# Digital Air Cargo (DAC)
## White Paper

# Technical and Business Model Requirements

Overview of Digital Air Cargo
Key Technical and Business Requirements
Implementation Roadmap
for Airlines, GSAs and Freight Forwarders

In order to adapt to rapid-pace supply chains, air cargo is shifting towards broader digitization across cargo procurement processes. At the core of Digital Air Cargo is:

> # Real-time bi-directional digital communication of rates, capacity, and bookings across airlines, GSA/forwarders.
>
> This drives cheaper, quicker, and more reliable air cargo, attracting more shippers and expanding air cargo's market size and profitability.

While industries like healthcare, FinTech, and airline passenger travel, have digitized, air cargo's slow digitization hinders industry growth. Despite a groundswell of eBooking digitization in 2019, the industry suffers from offline activity, resulting in padded transit times, cumbersome communications, and high costs, exacerbated by:
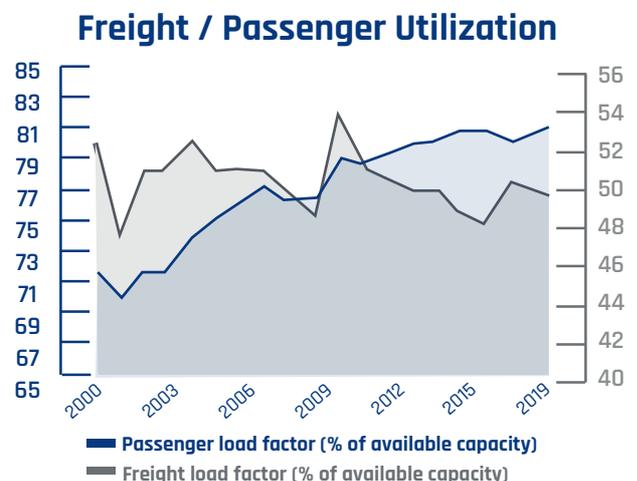
- Lagging standardization on major aspects (pricing, capacity, eBookings)
- Unintegrated platforms, both internally and with other organizations
- Archaic business models that have yet to adopt to new opportunities.

# Digital Air Cargo (DAC)

As early as the 1960's, airline passenger sales began to shift towards digitization. It began with capacity management of seats, made available to internal operators fielding phone calls from travel agents. From there, direct connectivity was implemented for agents in the 1970s. About twenty years later, Alaska Airlines broke ground by enabling consumer web booking in the mid-90s. Since, dynamic pricing, bundling, and omni-channel sales have become an industry standard.

With Digital Air Cargo, the air cargo industry is broaching the same territory.[1] Supply-side airline capacity automation enables dynamic pricing, while improved data standards establishes ubiquitous connectivity and static rate distribution. Live eBooking and pricing means intelligent capacity management, while full-stack digitization improves the customer experience.

Together, this increases the market size and the viability of air cargo for more supply chain use cases. But it's only possible when particular business models and technical requirements are implemented.

**Freight / Passenger Utilization**

■ **Passenger load factor (% of available capacity)**
■ **Freight load factor (% of available capacity)**

Source: IATA

1. For more on airline digital maturity, see the Digital Carrier Benchmarking report (2019)

# Overview of Required Changes

|  | **Business Model** | **Technical** |
|---|---|---|
| **Airlines** | Dynamic Pricing<br>Unified Cross-Country/Channel Pricing<br>Binding Two-sided Commitment (BSA)<br>Index-linked Contracts | Modern Capacity Management<br>eBooking APIs<br>Capacity-Linked Revenue Management<br>Pricing Optimization with Industry Pricing<br>Best Response Time/Acceptance Practices |
| **Forwarders and GSAs** | Global P&L/Pricing<br>Self-service Website Booking<br>Flight-definite Pricing and eBooking | Global Rate Management<br>Automated Buy-to-Sell Pricing<br>In-platform integrated Airline eBookings |

# DAC Requirements for Airlines

The air cargo eBooking and sales process has a number of hurdles to overcome prior to full digitization. From a technical perspective, there are five core pillars for full air cargo supply digitization.

# Technical Requirements for Airlines

### Modern capacity management

Carriers typically allocate capacity across both contracts and spot shipments, which may be normal non-binding bookings or BSAs. Cargo capacity is trickier than passenger travel for a number of reasons. First of all, cargo capacity is based on both volume and weight, not just seats. This can be further complicated by atypical shapes and the need to position specific types of cargo in specific body locations. Finally, capacity is not always available until immediately prior to departure, depending on passenger luggage, demanding rapid decision making.[2]

While complicated, these are all addressable fairly easily, provided a modern capacity management system is used. Such a system must be updated in real-time and be made available throughout the organization.

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2. Cargo Capacity Management with Allotments and Spot Market Demand, 2008

## eBooking APIs

Real-time cargo capacity management sets the stage for live eBookings. Many airlines already provide a dedicated website for digital booking. However, these websites don't always access live capacity, creating expensive internal manual processes and frustrating an otherwise pleasant customer experience. The industry consensus is indeed shifting towards direct capacity booking, or eBooking. As additional players digitize, a drive towards omni-channel eBooking, much like passenger travel, is critical. To accomplish this, APIs (Application Programming Interfaces) must be made available, although old FFR messaging may also be used. For a top-tier airline, **the labor cost savings from replacing manual bookings can improve profitability by some 3% annually**.[3]

## Capacity-Driven Revenue Management (dynamic pricing)

While the on-demand pace of air cargo lends itself to rapid demand fluctuations, IATA has flagged eCommerce and time-sensitive shipments[4] as the biggest growth opportunities. **Tying available capacity to dynamic pricing, as leading airlines do, helps tap into this market**, increasing market share, utilization, and profitability. Of course, this is critical for long-term airline survival, as well as to reduce the industry's carbon footprint per kilogram; in March 2017, international cargo load factors hovered at 46.5%.[5] Real-time pricing should significantly improve this just as airline passenger load factors have improved with more dynamic pricing.

## Source industry data to optimize pricing

Big Data enables leveraging multiple datasets to improve decision making. Early-stage dynamic pricing can be driven by an airline's internal supply and demand alone, but doing so ignores **key inputs** like broader industry search volumes as a leading indicator, actual industry booking patterns, or even broader global trade patterns. These are a mainstay in most dynamic pricing environments. Rapid spikes in quote requests across the industry should be an important indicator of rising prices, while heightened interest on alternative lanes might drive an airline to lower prices. Doing so automatically increases both load-factors and revenue. **Sophisticated revenue management combines industry-wide data with company data**.

## API Best Practices

Digital infrastructure is never enough. In a fragmented and competitive environment, seconds count. And, of course, digital connectivity doesn't render customer service unnecessary; it just takes another shape. Across nearly one million searches a month and thousands of eBookings, WebCargo by Freightos has identified a number of best practices for eBooking automation in Digital Air Cargo.

- **Pricing and eBooking API response times** should be under 10 seconds (at the 90th percentile) this is emerging as an important cut-off time.

- eBooking traction is ideal among users with over 80% **eBooking acceptance rate**. Of course, processes must be implemented to provide customers with alternatives for the remaining 20% of eBookings that are rejected.

# Business Model Requirements for Airlines

## Dynamic Pricing

Shifting to fully dynamic pricing may be a leap but it ushers in serious opportunity. For example, on the passenger side, dynamic prices have shown revenue increases of up to 10%.[6] Beyond the technical requirements, this requires new processes and airline flexibility. To alleviate the transition, a **hybrid model could be initially implemented**, in which airlines set base rates that are adjusted dynamically.

## Relax Origin Only Sales Requirement

Currently based on old IATA rules, airlines typically sell to forwarders at the flight's origin country. This creates strange overhead, as most shipments are FOB or imports. So every time an importer, for example, in the US, goes to their forwarder for an import from Asia, the forwarder must operate through a second forwarder in the Asian origin country. This adds another intermediary to the transaction, bringing with it extra markups, time delays and human cost. In the Internet era, **cargo airlines need to adjust to selling directly to customers worldwide**, just like passenger airlines do.

## Relaxed Definition of Target Audience

Many airlines sell exclusively to IATA-member forwarders, relying on GSAs or other forwarders for non-IATA sales. This artificially limits the addressable market, introducing extra intermediaries, and further inflating prices. The driving factor appears to be related to reliance on the CASS payment system. However, **third-party payment platforms** could make payments more flexible and expand the market.

## Two-sided commitment (BSA)

Given their manual and offline background, global air and ocean freight both failed to evolve fully binding contracts, creating a commercial environment rife with uncertainty and heavily dependent on personal relationships to avoid contract defection or rolled cargo. The shift towards Digital Air Cargo presents an opportunity to adopt **simple binding digital contracts**, backed by financial guarantees to uphold contracts. This is absolutely critical for a low-touch digital air cargo reality.

## Index-linked Contracts

Fixed price cargo tenders create challenges and risks for all parties who find themselves tied to the wrong price. Other industries have solved this with a gradual shift from fixed-price agreements towards index-linked prices that automatically adjust with the market.[7] Qatar Airways have recently pioneered this approach in air cargo. With fully digitized air cargo, sufficient trade volume patterns can be analyzed to **determine reliable pricing benchmarks**, allowing airlines, GSAs, and forwarders to link prices to indexes and creating long term contracts that track the market automatically. This reduces manual and time-intensive contract negotiations to discussions over a fixed percentage in relation to indexes on select lanes. This is already commonplace in the bulk shipping world (Forward Freight Agreements). Nor is the concept new, as airlines are already familiar with index-linking for fuel procurement. Once a contract is index linked, **price fluctuation exposure can be effectively hedged with derivatives such as swaps and options**.

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6. Travel Weekly, 2018

7. The Evolution of Ocean Freight Procurement, 2018

# DAC Requirements for GSAs/Freight Forwarders

## Technical Requirements for GSAs/Freight Forwarders [8]

### Global Rate Management

According to Freightos research, the average spot quote (not booking!) from top freight forwarders takes over 40 hours. This stems from poor rate management, lacking single-source-of-truth databases, ineffective quoting technology, and unscalable processes. In addition, the offline quoting promotes opaque pricing, with a price range of nearly 2X when comparing LCL quotes across top twenty forwarders.

To take advantage of digitized real-time airline pricing and improve customer service, forwarders and GSAs must embrace single-source-of-truth rate management. During the transition period to full Digital Air Cargo, this can **combine contract rates with airline market rates** from non-digitized airlines[9] and live pricing from the digitized airlines. This enables instant quoting to customers, eliminating manual work on booking and improving win rates by over 15%. This is particularly helpful in strong air freight growth sectors, like perishables, raw materials, chemicals and fashion, all of which have a strong time-sensitive component.

### Automatically calculate sell prices (Buy-to-sell)

Dynamic pricing should not be limited to airlines. With the right technology, forwarders or GSAs can instantly pull rates from airlines, average them, and add on a fixed or dynamic sell rate increase, before selling through digital channels to customers. This **reduces the operational overhead of internal rate distribution, improves rate relevance, and facilitates no-touch bookings** for customers. A number of large forwarders have successfully rolled this out, advertising competitive sell rates in a fully automatic way updated hour by hour based on the changes in buy rates across airlines.

### Integrated eBooking

Freight rate management and automated quoting provides an improved customer experience. However, airline eBooking and through Digital Air Cargo unlocks bi-directional communication. For a forwarder, providing full access to actual eBookings, based off of dynamic rates with automated buy-to-sell rates, **unlocks true efficiency for customers and reduces cost overhead for forwarders**. It ensures that when a shipper books with the forwarder the forwarder books capacity with the airline instantly to avoid unnecessary delays, and reduce costly manual work.

8. The State of Digital Freight, 2018

9. Global Freight Forwarding, Transport Intelligence, 2018

# Business model Requirements for GSAs/Freight Forwarders

## Globally Unified P&L/Pricing

Historically, forwarding has grown through mergers and acquisitions, leading to fragmented business models in which individual country offices are their own profit center that treat other offices as a customer. For example, regional offices don't share buy rates with others, with dramatic sales ramifications. Since no one country has visibility to the end-to-end buy costs, quoting is slow and often overpriced. For example, if the origin leg of a shipment is a loss-leader but that loss is recouped on other services, such a transaction would easily be won if someone had corporate level visibility to buy rates. However, by pricing up the origin leg, the entire shipment may be jeopardized. While technology has existed to bridge this, the structural silos are not so easily overcome. Forwarders should aim to share buy rates globally and split the profits on a shipment instead of one country reselling and marking up the other country as if it were an external customer.

## Self-service sales on the web

Some airlines have pioneered digital sales, like Delta Cargo in 2015 and Air France/KLM, which released an online sales platform to forwarders in 2019. However, freight forwarders have adapted to online sales slightly faster. Not one global forwarder offered real-time freight quotes in 2014. Today, that's shifted to about 50% of top tier forwarders, according to a recent Freightos study, with four top-ten forwarders reaching instant turnaround times for spot air quotes via their website. While not pervasive by any means, the new bar for digital customer service is clearly being set.
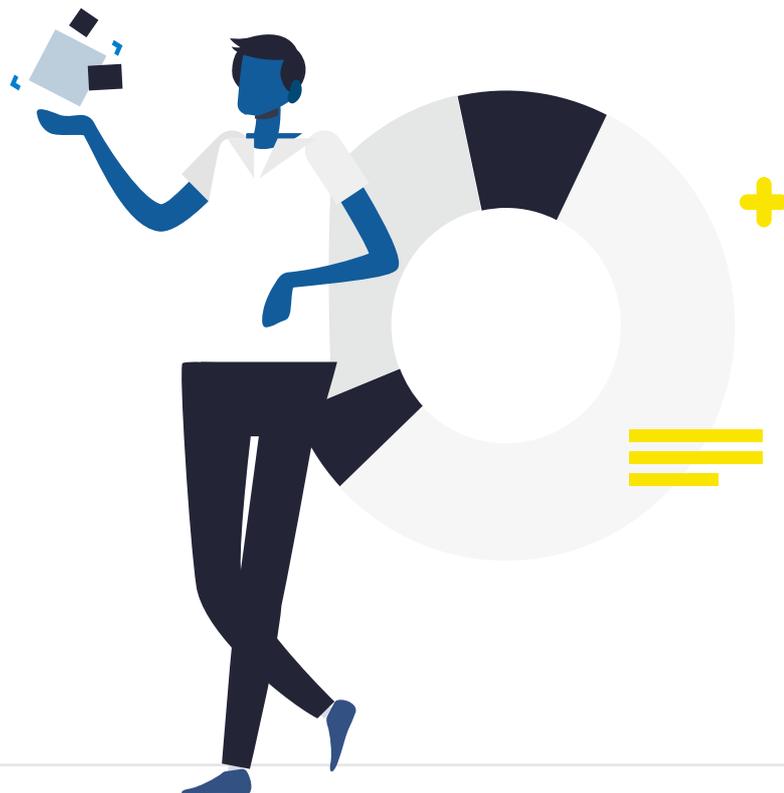
# Airline Roadmap for DAC

**01** Digital distribution of static rates

**02** Capacity management

**03** eBooking

**04** Revenue management/ Dynamic pricing

**05** Leveraging market data to optimize dynamic prices

**06** Web sales and omnichannel sales

**07** Flexible digital payments (non-IATA or imports)

**08** 2-way commitments (BSAs)

**09** Leveraging market data to optimize dynamic prices

**10** Selling to shippers (tripartite with forwarders)

# The Opportunity to Take Off

With the shift to Digital Air Cargo, the industry has the rare opportunity to reassess core operating principles that have evolved unchecked. Global supply chain patterns have shifted, as have logistics procurement characteristics. None of these are earth-shaking in their own right. However, the incremental advantages that stem from the combination of digital platforms, multiple actor connectivity, and revisited business models are what will position the best airlines, forwarders, and GSAs for success.

Some pioneers have already rolled out DAC. In aggregate, these changes will make air cargo cheaper, faster, and more reliable, expanding the market for everyone, just as passenger air travel expanded since digitization.

## Discover how you can future-proof your air cargo sales and management at webcargo.co.

**Unlock DAC**