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Air Cargo Has a Systems Problem

And it’s not the systems

Designing the Next Generation of Air Cargo Platforms

Executive summary

Air cargo is entering a new phase of structural transition. What began as a system modernization agenda for many airlines is now revealing a deeper operational challenge: how to coordinate cargo across increasingly complex airline networks.

For decades, cargo operations within passenger airlines were often treated as supporting functions, monetizing available belly capacity within passenger networks. Today, however, cargo has become a strategic component of global supply chains while still operating within airline systems designed primarily for passengers.

This tension is becoming increasingly visible. **Cargo organizations face growing pressure to modernize legacy systems, digitize commercial channels, and improve operational visibility across complex airline networks**. Yet many modernization programs are revealing a deeper structural challenge: replacing cargo systems does not necessarily simplify cargo operations.

In many airline groups, cargo flows span multiple airlines, airport infrastructures, and operational partners. Decisions affecting cargo performance often originate outside the cargo organization itself, in network planning, aircraft scheduling, airport operations, or enterprise technology governance. Modernization efforts therefore frequently expose layers of operational complexity embedded within the broader airline operating model.

Across the industry, the most effective cargo transformations are evolving beyond system replacement, reflecting a shift from system modernization to platform design. They are moving toward the design of cargo platforms capable of coordinating operations across complex airline networks.

Through Deloitte's work with aviation and logistics organizations undergoing cargo transformation, we increasingly see this shift taking shape as carriers move from fragmented system environments toward coordinated cargo platforms designed to operate across multi-airline networks.

The future of air cargo will not be defined only by the systems that process bookings and shipments, but by the ability to coordinate cargo flows across carriers, hubs, and operational environments.

Air cargo in a more volatile operating environment

The operating environment for global air cargo has become materially more complex. Volatility is no longer episodic; it is increasingly structural. The sector has moved from pandemic-era demand surges to freight recession and subsequent recovery while continuing to absorb geopolitical disruption and shifting global trade patterns.

According to the International Air Transport Association (IATA), global air cargo demand entered 2026 with continued growth, with cargo tonne-kilometers increasing by 5.6 percent year over year and international CTKs **rising by 7.2 percent** despite uneven performance across regions and trade corridors.[1]

At the same time, structural disruptions are reshaping cargo network economics. The closure of Russian airspace has altered Europe-Asia routing patterns, while geopolitical instability in the Middle East has introduced new operational uncertainty for cargo carriers and logistics providers.

Reporting from Reuters in early 2026 highlighted how regional conflict has affected cargo routings and disrupted high-value trade flows, including pharmaceutical shipments, increasing operational complexity for airlines and freight forwarders.[2]

These developments reflect a broader shift in global supply chains. Similar dynamics are visible across the wider aerospace and logistics ecosystem. Cargo networks are no longer responding only to demand growth; they are responding to an environment where trade lanes shift, geopolitical risks reshape routing options, and operational resilience becomes a competitive differentiator. Deloitte's 2026 Aerospace and Defense Industry Outlook highlights how geopolitical volatility and supply chain disruption are reshaping operating models across aviation and global transportation networks.[3]

In such an environment, cargo platforms capable of adapting quickly to disruption will outperform those dependent on slower or fragmented operating models,

as performance is increasingly determined by how effectively organizations coordinate across fragmented airline environments rather than by individual system capability alone.

1. International Air Transport Association. Air Cargo Market Analysis, January 2026.
2. Reuters. Middle East tensions disrupt air cargo routes and pharmaceutical shipments, March 2026.
3. Deloitte 2026 Aerospace and Defense Industry Outlook

The structural complexity of passenger-airline cargo

Not all cargo operating models face the same transformation challenge. Integrated logistics carriers operate networks designed around freight flows. Dedicated freighter operators, while narrower in scope, still align aircraft deployment primarily around cargo demand.

Passenger airlines carrying cargo operate within a more constrained environment. Unlike integrated freight operators whose networks are designed around cargo flows, passenger airlines generate cargo capacity indirectly through passenger schedules, which means cargo operations must adapt to network decisions they do not control.

In passenger airline networks, cargo capacity is generated primarily through belly space within passenger aircraft schedules. Aircraft rotations, connection banks, and airport operations are designed first around passenger demand, with freight integrated wherever capacity exists.

The structural difference is significant. Belly capacity remains a critical component of global air freight supply. IATA estimates that belly cargo accounts for roughly 55 percent of global air freight capacity, approaching pre-pandemic proportions as passenger networks recover.[4]

In practical terms, cargo organizations must therefore operate within network decisions such as aircraft scheduling, hub structures, and operational priorities that are not created primarily for freight demand.

Cargo teams must adapt to passenger-driven schedules, airport constraints, and airline network priorities while maintaining service reliability across complex global supply chains. In airline groups where cargo activity spans multiple carriers and hubs, the operational challenge becomes even more pronounced.

In these environments, cargo organizations are no longer simply departments monetizing spare capacity. They are increasingly responsible for coordinating cargo flows across multiple airlines, operational hubs, and partner networks.

That shift fundamentally changes the transformation agenda. The challenge is no longer only how to improve cargo systems, it is how to create a platform capable of coordinating cargo activity across a structurally fragmented airline ecosystem.

4. International Air Transport Association. Air Cargo Market Outlook 2025–2026.

Why system modernization reveals deeper complexity

Across the industry, cargo organizations are investing heavily in modern cargo management platforms intended to replace fragmented legacy environments and improve digital connectivity across the supply chain.

These systems streamline booking processes, automate documentation, and improve integration with freight forwarders and digital marketplaces. Modernizing this technology stack is both necessary and overdue.

Yet modernization efforts frequently reveal a deeper issue. Legacy systems often reflect underlying process fragmentation that has accumulated over years of operational workarounds, local practices, and disconnected decision ownership.

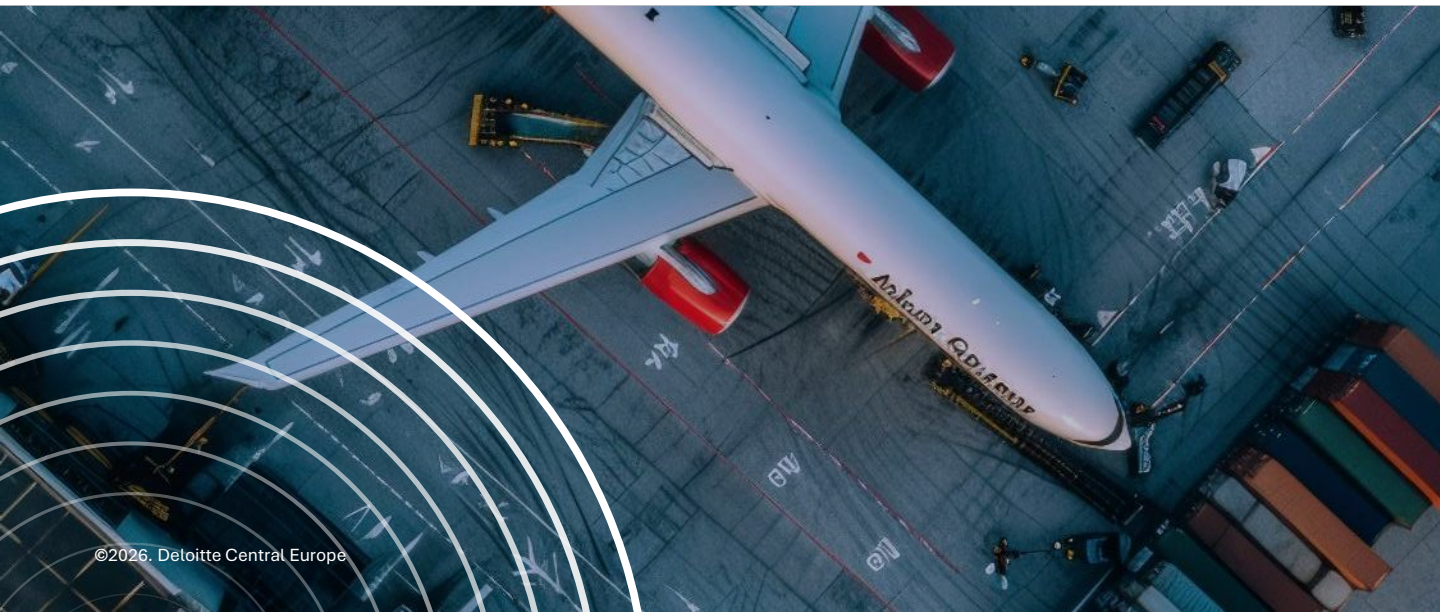
Digital transformation initiatives increasingly expose these structural inconsistencies.

IATA's cargo technology outlook highlights the growing importance of API-driven connectivity, automated documentation flows, and real-time visibility across logistics ecosystems.[5] However, these capabilities deliver their full value only when operational processes are aligned across organizations and partners.

System modernization therefore often becomes a catalyst for broader operating-model transformation. Cargo organizations implementing new platforms frequently confront deeper questions about governance, process standardization, and cross-airline coordination.

Through Deloitte's work across aviation transformation programs, this pattern appears consistently. Modernization may begin as a technology program but frequently evolves into a broader redesign of how cargo operations function across the airline ecosystem.

5. International Air Transport Association. Cargo Digital Transformation and Technology Trends Report, 2026.



From transaction systems to network orchestration

Most cargo transformations begin with the replacement of cargo management systems. Few begin by asking how the cargo network itself should be coordinated. Research across the transportation sector increasingly highlights this coordination challenge. Deloitte's Global Transportation Trends analysis notes that digitally connected transport networks require orchestration capabilities that extend beyond traditional transaction systems to manage disruptions across complex operational ecosystems.[6]

Cargo management systems remain essential. They process bookings, generate air waybills, track shipments, and support revenue accounting. For many airlines, modernizing these platforms has become the most visible expression of cargo transformation.

Yet modernization quickly exposes the limits of a system-led view of change,

revealing a capability gap between systems designed to process cargo transactions and platforms required to coordinate cargo networks.

Transaction systems process cargo activity but are not designed to manage the operational complexity that emerges when disruptions propagate across flights, hubs, warehouses, handlers, and airline operators. They can record events but rarely determine how the broader network should respond.

Cargo networks operate in a disruption-driven environment where missed connections, aircraft delays, warehouse constraints, and customs holds can quickly propagate across flights, hubs, and shipments. **Once disruption begins to spread, the operational challenge shifts from tracking individual shipments to coordinating recovery across the network.**

This is where orchestration capabilities become critical. Often implemented through cargo control towers or network coordination environments, these platforms aggregate operational signals from flights, shipments, handling systems, warehouses, and partners to create a real-time view of cargo activity across the network.

Their purpose is not simply visibility. Their value lies in enabling faster operational decisions such as prioritizing shipments, rerouting cargo flows, protecting premium products, and stabilizing the network during disruption.

For multi-airline cargo platforms this capability becomes strategic. Once cargo capacity is distributed across several airlines and hubs, purely transactional systems struggle to coordinate activity across the network.

6. Deloitte. Global Transportation Trends 2025

What this requires is an orchestration layer capable of connecting operational signals across carriers and partners, allowing the cargo platform to function as an integrated network rather than a collection of independent processes.

Industry initiatives reinforce this shift. IATA's ONE Record program seeks to standardize cargo data exchange across the Logistics ecosystem, enabling interoperable digital communication among airlines, freight forwarders, and logistics providers.[7]

As cargo data becomes more accessible and portable across the supply chain, the competitive advantage will increasingly come from how effectively organizations translate that visibility into coordinated operational decisions.

Through Deloitte's work with aviation and logistics organizations, this transition from transaction processing to network orchestration is increasingly where the strategic center of gravity in cargo transformation lies.

7. International Air Transport Association. ONE Record Implementation Program Update, 2026.

Simplification as a source of latent capacity

Capacity constraints in air cargo are often framed in physical terms such as aircraft availability, belly space, airport slots, warehouses, and ground handling infrastructure. While these constraints are real, they are not always the first limit on operational performance.

In many cargo networks, especially those spanning multiple airlines and hubs, operational complexity becomes the more immediate constraint. This complexity accumulates through fragmented processes, inconsistent station practices, duplicated decision rights, and disconnected operational data across the network.

Individually these inefficiencies appear manageable. Collectively they slow operational response, reduce visibility, and make the network harder to operate. In these environments the network may appear capacity constrained even when physical capacity exists. Aircraft space may be available and warehouse throughput sufficient, yet operational friction prevents cargo from moving efficiently through the system.

The result is reduced effective capacity, capacity that technically exists but cannot be reliably utilized, limiting the impact of modernization investments when underlying complexity remains unaddressed.

Industry analysis similarly highlights how operational complexity across multi-hub airline networks can materially affect cargo throughput and recovery performance during disruption events.[8]

Operational analysis within the aviation sector suggests that complexity across multi-hub cargo networks can significantly reduce usable capacity by slowing recovery from disruptions and increasing coordination overhead.[8]

Seen through this lens, simplification becomes a source of latent capacity. By standardizing key processes, clarifying operational ownership, and reducing avoidable variation, cargo organizations can unlock throughput that previously remained hidden within fragmented workflows.

8. Aviation Week Network. Operational complexity and capacity utilization in airline cargo networks, 2026.

Hidden capacity in cargo operations

Recent airline disclosures reinforce this dynamic. Across several major carriers in 2025, cargo capacity expanded while load factors remained broadly stable or, in some cases, declined. Analysis of publicly available airline disclosures suggests that increasing available capacity does not, on its own, consistently translate into higher effective utilization under existing operating conditions.

At a more operational level, IATA's 2025 facilities study found that shipment volume declarations were accurate in only 27.5% of cases, while flights consistently departed with usable capacity that could not be effectively planned or deployed under existing coordination practices. When digital planning tools were introduced, operators were able to identify materially more usable space per flight while reducing build-up times by more than 30 percent.

Together, these data points point to a consistent conclusion: a meaningful share of available capacity remains unusable under fragmented planning and coordination conditions.

Exhibit 1 – How fragmented planning supresses usable cargo capacity

Indicator/ What was measured	What fragmented operations look like	What coordinated planning improves
Shipment volume data accuracy	Only 27.5% accurate; poor shipment data reduces planning precision	Inaccurate inputs limit planning precision and reduce usable capacity
Usable aircraft space	Approx. 14% to 16% usable despite available free space. Fragmented planning leaves that capacity underutilized	Coordinated planning identifies materially more usable capacity
Cargo build-up time	Manual / siloed baseline slows coordination and reduces recovery	33.75% reduction with digital planning tools
Booking execution	Lower acceptance and higher rework increase friction	Higher acceptance rates and fewer cancellations
Delivery reliability	Industry delivery performance remained uneven in 2025 Fragmented conditions make consistency harder	Coordinated execution supports more stable operational performance

Source: IATA (2025), WebCargo (2026), CargoAi (2025), airline annual disclosures (2025). Deloitte analysis based on publicly available industry data.

This reinforces the central argument of this point of **view → cargo systems can process transactions**, but they do not resolve the data inconsistencies, planning gaps, and operational fragmentation that suppress usable capacity. The performance uplift comes when organizations move beyond system replacement toward coordinated cargo platforms capable of orchestrating planning and execution across the network.

These dynamics can be understood as a progression from fragmented operations toward coordinated, platform-based cargo models:

Exhibit 2 - From fragmentation to orchestration

Fragmented	Transitional	Coordinated
Disconnected systems	Targeted digital initiatives	Network-level orchestration
Limited shared data	Partial integration	Shared data environment
Manual coordination	Local improvements	Coordinated decision-making
Hidden capacity	Partial uplift	Higher utilization
Slow recovery	Inconsistent recovery	Faster stabilization

Source: Deloitte analysis.

“Systems process transactions. Platforms coordinate outcomes”.

Organizational alignment and the human architecture of cargo

Technology and process design alone rarely determine the success of cargo transformation. In many airline groups the deeper constraint lies in organizational structure.

Cargo operates as a commercial function, yet many of the systems and investments it depends on are governed elsewhere in the airline, within enterprise IT, airline operations, or network planning.

This creates a structural tension. Cargo organizations experience operational fragmentation directly, while enterprise technology teams must balance cargo priorities against a broader portfolio of passenger systems and operational platforms.

Where this misalignment persists, transformation programs often struggle. Cargo may define the ambition but lack authority over enabling systems, while IT may deliver solutions aligned with enterprise architecture but disconnected from operational realities.

For cargo platforms operating across multiple airlines, the challenge becomes even greater. Transformation requires coordination across several airlines, operational environments, and governance structures.

Successful organizations therefore elevate cargo modernization beyond the boundaries of either a business-unit initiative or a technology program. Instead, they treat cargo transformation as an enterprise operating-model issue.

Through Deloitte's work with aviation organizations, early alignment between cargo leadership, airline operations, and enterprise technology consistently emerges as one of the strongest predictors of transformation success.[9]

HOW DELOITTE CAN HELP YOUR TRANSFORMATION

Air cargo modernization is increasingly evolving beyond system replacement toward the design of coordinated cargo platforms capable of operating across complex airline ecosystems.

Through Deloitte's work with airlines, airports, and Logistics organizations, we see transformation programs succeed when technology modernization is combined with operating-model design, process simplification, and enterprise alignment.

For airline groups operating across multiple carriers and hubs, the central challenge is not simply implementing new cargo systems, but designing the platform that allows cargo operations to function coherently across the wider airline network.

Organizations that address this challenge early are often better positioned to translate modernization investments into measurable improvements in operational resilience, network efficiency, and commercial performance.

9. Deloitte .2026 Aerospace and Defense Industry Outlook

Designing the next generation cargo platform

Air cargo transformation is entering a new phase. The first stage focused on modernization, replacing legacy platforms, expanding digital channels, and improving operational visibility.

The next stage centers on coordination as cargo flows span multiple airlines, hubs, and partners. The key challenge becomes how the cargo platform should operate across that distributed ecosystem. System modernization alone cannot answer that question. It requires decisions about operating-model design, governance, and the balance between network-level standardization and airline-specific flexibility.

Organizations therefore face a strategic choice in how they approach cargo transformation. They can treat modernization primarily as a technology upgrade, or they can treat transformation as a platform design challenge that redefines how cargo operates across the airline network.

Based on Deloitte's experience supporting aviation and logistics transformations, the organizations that capture the greatest value from modernization pursue the latter path. Competitive advantages in air cargo will increasingly come from the ability to operate cargo as a coordinated platform, aligning systems, processes, and decision-making across the airline ecosystem.

For many airline groups, the design of the cargo platform itself is now becoming the defining transformation challenge of the cargo business.

The question is no longer simply how to modernize cargo systems, but how to design the cargo platform that the next generation of global air freight will require, and which organizations will move first.

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