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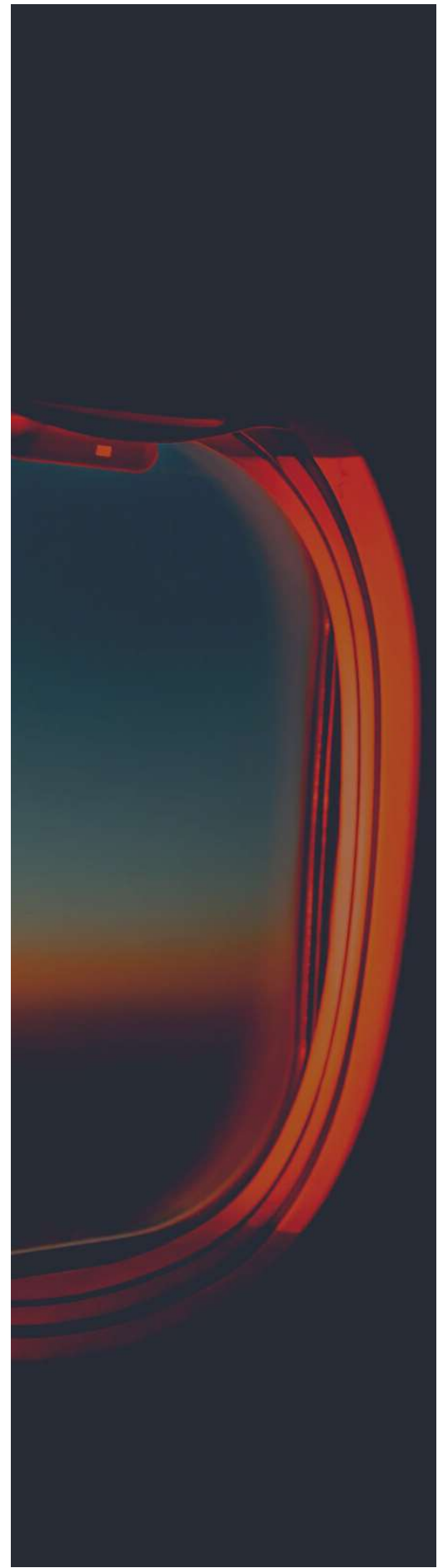
# AIRLINE PLANNING PROCESS

## AIRLINE PLANNING PROCESS

# AIRLINE COST STRUCTURE & ESCAPABILITY CONCEPT

The rebound that the global aviation industry is experiencing has been faster than anticipated by some - causing labor shortages and constrained capacity. As the demand seems to be strong, even after the initial “revenge travel” phase, some airlines have been investing in fleet expansion - such as United Airline’s Dreamliner order and IndiGo’s A320 purchase this June.

⚠️ So the question arises: What could disrupt a good outlook? How fast can one act upon it and cut costs?



## AIRLINE PLANNING PROCESS

# AIRLINE COST STRUCTURE & ESCAPABILITY CONCEPT

➔ The matching of supply and demand becomes particularly tricky for the airline industry when demand disruptions or even cost increases can occur relatively fast but the degree to which an airline can escape costs by, for example, dropping a route is constrained to a time frame.

➔ The concept of cost escapability comes from allocating costs into Variable Direct Operating Costs; Fixed Direct Operating Costs and Indirect Operating Costs. Some variable direct operating costs can be escaped in the short-term - by cancelling one flight, for example. Changes to the overall operating routes is done in a medium-term timeframe for the next schedule period. So a response to falling demand may not be as fast or straight-forward as needed to cut back on costs.

➔ Route Evaluation is a crucial part of this analysis to assess how much a flight segment's revenue is contributing to cover its variable direct costs and to which degree it is contributing to the overall expenses (and yields!) of an airline's network.

➔ Especially for airlines operating in a hub-and-spoke network, analyzing how a single segment feeds and increases revenue on connecting flights is essential to understand the importance of one leg to the whole network.

➔ With a rising fleet size, the amount of fixed direct operating costs increases as well in the long term. While essential to cater to a bigger demand, the disinvestment - like selling aircrafts - is harder when a financial downturn for air travel hits the industry as a whole.

➔ Air travel demand is a derived demand - meaning that it depends on reasons for a population to move between two destinations. Tourism, business travel and VFR are the main drivers for air travel demand - but those fluctuate accordingly to the (g)local economic performance.

➔ The risks that could negatively affect the travel demand are obviously not restricted to the economic sphere. Other risks, on a global and local level, should be identified, assessed and constantly monitored. Scenarios should be generated based on the risks, and mitigation plans developed to guide decisions on how to cut operations and costs as efficiently as possible.

➔ So, as much as it is important to correctly use demand forecasting models to strategically plan an airline's fleet and network size, it becomes equally important to use Risk Management analysis tools. These will monitor relevant parameters that could indicate the beginning of a downturn - be it globally or on a (set of) route(s). The level of awareness can be essential to not be financially overwhelmed when less optimistic times arrive.

## AIRLINE PLANNING PROCESS

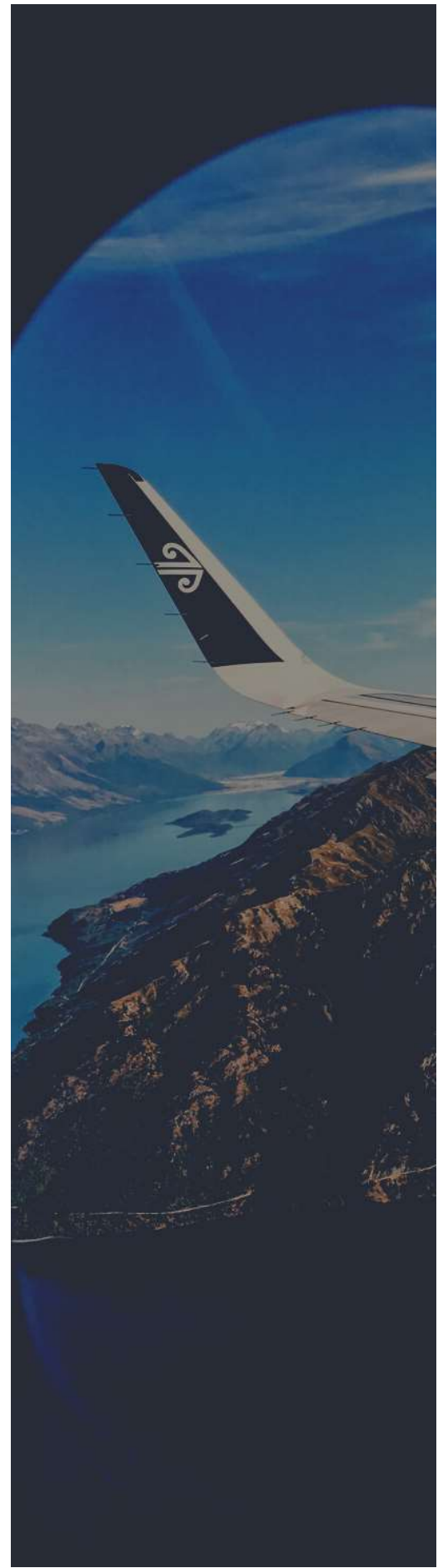
# & ANALYSIS TOOLS



➔ The Airline Planning Process stretches from longer-term decision-making (such as fleet planning and aircraft acquisition) to medium and short-term decisions such as the introduction of new routes, adding frequencies to an existing destination and pricing adjustments.

➔ In the aviation industry, there are a high number of market adjustments that cannot be made on the spot. So being aware of what could indicate downturns in demand or new rising opportunities is essential to plan accordingly.

➔ The analysis tools described below can help on multiple planning stages to bring more accurate estimates, identify opportunities beforehand to act upon them on time and also to monitor and mitigate risks as they start to surface.



## AIRLINE PLANNING PROCESS

# & ANALYSIS TOOLS

### Analysis Frameworks

#### Demand Drivers

- ➔ Listing all ties that potentially connect and foster the demand for air travel between two destinations is the first step to assess all consumer segments, sub-segments and their characteristics inside of a particular market.
- ➔ It is an essential first analysis across all Airline Planning Processes. A comprehensive overview of the identified sub-segment's will help estimate their price and time-sensitivity - which in turn will be helpful for identifying peak departure/arrival times while Schedule Planning.
- ➔ It is the first step for the next tool: market prioritization.

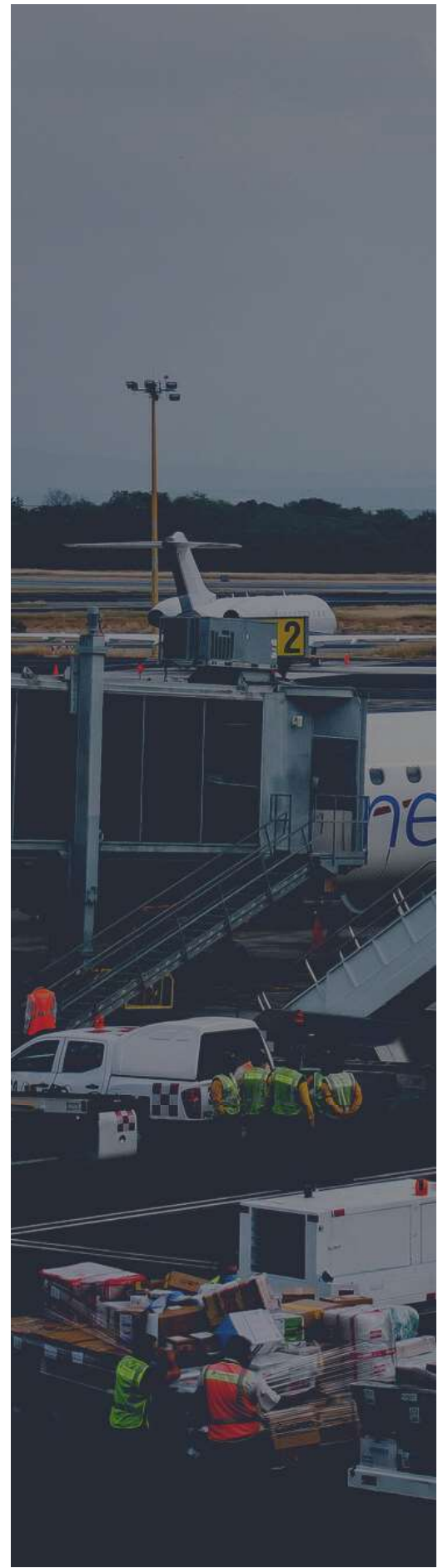
**SCHEDULE PLANNING & ANALYSIS FRAMEWORK TOOLS**

FREQUENCIES	TIMETABLE	FLEET ASSIGNMENT
<b>DEPENDS ON:</b>	<b>DEPENDS ON:</b>	<b>DEPENDS ON:</b>
<ul style="list-style-type: none"> <li>• DEMAND SEGMENTATION &amp; EACH'S PREFERENCES</li> <li>• MARKET SHARE ESTIMATION</li> <li>• FORECASTED LOAD</li> </ul>	<ul style="list-style-type: none"> <li>• DEMAND SEGMENTATION &amp; EACH'S PREFERENCES FOR PEAK TIME</li> <li>• AIRPORT &amp; STAFF CONSTRAINTS (CONNECTING BANK TIMES, SLOTS &amp; GATE AVAILABILITY, CREW SCHEDULING</li> <li>• MAINTENANCE REQUIREMENTS)</li> </ul>	<ul style="list-style-type: none"> <li>• TOTAL DEMAND X CAPACITY ON ROUTE X GENERATED SPILL COST</li> <li>• SPILL ANALYSIS MAY CALL FOR DIFFERENT CABIN CONFIGURATION; INCREASED FREQUENCY OR BIGGER AIRCRAFT ON SELECTED ROUTES</li> </ul>

**HELPFUL ANALYSIS TOOLS:**

- DEMAND DRIVERS
- CONSUMER ANALYSIS
- COMPETITIVE LANDSCAPE

SOURCE: BELOBABA, 2015



## AIRLINE PLANNING PROCESS

# & ANALYSIS TOOLS

### Market Prioritization

- ➔ A market comparison tool that generates a performance index assessing which destinations will be more attractive given a set of data on indicators such as demand drivers, economic environment, competitive landscape data and degree of existing restrictions.
- ➔ As it helps select new markets and evaluate the performance across routes within a same region, it is the most helpful inside of a Network Planning process.

**NETWORK PLANNING & ANALYSIS FRAMEWORK TOOLS**

ROUTE PLANNING	ROUTE EVALUATION
<b>CONSIDERATIONS:</b> <ul style="list-style-type: none"> <li>• FLEET CONSTRAINTS</li> <li>• AIRPORT CONSTRAINTS</li> <li>• REGULATORY CONSTRAINTS</li> <li>• DEMAND &amp; LATENT DEMAND</li> </ul> <b>ANALYZES:</b> <ul style="list-style-type: none"> <li>• ECONOMIC ENVIRONMENT</li> <li>• GEOPOLITICAL &amp; POLITICAL ENVIRONMENT</li> <li>• COMPETITIVE LANDSCAPE</li> <li>• FINANCIAL EVALUATION OF NEW ROUTE</li> </ul>	<b>STEPS:</b> <ol style="list-style-type: none"> <li><b>1. ESTIMATE DEMAND &amp; MARKET SHARE</b> DETERMINE STAGE LENGTH, AIRCRAFT (ASK) &amp; BLOCK HOURS</li> <li><b>2. CALCULATE COSTS (FLEET DRIVEN)</b> AOC PER BLOCK HOUR IOC PER RPK/DEPARTURE/ASK</li> <li><b>3. ESTIMATE REVENUE (O&amp;D DRIVEN):</b> AVERAGE FARE, LOCAL REVENUE &amp; NETWORK CONTRIBUTION</li> <li><b>4. ESTIMATE PROFIT &amp; OPERATING MARGINS</b></li> </ol>

**HELPFUL ANALYSIS TOOLS:**

- DEMAND DRIVERS
- MARKET PRIORIZATION
- RISK ANALYSIS
- MARKET PROFITABILITY

SOURCE: BELOBABA, 2015



## AIRLINE PLANNING PROCESS

# & ANALYSIS TOOLS

### Risk Analysis

- ➔ Given a macro-environment analysis of a local (or global) market, a set of potential risks are identified. Those are evaluated in terms of likelihood and impact and plotted onto a heat map.
- ➔ This should be taken into consideration especially during medium to long-term decision-making - such network and fleet planning

### Market Profitability

- ➔ A comprehensive analysis of the competitive landscape and its customers is essential to understand a new or existing local market and identify potential gaps in service offerings. The Market Profitability tool uses the 5 forces of Porter and evaluates the degree to which each can influence one's profitability - assessing where the biggest threats lie within the selected country's industry.
- ➔ This helps when evaluating the adjustments that can or need to be made and which market-specific challenges to prepare for when considering opening a new route, during the Network Planning phase.



## AIRLINE PLANNING PROCESS

# & ANALYSIS TOOLS

### Scenario Planning

➔ Within any given long-term strategic planning, one has to factor in future scenarios that could change the industry. Wade's Scenario Planning tool assesses the most unpredictable and impactful events to generate 4 possible scenarios to help plan for mitigations.

➔ The lists of indicators that help assess if a particular scenario is coming into place is the most important step of Scenario Planning. This should be used during the Fleet Planning Process.

**FLEET PLANNING & ANALYSIS FRAMEWORK TOOLS**

**RELIES ON:**

- TRAFFIC FORECAST
- MARKET SHARE ESTIMATES
- REVENUE ESTIMATES
- OPERATING COSTS ESTIMATES (FLEET COMMONALITY BENEFITS)
- YIELD ESTIMATES

**IMPACTS ON:**

- ASK
- NETWORK EXPANSION POSSIBILITIES
- CASH FLOW & OVERALL FINANCIAL HEALTH

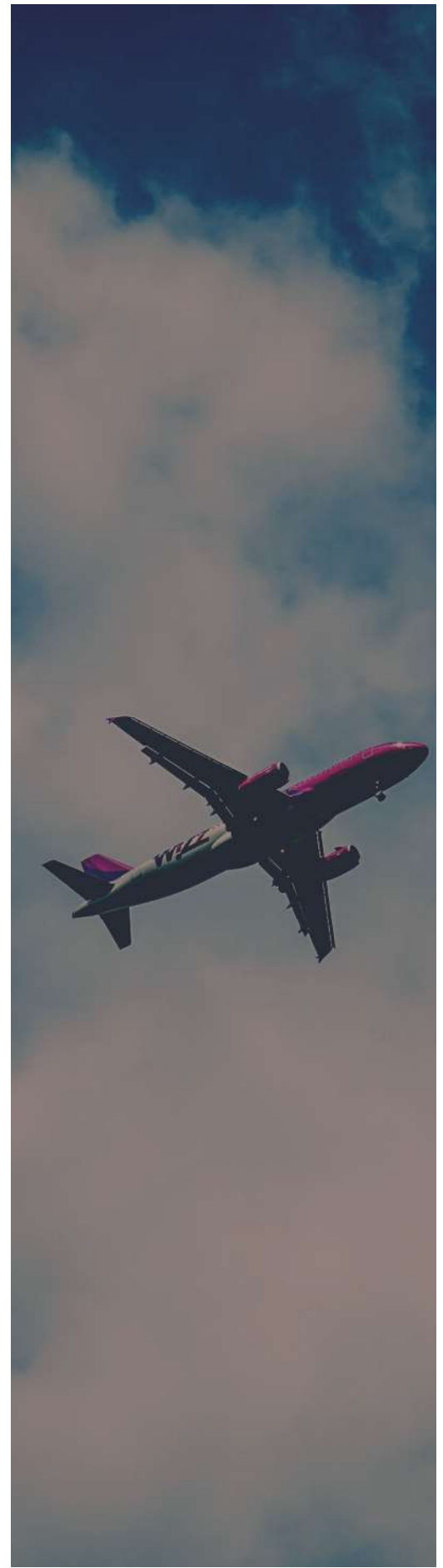
**THE AIRCRAFT SELECTION CRITERIA**

- 1. TECHNICAL CRITERIA:** PAYLOAD RANGE
- 2. FINANCIAL CRITERIA:** INVESTMENT FUNDS
- 3. ENVIRONMENTAL CRITERIA:** REGULATORY & POLITICAL ENVIRONMENT
- 4. DELIVERY TIME ESTIMATE:** SCENARIO PLANNING

**HELPFUL ANALYSIS TOOLS:**

- GLOBAL & MAIN O&D MARKETS RISK ANALYSIS & MONITORING
- DEMAND DRIVER DATA MONITORING
- SCENARIO PLANNING FOR LONG-TERM UNCERTAINTIES

SOURCE: BELOBADA, 2015







CONSULTANCY  
**METHODOLOGIES**

# DEMAND DRIVERS & FLEET, ROUTE AND SCHEDULE PLANNING

The North American airline industry highlighted the customer trends emerging post Covid - such as the Bleisure traveler and the high demand for premium cabins. In fact, due to the rise of less price-sensitive leisure customers, the demand for premium cabins has even surpassed the pre-pandemic levels in North America. Understanding what drives the consumption of air travel and how these drivers help differentiate each customer segment (beyond the classic Leisure, Business & VFR grouping) is essential not only for the airline management process but it's also an important first step for using the analysis tools I've talked about in previous articles.

➔ Demand forecasts are used across every step of the airline planning process - from fleet size to deciding which new route to add to the network; assessing which product features to offer, deciding number of frequencies and calculating passenger spill; setting timetables and estimating each customer segment's price-sensitivity to determine the most appropriate air fare to maximize yield and load factors.

➔ So when mapping each customer segment, it is important to analyze what drives demand for air travel in the first place, how many different consumer behaviors (and drivers) there may be within the traditional segments (Leisure, Business and VFR) and what could potentially disrupt demand for each segment and sub-segment.

➔ Air travel is a derived demand - meaning that the number of customers looking for an airline seat may depend on: the demand for tourism; on the commercial ties between two destinations; or the cultural and even migration flows between cities and countries. The overall economy and subsequent disposable income helps determine how much travel expenses there will be for each segment and sub-segment.

➔ Air Canada, for example, is preparing for an influx of VFR demand as the Canadian government is looking to increase their immigration workforce. A lot of that influx is expected to come from the Indian subcontinent, driving the need to expand its





# DEMAND DRIVERS & **FLEET, ROUTE AND SCHEDULE PLANNING**

access to that region and leading to a code-share partnership with Emirates.

➔ Being able to list each demand driver for those groups helps map opportunities across global markets when considering opening a new route (by doing a market prioritization analysis, for example), planning for capacity on existing routes and adjusting product offerings at the airport, in-flight services and ancillary offers accordingly to each segment and, most importantly, sub-segments.

➔ It also lays the ground for a Risk Analysis - the more awareness there is about what is driving demand, the more one can monitor decreases across indicators to spot which sub-segment's demand may shrink as well.

➔ Comparing demand drivers' data when evaluating routes is a powerful tool. It is essential to be aware of opportunity costs and estimating spill to assign aircrafts that will properly match the market's demands and have the right balance between capacity, CASK and PLF.

# MARKET PRIORITIZATION & NETWORK PLANNING

As pointed out in my Africa article, one of the continent's biggest challenge is to increase its intra-continental connectivity - which is still underdeveloped. Because other transport modes connecting the continent are also lacking, a development of air connectivity could boost Africa's economical growth - driving initiatives to promote integration and facilitation within the African aviation industry.

- ➔ To map and evaluate new route opportunities, a market prioritization tool can be used by airlines to identify attractive African destinations to further increase intra-continental connectivity.
- ➔ On a global network level, the market prioritization process can be done in two steps. First a regional analysis may be done by aggregating data and comparing different route areas - which can be helpful when analyzing a potential overall network gain when operating through a hub. Then a second prioritization analysis of each country within the selected region can be done, applying weights to each indicator group depending on their importance to the decision-making process.
- ➔ Demand drivers (seen in my previous article), average fares, RPK, infrastructure of other transport modes, regulations and airport constraints are some of the data that can be collected and analyzed when assessing the attractiveness of one market compared to another.
- ➔ The number of data of each “attractiveness indicators” can be large - they are usually grouped to overview the performance of each major attractiveness area. For example, data on GDP, disposable income, inflation, unemployment rate and exchange rate can all be aggregated inside of an Economic Performance group.



# MARKET PRIORITIZATION & NETWORK PLANNING

Below, an example of indicator groups and each data that can be collected and assessed among destinations:



Once each data is collected, outliers are identified and put aside, so that an adequate average can be generated among destinations. This is used to get the performance index for each indicator (disposable income, for example); the whole indicator group (Economic performance) and ultimately for the destination (South Africa, for example).

A profitability goal may have already been set for a region or for the airline's overall network performance. By estimating costs from analogue routes and assessing the connecting O&D passenger revenue a new route might bring to the network, markets can

be compared by their demand and yield potential.

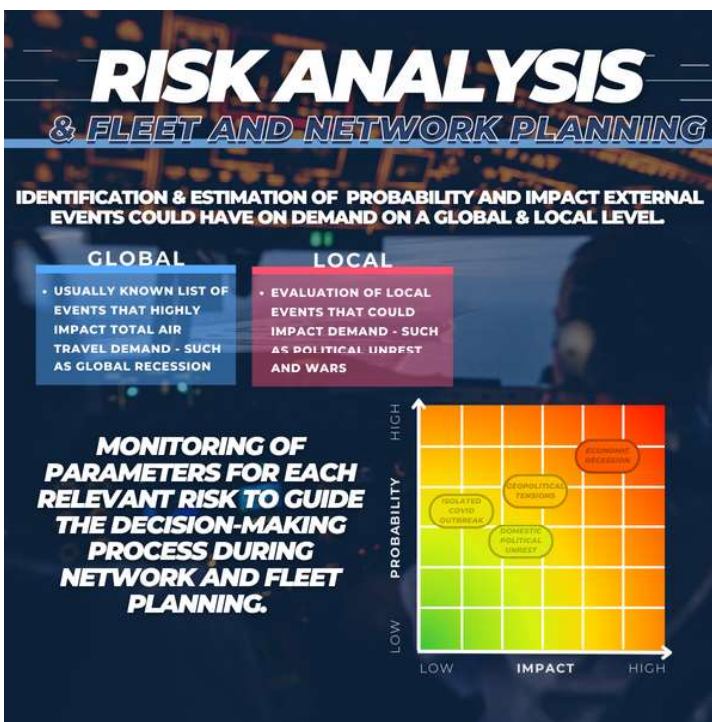
An analysis of each performance index will identify opportunities and challenges within a region or a destination. These should be explored further in a qualitative analysis.

Once a market is selected - based on the performance index, a risk analysis should be done. Diving into qualitative data to gain deeper understanding about the local industry dynamics is going to highlight what could potentially disrupt the identified opportunities & overall demand.

# RISK ANALYSIS & FLEET AND NETWORK PLANNING

My article about the Latin America's airline industry recovery has shown that the region has experienced some mixed performances. Weak economic performances and depreciated currencies were to blame for a sub-par demand and financial performance from important markets. Overall, the region is known for its economic and politic uncertainties - risks that could decrease demand and change the attractiveness of its market, even when there had been an optimistic forecast a couple of years back.

- ➔ Being globally and domestically aware of the risks that could decrease demand in the medium to short-term - and its impact on an airline's profitability is essential for capacity planning.
- ➔ Most global risks are known - such as economic recessions, high oil price fluctuations, spread of diseases, terrorist acts, among others. It is crucial to monitor the likelihood of those risks happening on a global level as the impacts on the aviation industry are extremely high.
- ➔ But it is equally important to be aware of the local risks when selecting a new market to operate or revising capacity for existing destinations. Those risks may not be as known and, therefore, one could be caught off guard if there is no risk monitoring and mitigation plan put in place.
- ➔ A risk analysis consists in diving into the economical, regulatory, political and geopolitical context, as well as the local competitive landscape. A qualitative analysis will reveal past patterns and help identify the events that are most likely to happen in a short to medium-term and that will have the most impact on air travel demand and on an airline's operations.



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# RISK ANALYSIS & **FLEET AND NETWORK PLANNING**

- ➔ Risks are evaluated on their degree of likelihood that such event will happen and impact that they may cause. These are plotted onto a heat map and the most probable and impactful should be monitored.
- ➔ Each risk's indicators should be listed so that they can be monitored. These indicators should be evaluated inside of a set of parameters that will point to a lower or higher probability of the monitored risk to take place in the coming months - depending on the latests market's developments.
- ➔ Revisiting these indicators and parameters is helpful for planning the next schedule period and deciding whether capacity should be increased, kept or decreased.
- ➔ Lastly, each of the most important risks (higher probability and higher impact) should have a mitigation plan to be put in action.

# MARKET PROFITABILITY & COMPETITIVE LANDSCAPE ANALYSIS

The Middle Eastern market is known for its luxurious and high-end travel. However, as seen in my last post, the region has seen LCCs gaining share at AUH and DXB - increasing 18,7 p.p. and 8,2 p.p respectively between 2019 and 2022.

A comprehensive consumer research paired with a competitive landscape analysis should be done regularly on currently operating routes' markets and on new entry markets to evaluate the gaps that may exist between customer segments and competitive offerings.

- ➔ Also through an analysis of a specific country's market, one may find potential risks to their operations and financial performance. A highly competitive route puts pressure on one's profitability, and identifying which are the biggest threats is essential to prepare and be competitive in a new market.
- ➔ Using Porter's 5 forces framework, it is possible to assess the degree of pressure that each will put onto an airline's profitability inside of a market - on a domestic or regional level. Plotting them onto a chart helps map the local industry's dynamics, which risks to prepare for and which market entry or development strategy will work the best.
- ➔ The competitive landscape (Rivalry and New Entrants) analysis will compare level of service and potential market share of other airlines by taking into consideration how the route is served (non-stop; one-stop flights), price ranges, frequencies, timetables, cabin service levels and ancillary portfolio.
- ➔ The number of start-ups in the last few years and if retaliation towards new entrants occurred will also reveal the competitive power of the market.
- ➔ The bargaining power of consumers and the availability of relevant substitutes to air travel should be analyzed to reveal the customer's expectations and trends, if there are gaps in





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# MARKET PROFITABILITY & **COMPETITIVE LANDSCAPE ANALYSIS**

product and price offerings that could be explored and how relevant alternative transport modes are for each customer segment.

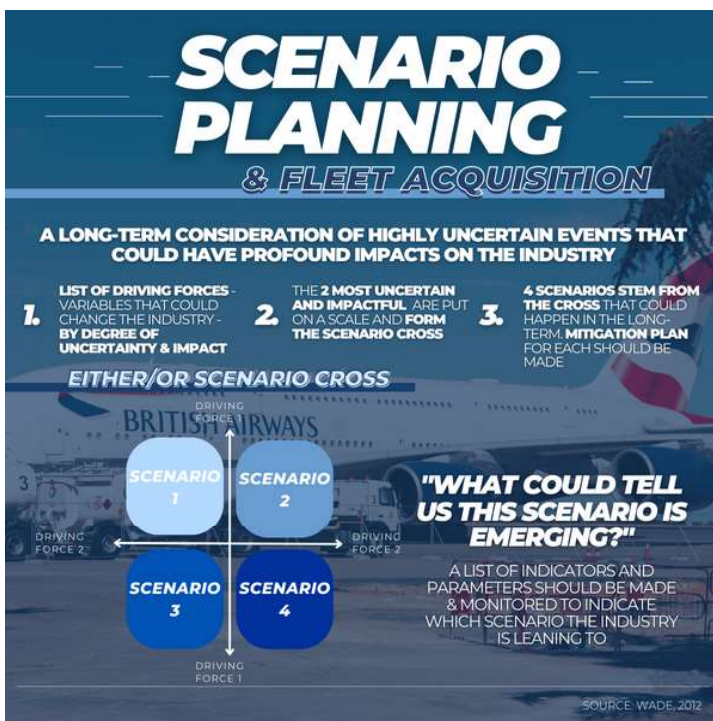
➔ Lastly, analyzing the number of suppliers available, their product portfolio and quality and the airport infrastructure will determine if the costs will be pushed up and if operational disruptions is bound to happen because of supply and/or labour constraints.

➔ As a result, market entry and development strategies can be designed to be either more bold or careful; and necessary product and service adjustment can be made taking into consideration local preferences and consumer dynamics.

# SCENARIO PLANNING & FLEET ACQUISITION

As seen in my Asia Pacific overview, the growth rate of the Indian air travel market has led to expansion plans by Air India and IndiGo - the latter making the biggest single purchase agreement of 500 A320s. When dealing with strategic decisions such as fleet acquisitions being aware of what could impact the industry in the long-term is important to evaluate the timing of aircraft orders and plan mitigations.

- ➔ In my previous post, the risk identification process focused on short to medium-term events that could impact demand and affect network planning, schedule changes such as frequency decreases or capacity revisions by assigning a different aircraft on a route.
- ➔ The fleet planning process, on the other hand, has to account for a longer period time span, as approximately 20-30 years can pass between the purchase agreement to the retirement of an aircraft. Therefore, airlines should be aware of possible future scenarios in the long-term before committing to a capacity increase.
- ➔ Woody Wade's Scenario Planning Process explains how one can try to predict the unpredictable by generating 4 scenarios. Identifying which core forces drive the industry and assessing them by degree of uncertainty and impact will guide the scenario planning process as well as the essential recurring monitoring stage and the development of a mitigation plan.
- ➔ Unlike the previous risk analysis's heat map, the scenario planning process takes into consideration driving forces - variables that either shape the demand for air travel or could impact the industry's operations. These are evaluated by degree of impact and uncertainty - instead of likelihood.



# SCENARIO PLANNING & FLEET ACQUISITION

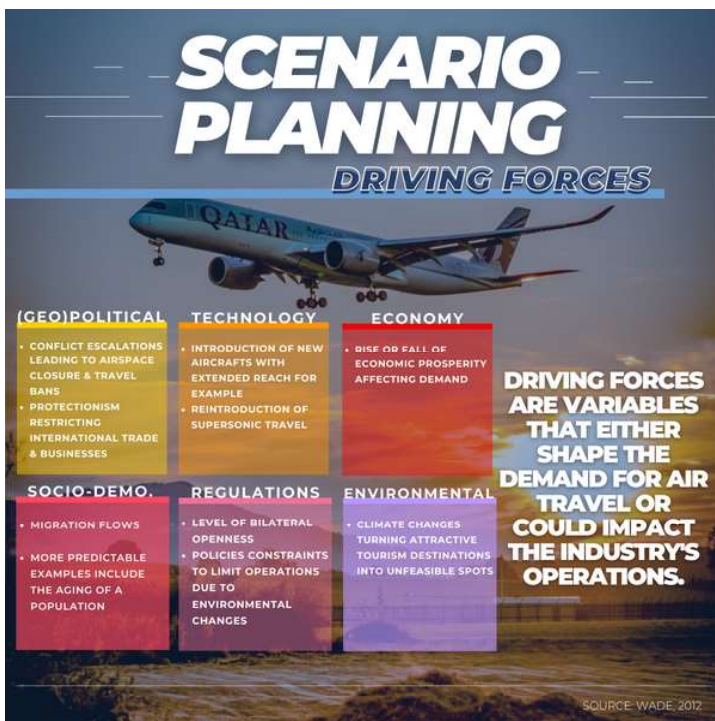
- ➔ As short and medium-term risk analysis might take into consideration events that are either already unfolding or are known to happen - such as the aging of the world's population, the long-term scenario planning takes potentially highly impactful but also highly unpredictable events into analysis - the big if's that could change the industry.
- ➔ Driving forces can stem from the political & geopolitical environment, technological innovations, the economical and social-demographical context, regulations and environmental changes. These can be either on a global, regional or domestic level - depending on the scenario planning scope.

💡 A few examples inside of the aviation industry may be: introduction of new aircrafts such as Boom's Overture - reintroducing commercial supersonic travel; geopolitical escalations leading to travel bans; climate changes turning once attractive travel destinations to unpractical tourism spots; the opening or restricting policies to foreign trade; migration flows increase or decrease; economic prosperity, etc.

➔ Once the two most impactful and uncertain driving forces have been identified, an either/or scenario cross is made. If the driving forces were to be, for example, reintroduction of commercial supersonic travel and migration flows an either/or scale would be "Affordable supersonic travel" / "Exclusive supersonic travel" and "Low VFR demand" / "High VFR demand". The two are plotted onto a graph and 4 scenarios can be identified.

➔ The 4 scenarios should have a description of what the new 'state of the industry' is like: detailing new market dynamics and consumer behaviors. It should also detail how the world and the industry evolved until it got to each scenario - this should help list indicators to look out for to spot early signs of the emergence of one of those scenarios.

➔ A mitigation plan should be made, indicators should be monitored and the likelihood of one of those 4 scenarios emerging should be updated on a regular basis.



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# SCENARIO PLANNING & **FLEET ACQUISITION**

➔ The monitoring of signals that indicate the emergence of one of the predicted scenarios is essential to prepare and guide long-term decision making. Better and more prepared actions towards the future can be made by being aware of how far or close the world is to reaching those scenarios and its likely impacts.



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