Revamping passenger demand models for a post-COVID aviation world

With the aviation world slowly initiating a recovery from the capacity shock resulting from Covid-19, stakeholders within the industry – airports, airlines, regulators, governments, investors and lessors - are in need of reliable demand forecasts in order to strategize and plan for the future. However, existing forecasts are invalid. Traditional forecasting methods must be adapted to the new conditions. In the article, Lufthansa Consulting proposes three key adaptations for revamping passenger demand models for a post-COVID aviation world.

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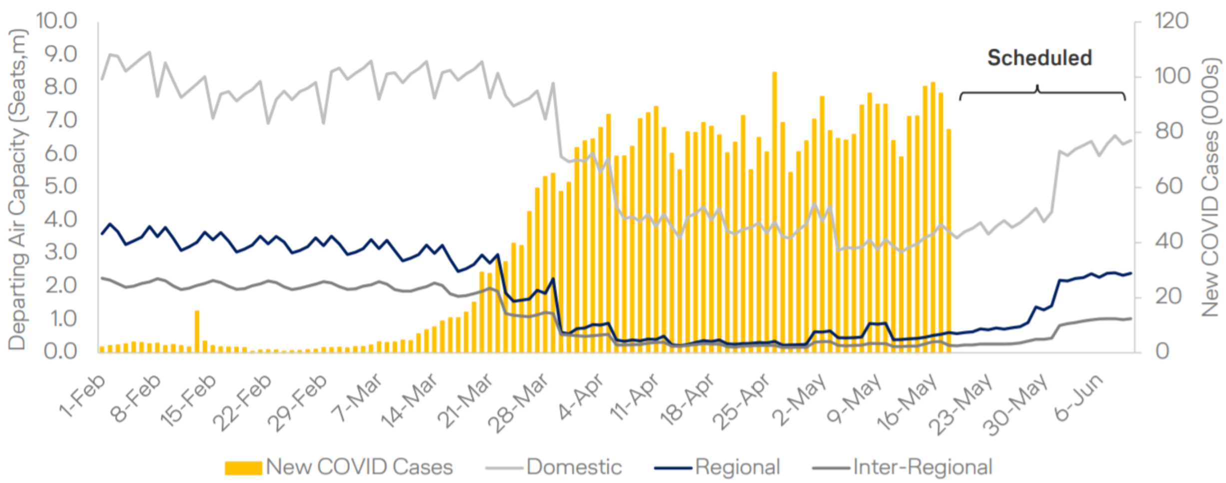
As several countries around the world ease restrictions on social interaction and travel, **the first green shoots of recovery in air travel are on the horizon**. Domestic and regional markets are seeing a slow uptick in return of capacity. Globally, this represents a 32% increase in scheduled capacity between the first and second halves of May.

Figure 1: Aviation capacity vs COVID-19, Global



Source: IATA Airport IS, European Center for Disease Prevention and Control, Lufthansa Consulting
Note: Regions as defined by IATA; Asia, Australasia, Caribbean, Central America, Europe, Middle East, North America, South America

The duration, global spread and magnitude of the ongoing pandemic makes it very different from past crises. As the industry limps back, every stakeholder must develop a perspective on the shape and nature of the recovery for their particular markets or operations. Depending on the context, this could range from the immediate term ("Which routes should an airline prioritize for return of service?") to the long term ("How could future shocks affect the viability of an airport's business plan?").

Existing demand models are for all intents and purposes invalid, especially for the short term. New methodologies are required to address the multiple, highly dynamic factors at play and potential changes to traditional trends in passenger behavior. A structured and data-driven approach with a strong foundation will allow the industry to address the complexity of the issue.

A bankable forecast can be achieved through three key adaptations to the traditional forecasting methodology.

1. A new reality requires new indicators of demand

Lufthansa Consulting considers five key clusters of factors, representing the stage of virus infection, the economic and regulatory situation, the likelihood of travel by different passenger types, variations in constrained demand owing to airline driven factors and changes in customer behavior.

Figure 2: Five clusters of factors driving demand

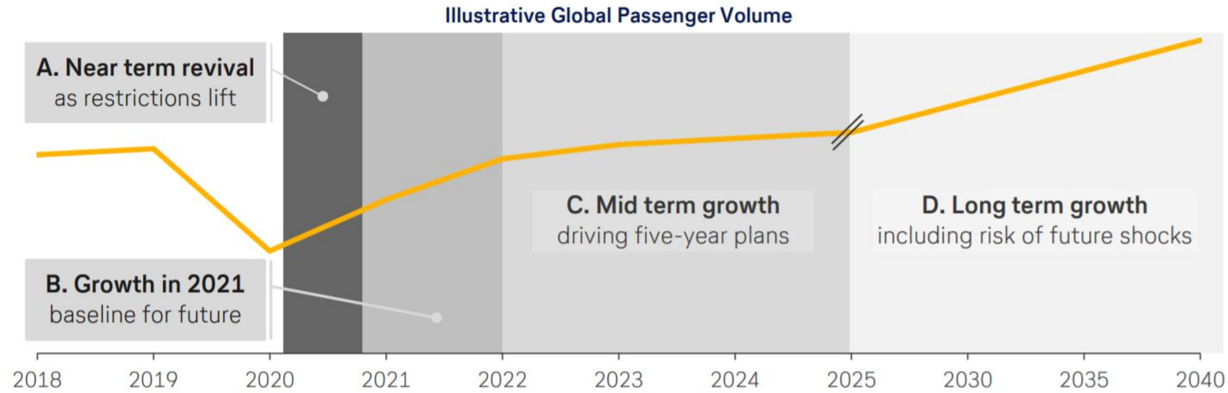
Source: Lufthansa Consulting

New indicators also necessitate new modes of data collection and management. Active dashboards reading real time data, particularly on factors related to disease containment, travel restrictions, booking trends and customer sentiment, are essential to monitor developments and incorporate them into planning and forecasting.

2. The future is comprised of four distinct segments

As the industry emerges from the depths of the Covid-19 crisis, it is important to recognize that there are different segments to the recovery, each of which varies in the level of uncertainty and hence the factors driving traffic and the duration. Segregation of the forecast and applying a different approach to each allows one to group elements of uncertainty and tailor forecasting to the most relevant factors.

Figure 3: Four segments of post-COVID demand forecasts



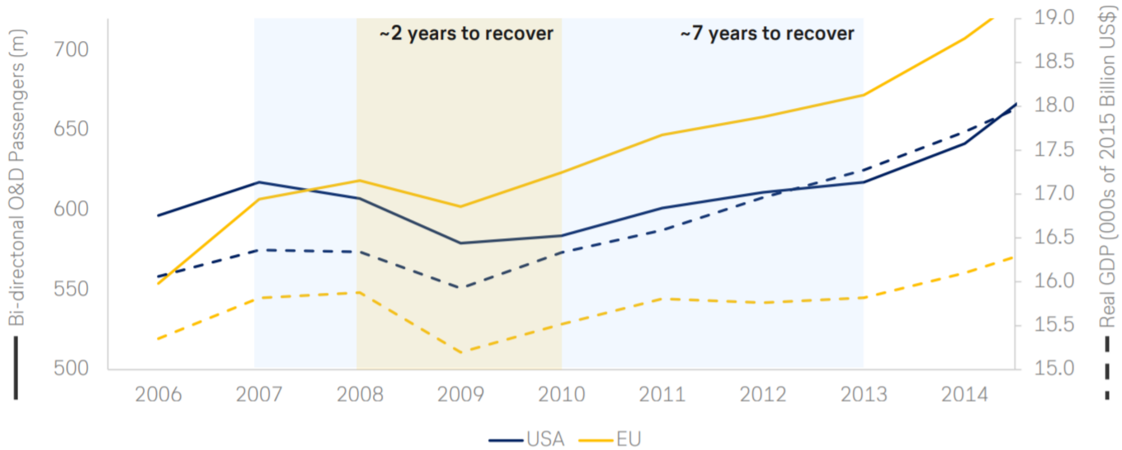
Source: Lufthansa Consulting

The first segment evaluates **near term revival** in 2020, based on immediate factors such as the easing travel restrictions, traveler search or booking behavior and improving business and customer sentiment. For airlines, this addresses the question of which routes are likely to support a relaunch of operations (and is supported by Lufthansa Consulting's Route Prioritization tool). For airports, it allows facility and financial planning for the rest of the year.

Benchmarking against selected countries that are earlier in the COVID-19 recovery curve offers insights into possible timelines for removal of traffic restrictions and return of capacity. For instance, China lifted most domestic travel restrictions in early April following a ~96% fall in new-COVID infections between February and March, with domestic air capacity in April rising to ~60% of January volumes. However, such benchmarks should be approached with caution to extract the correct insights, taking into account any unique features of the markets under consideration and learning from the outcomes, for example the load factors achieved. Route prioritization would typically be built off customer activity on booking channels, search behavior and the results of sentiment surveys, coupled with airlines' historical information and a view on market consolidation.

The second segment, **traffic growth in 2021**, is the most important part of the exercise as it lays the baseline for long-term demand. The forecast here is primarily based on the five clusters of demand recovery mentioned earlier. Historical demand shocks provide, to an extent, benchmarks to understand the unique demand recovery patterns in comparable markets. For example, after the 2008 Global Financial Crisis, it took ~7 years to for passenger volumes to recover in the United States ('U-shape') as compared to the ~2 years in the European Union ('V-shape'), despite the quicker economic recovery in the US. This was driven, in part, by a longer period of restructuring and consolidation in the US.

Figure 4: Demand recovery post 2008 Financial Crisis, USA vs EU



Source: IATA Airport IS, IHS Markit, Lufthansa Consulting

The third and fourth segments of **mid and long term growth** see a gradual shift from the "five clusters" of demand recovery to the traditional drivers of air traffic. These include socio-economic parameters (such as population, GDP per capita), geographic factors (such as tourism appeal, catchment area) and regional factors (trade, bilateral relations). At this point, the historical relationships between these factors and air traffic can be consistently used to estimate passenger demand.

3. Flexibility and inventiveness are essential to navigate a dynamic environment

The final adaptation required is greater flexibility and higher-level of dynamism. This is particularly true for airlines building a view of near term developments.

Forecasts must be reviewed and refreshed at regular intervals, with the latest (in some cases, real time) data being incorporated. The earlier seasonal or quarterly forecasting cycles will therefore shrink to weekly updates for short term views. Further, all companies must be prepared to adopt a 'test and learn' approach. Quick trials (such as reopening bookings on a route) backed by relevant KPIs and efficient decision making allowing for informed changes are likely to be the best way to act on and validate demand projections. Finally, one should also incorporate scenarios beyond the traditional worst, base and best-cases to account for the possibility of further shocks, be they medical (a recurrence of the virus), economic (a deeper financial downturn) or strategic (consolidation of operators in a market).

Predicting the future with absolute accuracy is impossible, but applying the three key adaptations to traditional demand forecasts can provide a robust estimate of future volumes. This would provide a strong, data backed basis for stakeholders in the aviation industry to plan their path through and beyond the storm brewed by COVID-19.

To learn more and discuss how your organization could benefit from Lufthansa Consulting's expertise on Crisis Recovery, please get in touch at ALcrisis-solutions@LHConsulting.com. ***Together, we can make it through to better days.***

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Further insights from Lufthansa Consulting's aviation experts are available at https://www.lhconsulting.com/insights/news/
