % YoY
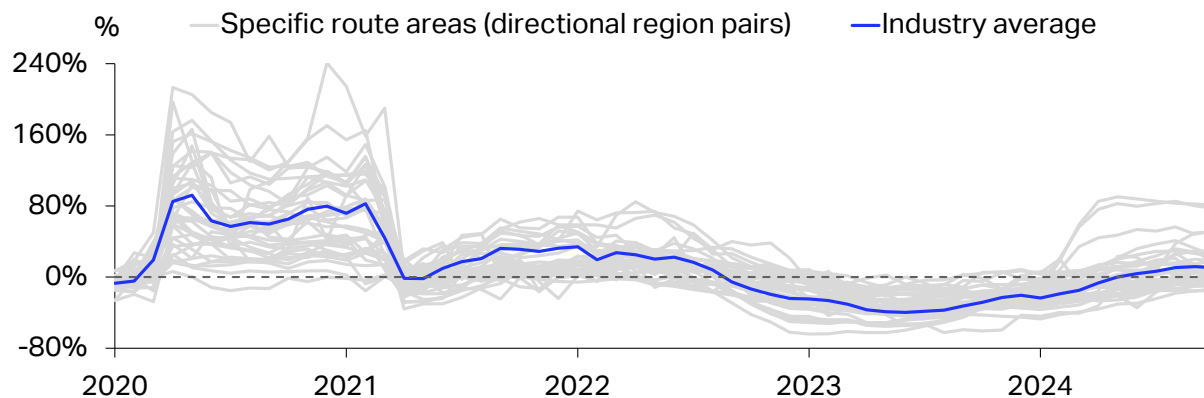
Source: IATA Sustainability and Economics using data from IATA CargoIS

Sharp decline in relative air cargo rates in 2024

The relative price of shipping by air over maritime cargo, USD per kg

Ratio

↓ Air cargo more competitive
↑ Air cargo less competitive

25
20
15
10
5
0

2017 2018 2019 2020 2021 2022 2023 2024
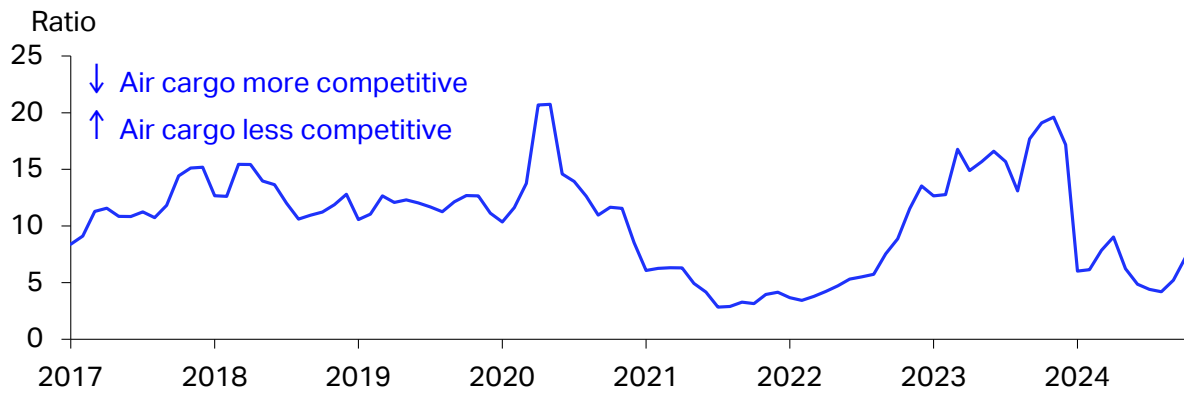
Source: IATA Sustainability and Economics using data from IATA CargoIS, Refinitiv/Freightos Baltic Index

Airline revenue growth is driven by passenger segment

Airline revenue, USD billion

USD billion

Legend: ■ Cargo revenue ■ Passenger revenue ■ Ancillary and other revenue

2021: 61% of 2019
2022: 88% of 2019
2023: 108% of 2019
2024: 114% of 2019
2025: 120% of 2019

Y-axis: 0, 200, 400, 600, 800, 1,000

X-axis: 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024e 2025f
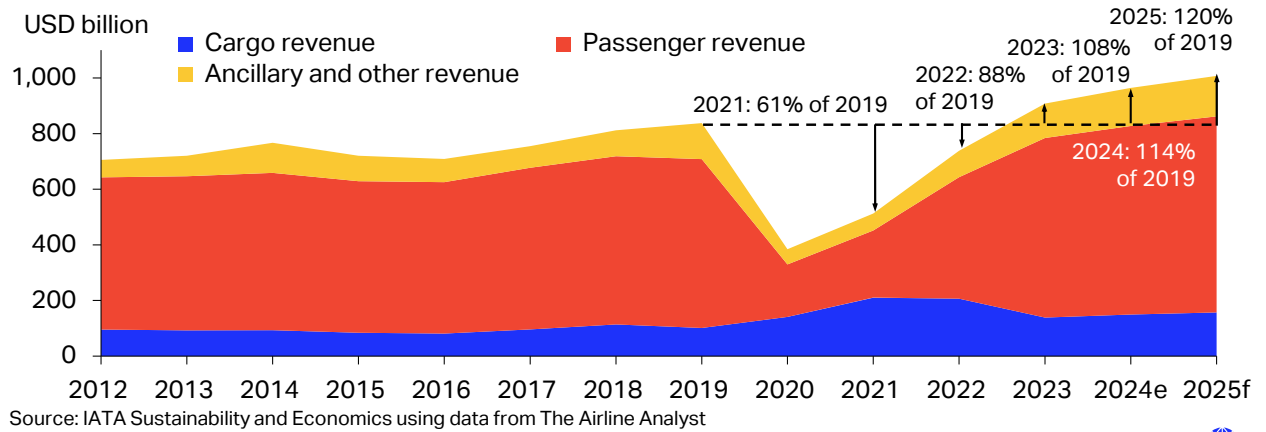
Source: IATA Sustainability and Economics using data from The Airline Analyst

Cargo is moving away from pre-pandemic equilibrium

Airline cargo revenue, USD billion

USD billion

2021: 208% of 2019

2020: 139% of 2019

2023: 137% of 2019

2025: 156% of 2019

2022: 205% of 2019

2024: 148% of 2019

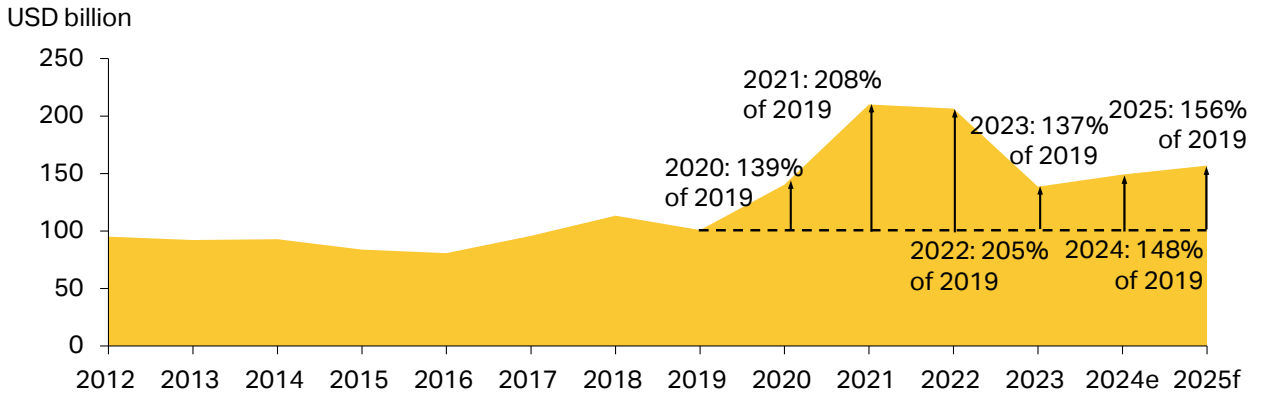Source: IATA Sustainability and Economics using data from The Airline Analyst

An overall "bright" short-term outlook for air cargo
…with tailwinds, headwinds, and many uncertainties

Steady growth outlook for the global economy and goods trade

Policy uncertainty	Changing trade patterns

Air cargo will see record demand in 2024 and continued growth in 2025

Q4 2024 should turn into a record peak season	Booming e-commerce ex-Asia

Supply chain and maintenance issues	Extreme weather events	Geopolitical tensions and social unrest

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Thank you!

economics@iata.org
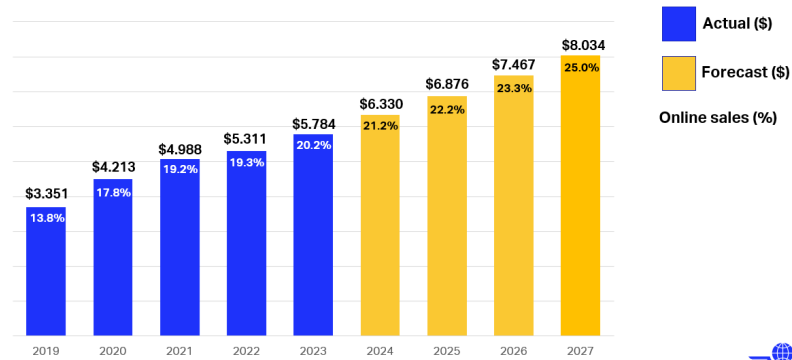
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Air Cargo Priorities

Brendan Sullivan
Global Head of Cargo

E-commerce consumers have a need for speed

Worldwide eCommerce Retail Sales – Still Growing
2019-2027 (Trillion USD)

Legend:
- Actual ($) — blue
- Forecast ($) — yellow
- Online sales (%)

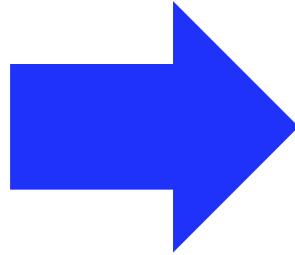| Year	Sales	Online sales (%)
2019	$3.351	13.8%
2020	$4.213	17.8%
2021	$4.988	19.2%
2022	$5.311	19.3%
2023	$5.784	20.2%
2024	$6.330	21.2%
2025	$6.876	22.2%
2026	$7.467	23.3%
2027	$8.034	25.0%

Source: eMarketer

Source: eMarketer

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Digitalization is an air cargo industry priority

Digitalization

Move from the legacy messaging standard that is 50 years old to a data-sharing approach based on web APIs

- To deliver speed, digitalization is crucial
- We need to move from the legacy messaging standard that is 50 years old to a data sharing approach based on web APIs, which is a huge transformation journey for the industry.
- We call these standards collectively the IATA ONE Record standard.

ONE Record is the Key

Provides a Common Global Data Model

Improves communication across the supply chain

Improves visibility and transparency

Enhances quality and Control

Facilitates easier connections

Future-Ready Digital Cargo

One Record delivers …

- **Global Data Model:** Establishes a common data structure facilitating seamless integration across various platforms.
- **Improved Communication:** It provides a standard way for businesses to share data, reducing misunderstandings and delays.
- **Improved Visibility and Transparency:** Offers end-to-end visibility of shipments, enhancing transparency throughout the transportation chain.
- **Enhanced Data Quality and Control:** Enables data owners to maintain control over data quality and access permissions, ensuring data integrity.
- **Easier Connections:** Facilitates direct connectivity between industry stakeholders through web APIs, promoting innovative IT solutions.

ONE Record only works if implemented across the industry

Pilot Programs	• **200+ companies**
Early adopters	• **10 advanced adopters**
Government involvement	• **EU, UN, US, CN, other governments**
Hackathons	• **10 hackathons, 800 experts, 100 projects**
Multimodal cooperation	• **All airfreight is multimodal**
Industry wide adoption	• **1 January 2026**
Solution providers	• **80% of solution providers committed**
Open Source	• **Drive cooperation and resources**

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- We have now over 200 companies involved in pilot projects, with 10 of those scaling to operational initiatives.

Example of ONE Record in action

Cathay Cargo, Airport Authority Hong Kong and IATA achieve world-first with ONE Record shipment from Dongguan for export from Hong Kong

Shipment record shared among all the stakeholders based on ONE Record, including shipment details, security status, progress status, providing full visibility and transparency on the multi modal cargo journey.

Greater Bay Area (GBA)

Cathay Cargo Terminal Dongguan

Hong Kong International Airport

Bangkok

Manila

Tokyo

Challenges:
- Managing data consistency and visibility in multimodal cargo shipments, where different modes of transport often operate in silos.
- Inefficient communication and lack of unified data sharing across stakeholders in air, road, and other modes of transport.

Achievements:
- Successfully implemented ONE Record to share the same shipment data across all stakeholders involved in the multimodal journey.
- Unified shipment records provided consistent details, including shipment information, security status, and progress milestones, regardless of the mode of transport.
- This marks a first-of-its-kind achievement in the industry, demonstrating the feasibility and value of a unified data-sharing standard across multiple transport modes.

Impact:
- Operational Excellence: Reduced redundancies and inconsistencies by ensuring all stakeholders, regardless of transport mode, worked from the same data set. Improved coordination and efficiency across the multimodal supply chain.
- Customer Satisfaction: Delivered unparalleled transparency and visibility to shippers and customers, enhancing trust in multimodal transport services.

Cathay Cargo, Dimerco Air Forwarders and GLS Hong Kong partnered to transport semi-conductor thermal paste and monitor the condition of the shipment using cargo tracking device and real time data sharing via the ONE Record API.

Dimerco was able to access and monitor data from CX IoT technology – i.e., shipment milestones and conditions, such as GPS location, temperature, humidity in near-real-time.
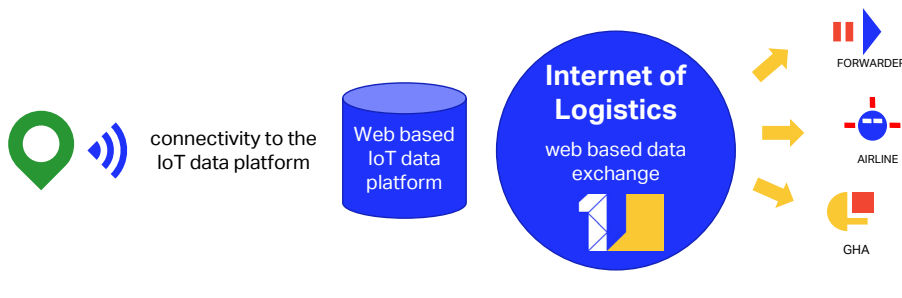
Challenges:

- Monitoring the condition of high-value or sensitive shipments like semiconductor thermal paste during transport.
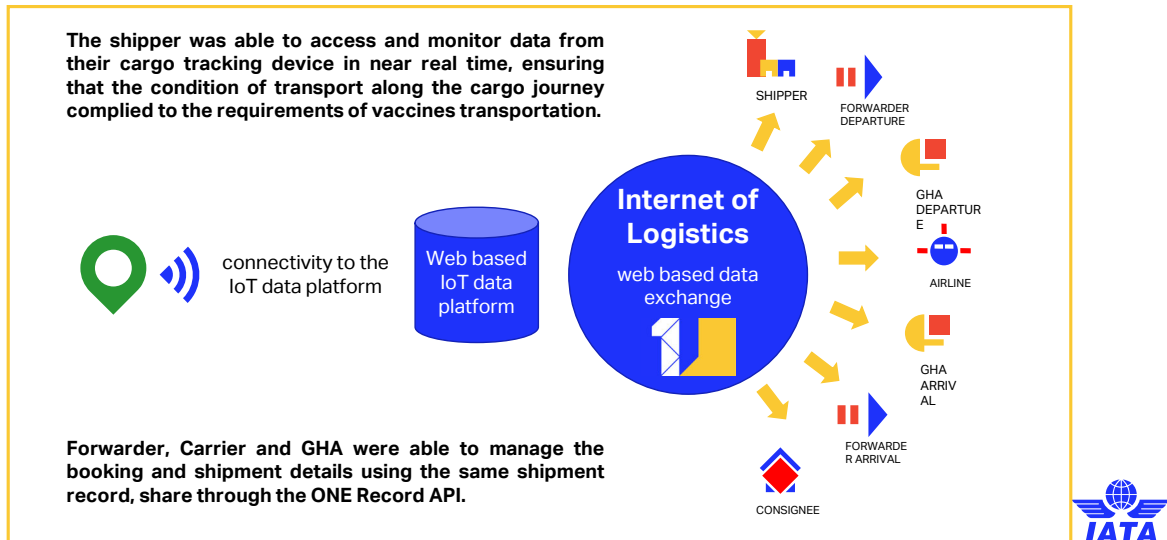- Providing real-time updates on shipment milestones and environmental conditions.

Achievements:

- Successfully used ONE Record API to integrate data from Cathay Cargo's IoT technology, enabling real-time tracking of shipment conditions (temperature, humidity, GPS location).
- Dimerco accessed and monitored near-real-time data, ensuring shipment conditions met specified requirements.

Impact:

- Operational Excellence: Improved monitoring and proactive management of shipment conditions, minimizing risks of damage.
- Customer Satisfaction: Built confidence in the service by ensuring consistent quality and visibility throughout the shipment journey.

Anonymous carrier leveraged on ONE Record data sharing standard to get more visibility and transparency for the transport of temperature sensitive products (vaccines), including real time data from cargo tracking devices.

The shipper was able to access and monitor data from their cargo tracking device in near real time, ensuring that the condition of transport along the cargo journey complied to the requirements of vaccines transportation.

connectivity to the IoT data platform

Web based IoT data platform

Internet of Logistics
web based data exchange

SHIPPER
FORWARDER DEPARTURE
GHA DEPARTURE
AIRLINE
GHA ARRIVAL
FORWARDER ARRIVAL
CONSIGNEE

Forwarder, Carrier and GHA were able to manage the booking and shipment details using the same shipment record, share through the ONE Record API.

Challenges:

- Ensuring strict compliance with temperature control requirements for vaccines during transport.
- Lack of transparency and coordination among stakeholders managing shipment details and milestones.
- Reliance on paper documents, which are prone to errors and inefficiencies.

Achievements:

- Successfully leveraged the ONE Record standard to eliminate the need for paper documents by replacing them with a digital shipment record accessible to all stakeholders.
- Enabled seamless sharing of shipment records among the shipper, forwarder, carrier, and ground handling agents, ensuring that all parties accessed and worked from the same digital data set.
- Provided the shipper with real-time monitoring of critical shipment data, including GPS location and temperature, ensuring compliance with vaccine transport requirements.

Impact:

- Operational Excellence: Eliminated inefficiencies and errors associated with paper-based processes, streamlining operations and reducing manual workload. Improved synchronization and transparency across all parties involved.
- Customer Satisfaction: Enhanced confidence in the shipment process by ensuring visibility, compliance, and data accuracy throughout the journey.

Digitalization Leadership Charter

Developing a unified and collaborative digital strategy

Ensure interoperability and the use of standards like ONE Record across the entire supply chain.

Enhancing organizational resilience

Building cybersecure infrastructure and responsible use of AI.

Pursuing sustainable digitalization

Focus on supporting eco-friendly technology initiatives.

Pursuing digital excellence

Tracking and Staying ahead of digital trends

Using new technology ethically

Embracing emerging technologies responsibly.

Setting new standards for innovation and growth

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- In 2023 the cargo advisory council wanted to see what other methods we could use to accelerate digitalization in the industry, highlight the importance of data-sharing.

- We developed the charter concept with 5 guiding principles and a focus on alignment of stakeholders and harmonization.

- Launched at WCS 2024 with 5 signatories
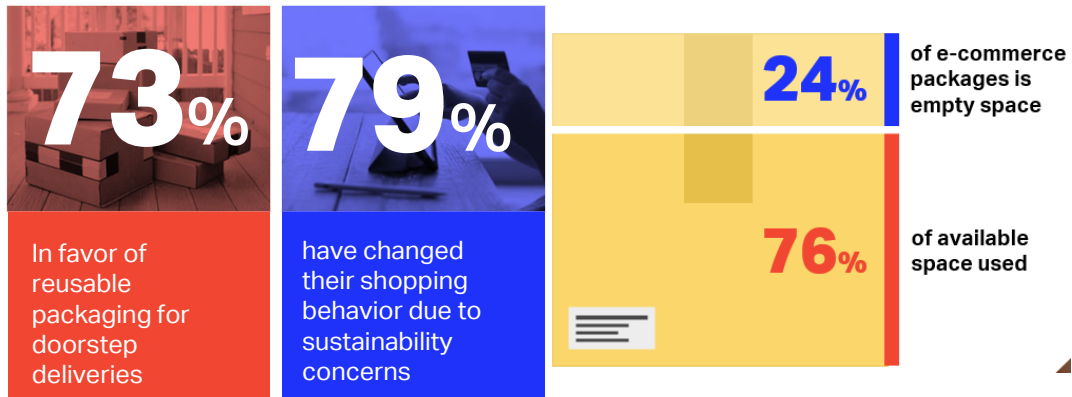
Charter signatories

- We are now approaching 20 with more to come before the end of the year.

- The charter signatories are meeting twice yearly, to discuss ways and opportunities for stakeholder cooperation to further enhance digitalization of the air cargo industry

North Asia Digital Cargo Alliance

- In China, they have also developed the north Asia digital cargo alliance, leveraging the ONE Record Living Labs and leadership in digitalization in north Asia.

Shippers and Customers also Demand Sustainability

73%

In favor of reusable packaging for doorstep deliveries

79%

have changed their shopping behavior due to sustainability concerns

24% of e-commerce packages is empty space

76% of available space used

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Our priorities for air cargo

Contributing to key industry commitments towards net zero carbon emissions by 2050

Reducing perishable loss along the supply chain	**Driving sustainability and efficiency in cargo handling & operations**	**Reducing plastic waste in air cargo operations and enabling circular economy practices**

IATA

- IATA will keep supporting the air cargo industry to reach net zero carbon emissions by 2050, including the promotion of solutions such as the use of Sustainable Aviation Fuels (SAF), accurate CO_2 measurement and reporting, and industry solutions such as the IATA CO_2 Connect tool for cargo.
- In addition to this work, the air cargo industry must focus on reducing its environmental and social impacts. In the short term, IATA has identified three priority areas of work that will be the focus of today's presentation:
  - Perishable loss reduction throughout the supply chain
  - Efficient and sustainable cargo facilities
  - Reduction of plastic waste in cargo operations and the creation of new circular economy models for air cargo components

Priorities

Reduce single-use plastic use

Reduce the amount and thickness of plastic sheets and stretch wrap

Plastic sheeting sizing chart

Use more Reusable items

Procedures for the adequate reutilization of plastic sheeting in good state
Promotion of the use of reusable alternatives

Recycling

Procedures for adequate segregation and recycling

Recommendations for infrastructure and equipment

- Priorities are:
  - Reducing single-use plastic
  - Using more reusable items
  - More recycling

- Best practice in sustainability dictates that the lifecycle of these materials is properly managed.

- This is already happening at the national level. China – by far the world's biggest plastic manufacturer – will implement a national ban on plastic packaging in the logistics industry by 2025. It is already in place in certain specific areas, including Beijing and Guangzhou.

- Some logistics providers are already adopting a smart packaging algorithm that assesses items based on their category, volume, weight, and area, and then matches them to the most efficient form of packaging. But more must be done throughout the air cargo value chain. If changes are not made, the sector will contribute to an estimated 12 billion metric tonnes of plastic waste across the world by 2050. With the need to minimize environmental impact a top priority, the industry must move to more sustainable packaging and shipping practices as part of its license to grow.

Single-use Plastics
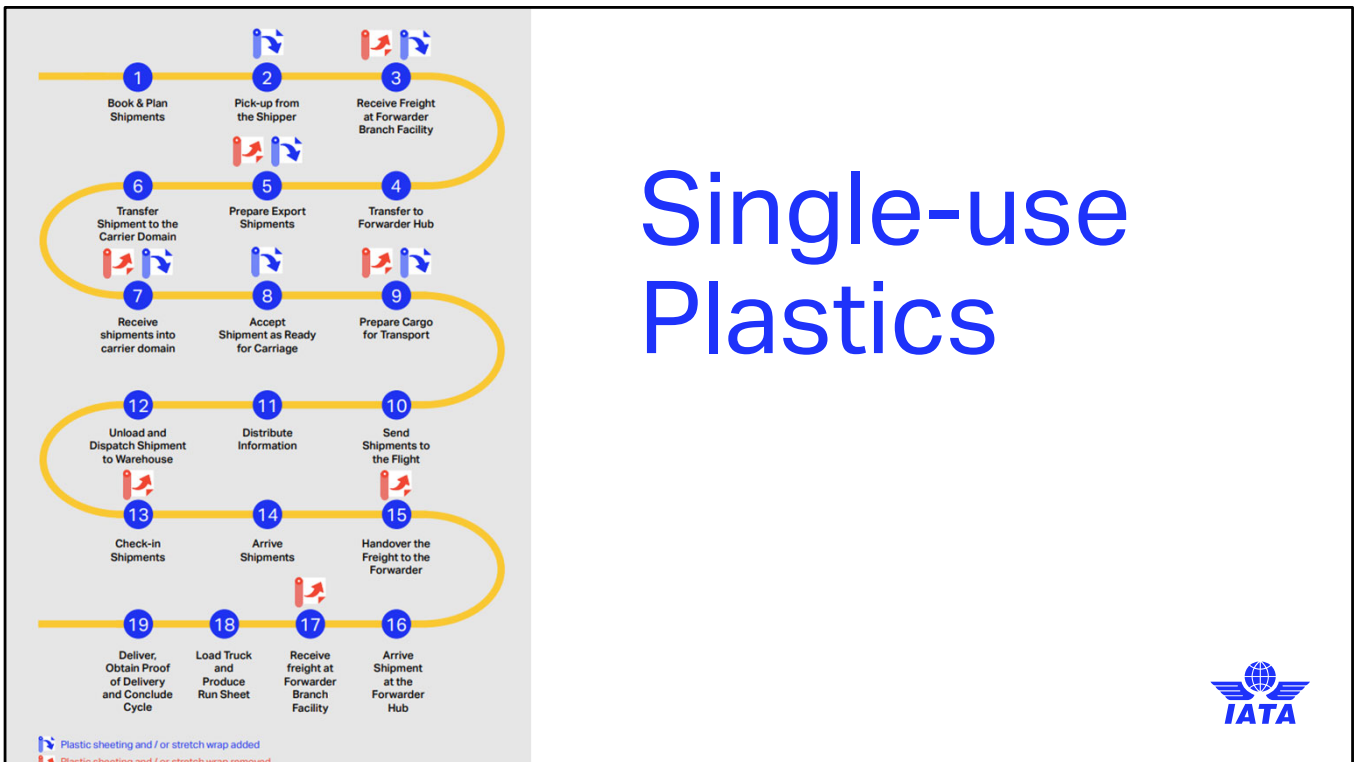
- New guidance material has been developed for the industry to provide clear, actionable steps for reducing and eventually eliminating single-use plastics in cargo handling operations. It covers various aspects, including packaging materials, operational processes, and waste management practices.

- The guidance includes practical recommendations such as switching to reusable or biodegradable materials, optimizing packaging designs to minimize waste, and implementing recycling programs.

- Now incorporated into the standard IATA Cargo Handling Manual, using the steps along the supply chain identified in the Master Operating Plan, demonstrates our commitment to sustainability enhances our industry's reputation and aligns with the growing expectations of customers and stakeholders."

Reducing Perishable Loss

Edition 1 – Released 6 December 2023

Guidance on
Perishable Loss Reduction
in Air Cargo

Globally, one-third of the world's annual food production results in loss.

The Food and Agriculture Organization estimates $940 billion in yearly losses, with 17% wasted during consumption and 14% lost in distribution, all of which result in significant GHG emissions that can be avoided

- Reducing perishable loss is priority.
- 1/3 of the world's annual food production results in loss in the journey from farm to table.
- In particular, 14% of those products are lost during the transport stage.
- The IATA Guidance establishes that:
    - The safe and timely delivery of perishable goods is a priority in air cargo transportation.
    - Identifies three common causes of loss - damage, delays, and transit processes.
    - Offer strategies and best practices essential to mitigating loss along the supply chain
- Strategies include:
- Damage Prevention:
  Maintaining the integrity of perishable goods relies on appropriate packaging, consistent temperature control, and secure handling to prevent vulnerabilities like compression, impact, and moisture. Proper packaging methods and materials like foam inserts and bubble wrap can cushion delicate or fragile terms and reduce the effects of bumps or turbulence. Effective insulation materials, such as thermal liners, insulated wraps, and airtight containers, prevent moisture and temperature fluctuations that could cause spoilage.
- Handling Guidelines: Packages containing fragile or perishable goods should be fitted with appropriate labels to alert handlers of the sensitivity of the contents. Additionally, handlers must receive training to understand the specific requirements of perishable goods and effective loading, unloading, and stacking techniques. Proper documentation, robust inspection systems, maintaining a controlled environment, and collaboration between all parties are also crucial to managing the handling process effectively.
- Tracking and Monitoring: Emerging technology enables air cargo firms to precisely control perishable goods' humidity, location, and temperature throughout their journey. Cargo devices, sensors, and Global Positioning System (GPS) solutions enable real-time tracking and monitoring of product conditions and instantaneous information about the status of sensitive shipments. The technology can also issue alerts for companies to trigger corrective actions.

IATA Air Cargo Device Assessment

PURPOSE

- Streamline & expedite the approval process of air cargo tracking devices & data loggers

- Compliance with the IATA Recommended Practice 1693 Device Approval for Air Cargo

VALUE ADDED

EFFICIENCY	SAFETY	STANDARIZATION
Streamlines the device approval process	Enhances safety by reducing risks from unauthorized devices	Promotes uniform safety practices across the air cargo industry

BENEFICIARIES

Airlines	Airports	Device manufacturers	Shippers	Forwarders	GHAs	IT solution providers

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- The IATA Air Cargo Device Assessment is a validation program designed to streamline and expedite the approval process for manufacturers of air cargo tracking devices and data loggers.

- The assessment ensures that these devices comply with the IATA Recommended Practice 1693, which includes guidelines for device approval related to electromagnetic compatibility and battery safety.

- This is crucial for maintaining the safety and efficiency of air cargo operations.

 N.B. This assessment is not substituting airline approval for device use on board.

Value added for the industry
- Efficiency: Streamlines the device approval process
- Safety: Enhances safety by reducing risks from unauthorized devices
- Standardization: Promotes uniform safety practices across the air cargo industry

LivingPackets Group, a provider of smart, secure, and reusable packaging solutions, has become the first organization to achieve IATA validation for its packaging shipping solution THE BOX.

Shippers want a Secure Supply Chain

Background:

As reported in July 2024, a number of shipments containing unstable incendiary devices, known as Improvised Incendiary Devices (IIDs), were allegedly sent by air cargo in Europe.

The IIDs were reportedly sent inside parcels and consisted of electrical items and liquids that caught fire during transfer to an aircraft and inside a logistics facility.

In September 2024, an EU Member State reported the matter to ICAO as an Act of Unlawful Interference (AUI).

The exact nature of the interference remains classified at national levels and investigations are ongoing.

Based on the reaction from regulatory authorities in the aftermath, these acts were deliberate and designed to cause damage and disruption.

Response and Impact

The AUI demonstrates the evolving threat landscape impacting air cargo and supply chains, underscoring the need enhanced compensatory measures to mitigate emerging risks. IATA is committed to ensuring emerging threats are appropriately addressed.

In response, several States imposed additional security requirements/recommendations for inbound cargo and mail

The response from some States, including requirements for additional security measures, were not appropriately developed and coordinated at the international level.

Industry was not appropriately consulted and engaged in the planning and development phase resulting in the imposition of disjointed and unsuitable measures, some of which were subsequently repealed, reviewed, and replaced.

Some of the additional measures were constrained to geographical regions, shifting vulnerabilities elsewhere.

Air cargo is a diverse and complex sector with distinct intricacies and operational differences between the various supply chain and air carrier models. Some of the additional security measures did not account for these vast operational differences and assumed a 'one-size-fits-all' approach.

Some additional measures imposed by certain States circumvented and disregarded existing international standards which have taken years of international cooperation to develop and implement.

The absence of appropriate pre-decisional consultation (with IATA, our member airlines and ICAO) generated disruption, confusion, logistical and operational challenges and ultimately impeded effective, coordinated response and implementation of appropriate mitigating measures.

IATA is now focused on:

- Ensuring our members are appropriately informed to understand and address the risks posed by IIDs,
- Encouraging better-coordinated, methodical response to similar future events,
- Examine whether existing international framework sufficiently addresses the emerging IID threat.

Thank you

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