Air cargo under pressure? How learnings from 2020 can enhance future network and fleet planning

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By Christopher Karp

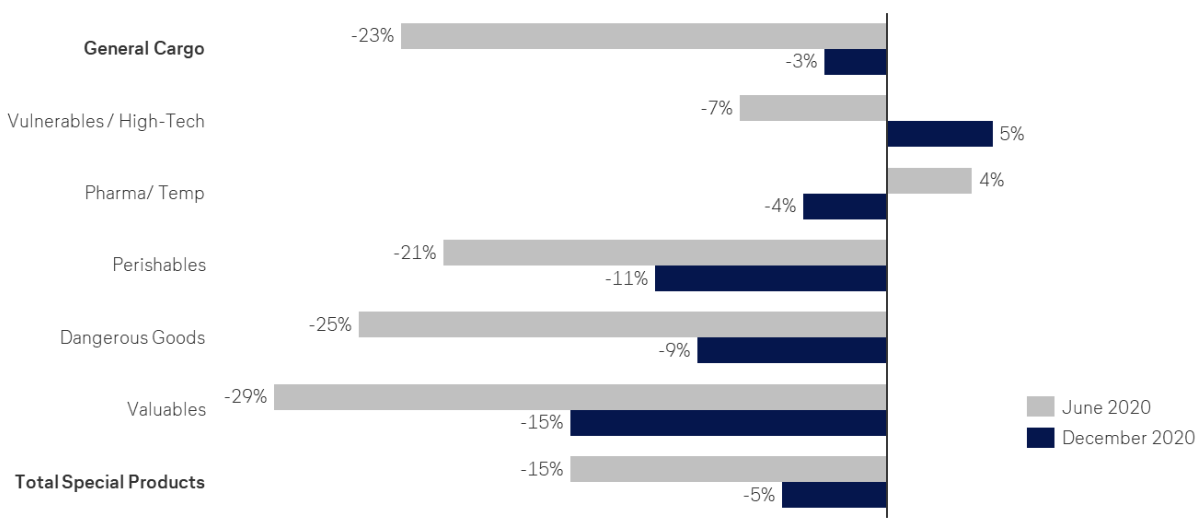
Undoubtedly, 2020 was a historic year for aviation. Thousands of jobs were cut and some airlines will never fly again. Only one business area took off strongly and is yet to find its limits– air cargo. While the passenger business and related services struggle to find a way through the crisis, cargo was and still is flourishing.

But will cargo continue to fly high or will it again become the low-margin problem child it used to be before the crisis? How can cargo and combination carriers prepare their networks to take advantage of current market conditions and continue to succeed post-crisis? What are the lessons learned from 2020 and how can they be applied in 2021 and in future years? How will market conditions develop, and how should airlines shape their networks, schedules and fleets to make the most of the "new normal" in air cargo?

A promising market situation for 2021, but more challenges ahead

The good news first: the cargo market situation in 2021 will be as positive as it was in 2020. Freight volumes, which fell by 15%[1] globally in 2020 as compared to 2019, recently reached pre-crisis levels in Asia, while markets like Europe and The Americas achieved their first months since March 2020 with only single-digit declines. In general, a large consensus expects fairly fast recovery of cargo volumes[2].

Figure 1: Year-over-year growth in cargo commodities by selected months



Source: WorldACD, Lufthansa Consulting analysis

[1] *Compared to 2019*
[2] *WorldACD*

With belly capacity falling 50% and freighter capacity up 6%, 2020 freight yields were very favorable for airlines, achieving a 66% gain for general cargo compared to 2019 (+46% for special products; +43% for express and mail) and making transportation of GEN cargo an especially promising opportunity[3]. In 2021, belly capacities will recover and freighter capacities will ramp-up stronger. Thus, yields are expected to slightly decline this year, yet remain 2-5% higher than2020 yields[4].

In terms of load factor, this means another year with 50+ percent capacity utilization, after hitting a record 54.6% in 2020[5]. This requires airlines to create efficient networks and sufficient spare capacity in order to generate sizeable profits and market shares in the absence of belly capacity.

However, there is a potential risk to this very opportunistic approach: as outlined in my previous article ("The coming air cargo reality check"), the air cargo industry will recover, but will be changed. Once belly capacities are back in the air, yields will deteriorate. In the resulting competition, the current winners of the crisis will face the challenge of network efficiency again. Now, it is time to set the course for long-lasting success and a strong market position after the crisis.

As capacities, volumes and yields level-off at some point, different commodities and goods transported will reshape existing business models. Personal protection equipment (PPE) transports, once the savior of the industry and the primary reason for "preighters", will not play a big role anymore since the under-supply has been covered. The next big thing, the distribution of vaccines around the globe, will only account for a minor share of overall volumes and will likely be limited to a small group of pharma-specialized carriers. New entrants and unexperienced airlines, in particular, should critically consider these circumstances when pursuing this fruitful short-term opportunity.

E-commerce: a zone of opportunity?

A more promising perspective for smaller and medium-sized carriers after the crisis is looking into the e-commerce market. While all other commodities slumped in 2020, high-tech and vulnerable cargo – categories closely linked to e-commerce shipments - have grown through the year and are a major growth driver for the whole industry. Entering this market is less complicated as the e-commerce giants (such as Amazon and Alibaba) are looking for capacity providers. They promise a stable base load and growth opportunities, but also set ambitious service level expectations and post high penalties to any contractor not maintaining their standards. Airlines, longing to secure their market position after the crisis by growing in market areas like e-commerce and express mail must consider the market situation, choose which commodities or businesses to participate in and accordingly adjust their network strategy to meet operational expectations.

Network consistency remains a success factor during and after the crisis

Independent of their business model, many airlines had to re-shuffle their networks due to the major disruption in 2020. Some still struggle to offer their customers the same network coverage and connectivity as in pre-crisis times. So, what needs to be considered to become and remain relevant in the future?

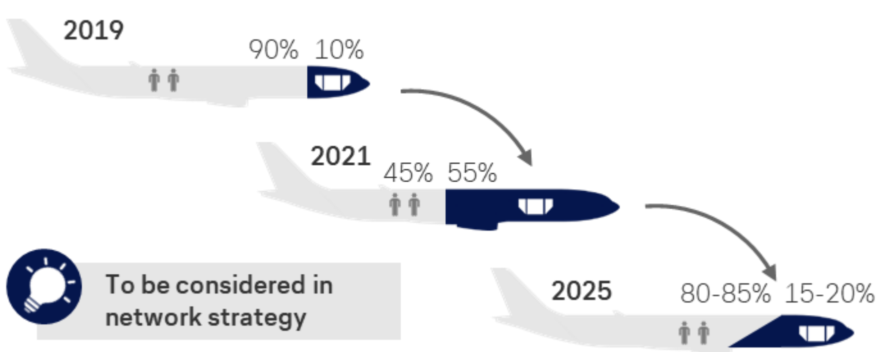
[3] *WorldACD*
[4] *IATA Economic Performance of the Airline Industry*
[5] *IATA Economic Performance of the Airline Industry*

At the peak of the crisis, high-yielding opportunities lured airlines to schedule charter or single-event flights to certain destinations. With the absence of belly capacities, airlines even placed freighters on former belly routes to meet previous commitments. Often, this led to service reductions on former trunk routes and a loss in customer satisfaction. While this might be understandable in the midst of the crisis, this has to be avoided when planning a network strategy for the years ahead. In my recent conversations with freight forwarders, many stated that network consistency and resilience should be an airline's top priority. In fact, airlines offering 2019-levels of capacity also in 2020 were rewarded with yield premiums of 10-20 percentage points above market growth[6].

The same consistency should be targeted further when selecting airports to serve during and after the crisis. Currently, the majority of freight traffic flows between major hubs, which allows for the best utilization of infrastructure and network effects. With slot regulations currently on hold, there are few limitations for new entrants to enter these hubs and for established carriers to increase their frequencies instead of moving freight to remote airports. However, the mid-term recovery of passenger flights and slot constraints will put pressure on airlines. When filing a cargo network strategy, a detailed evaluation becomes necessary whether it makes sense to build up structures at bigger hubs or to move to less congested airports straight away.

Whatever destination strategy is pursued, route profitability will be under pressure again quite soon. Combination carriers[7], especially, will feel the lack of usually 20-50%[8] less cost intensive belly capacities on their bottom lines. More than ever, route and network profitability will play the decisive role in strategizing the future. Apart from enhancing the cargo network's profitability, it can be useful for combination carriers to consider cargo revenues to a further extent when optimizing their passenger network. It remains to be seen for how long cargo departments will retain the lead when it comes to driving decisions on passenger destinations and fleet types, but cargo's role in that decision will remain important.

Figure 2: Revenue contribution by source (passenger vs. cargo) on a passenger flight



Source: WorldACD, Lufthansa Consulting analysis

One level deeper, when looking at scheduling, natural connectivity of inbound and outbound flights is no longer given. In particular, combination carriers with large freighters might face a challenge filling their planes once competition steps back into the markets. With fewer belly-cargo feeds, alignment of freighter and passenger schedules needs a reform. The small window between sufficient buffer for

[6] *Lufthansa Consulting research*
[7] *Here: airlines operating both cargo and passenger aircraft*
[8] *Lufthansa Consulting research*

ground ops and unacceptable travel times is under pressure and needs adjustment to remain competitive in the new normal.

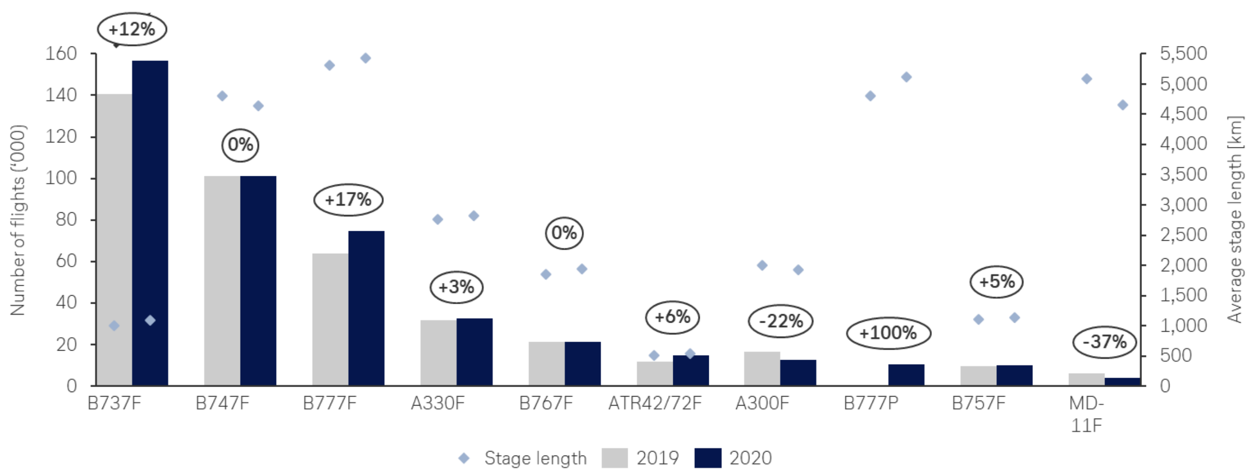
Frequency of service is another aspect, the dynamics of which will evolve post-crisis. Over the last year, fewer flights – especially belly capacity – meant that frequency share became a less significant factor that usual for generating market share. As passenger flights recover, they will buy back market share by offering high frequency service at competitive rates. In response, freighter operators may have to increase frequency or step out of the market. Raising frequency requires planning for the necessary fleet well ahead; airlines should avoid putting stress on their fleet and infrastructure capacities for extended periods.

As mentioned earlier, schedule stability and service levels are forwarders' key demands. Flight delays in 2020 decreased by 90% compared to previous years[9]. This makes shipment delays an individual problem and not a system-wide dilemma Again, a careful balancing between short-term opportunities and long-term customer satisfaction is essential for success during and post-COVID.

Reasonable fleet planning assures competitiveness and efficiency

A mindful approach to fleet strategy should be based on learnings from the crisis as well as overarching long-term trends.

Figure 3: Year-over-year comparison of operated flights by cargo aircraft types (cargo-only flights)



Source: IATA AirportIS, Lufthansa Consulting analysis

During the crisis, additional cargo capacity was largely delivered by the workhorse B737F and B777F aircraft. Large freighters were used on intercontinental trunk routes to fill gaps in belly-capacity. Smaller freighters operated on continental or regional routes, often used for e-commerce brands or within integrator networks. Interestingly, the average stage length of cargo flights increased significantly, indicating a higher willingness by carriers to push their aircraft closer to their limits[10]. Conversations with operators and manufacturers indicate that B737F and B777F will dominate the future because of their multifaceted mission capabilities.

[9] *Eurocontrol, FAA*
[10] *IATA AirportIS*

The low fuel price in 2020, about 43% cheaper than in 2019, made it possible to operate older aircraft at reasonable margins. With rising fuel prices (expectation for 2021: +12%)[11], however, innovation pressure will force older types out quite soon. Post-crisis, orders are likely to shift from large freighters to more efficient B777 and some more B767.

Converted aircraft will likely be the capacity provider of the future. A320s and B737s, leading in terms of conversion numbers. This will make significant continental capacity available and strongly indicates that airlines prepare themselves to participate in growth of the express and e-commerce business[12]. The "preighter" concept has prevailed throughout 2020 and will likely remain in the skies at least for the first half of 2021 as belly capacity recovery is slowed by lockdowns and travel restrictions.

Coherent planning limits future risks while facilitating opportunities

What remains is the necessity for proper fleet planning to ensure adaptability – during as well as after the crisis – and to secure the scarce production or conversion slots. Airlines should not rest on the convenient market situation and their extraordinary cargo margins, since network profitability will be tougher to achieve in the future. Cargo revenues and consideration of cargo in network planning with a distinct network and fleet strategy are no longer just optional. Setting the right strategic course now is key to maintaining long-term forwarder satisfaction while taking advantage of the favorable crisis circumstances.

Christopher Karp is a Consultant and cargo expert from the Network and Fleet Management Solution Group at Lufthansa Consulting.

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[11] *S&P Global Platts*
[12] *CAPA Centre for Aviation*