



FORECASTING NEW ROUTE PROFITABILITY

An Embark advisory product

Overview

Adding a new route to the map is an exciting day for an airline. It is a decision made by the Network Planning team after months, sometimes even years of market analysis. Along with the excitement, a new route can also pose significant financial risk for a carrier. This article discusses how airlines leverage big data and smart assumptions to minimize the financial risk of expanding the network.

Author: Jamie Kogutek

Embark Aviation: Vice President

“Forecasting the profitability of new market is a detailed process that can require significant time to fully vet.”

A few things come to mind along with the inaugural flight of a new route: ribbon cutting, airplane themed cakes, water cannon solutes, and most importantly, more travelers enjoying the efficiency of flight. A new route marks the achievement of growth for an airline, drives new revenue, expands its brand recognition, and sets the path for additional future growth. The communities use new services to promote greater economic vitality. Businesses are able to connect to new opportunities, families are able to reunite more frequently, and tourism potential is enhanced. A successful new airline route drives substantial benefits for all involved.

However, harnessing the potential of a new route comes with substantial risk for the airline who bears the immediate cost. What if demand for the new flight falls short of expectations? What if a competitor views the new route as a threat and unexpectedly reacts with lower fares? Or what if operating costs exceed the forecast? Historically, airlines have operated on razor thin margins and a miscalculation can quickly result in substantial and unsustainable financial losses. Further, by their very nature, aircraft are mobile, and can readily be moved to other opportunities.

With so much at stake, the most successful airlines invest significant resources in developing route forecast models to study the best growth opportunities. Airlines spend weeks, months, sometimes even years studying these models before launching a new route. While forecasting might feel like an overwhelming task that should be left to the math whiz, this paper provides a look into the process used by some of the biggest airlines in the world to forecast the profitability of a new route.

THE POSSIBILITIES ARE ENDLESS

Forecasting the profitability of a new market is a detailed process that can require significant time to fully vet. The end-to-end process of data gathering, number crunching, prioritizing opportunity, and communicating the idea to leadership can easily require several weeks or longer. For this reason, it is often not practical to forecast ‘everything’ to determine the best

opportunities. Rather, smart airlines invest substantial time in developing long-term network growth strategies that focus route forecasting to a smaller set of opportunities that fit the direction of the company. They also develop simpler forecasting criteria designed to determine the markets that most deserve a deeper analysis.

FORECAST COMPONENTS

A forecast is really the combination of two independent and uncorrelated forecasts, one for revenue and another for cost. The revenue forecast is typically more challenging as the outcome is ultimately dependent on a series of assumptions rather than known datapoints. Because a good revenue forecast requires several and often complex assumptions, producing accurate results not only requires good data, but also the tribal skills developed after much experience from observing industry growth and airline economics.

The cost forecasting process should be more straightforward as most companies typically have a good understanding of their own cost structure. If this holds true, allocating fixed and variable costs attributed to operating a new route is an easy calculation.

In the end, both sides of the equation (revenue & cost) are essential and equally important components in creating a reliable market forecast.

REVENUE FORECASTING

The two foundational components of a revenue forecast are 1) passenger volume and 2) average ticket price. When multiplied together, we derive the total passenger revenue a route is forecast to produce. Despite a simple starting point, the mechanics to produce each component is complicated.

1) Data Collection

Something unique to the U.S. airline industry is the Department of Transportation’s requirement for air carriers to share detailed information about their business; details that would be considered confidential by most industries. Examples of this data include the number of tickets sold, fares charged, fees collected, on-time performance, cost data, etc. The federal government created these regulations to gather data and monitor the industry’s behavior to ensure carriers

serve the public with safe, reliable, and fairly priced transportation.

Although this may seem intrusive to an airline's proprietary data, a positive byproduct of the data collection is the development of well-tested forecast models. Because this data is detailed, readily available, and published routinely, the U.S. airlines can benchmark their performance to the industry and observe growth and market reaction to implemented change over time. Through an iterative process, the public availability of data has allowed forecasting models to become very accurate.

While public data has fostered development of route planning models, it is not the only or best source of demand data in all cases. The DOT's data may be incomplete or irrelevant when forecasting international markets and those outside the United States. DOT data can be misleading in markets where no service exists or where travel demand is fulfilled through other means, such as communities where substantial demand is fulfilled through a somewhat distant, very large, regional airport. In cases such as this, additional market data can be derived from other sources, including from global distribution systems, airline settlement systems, tourism associations and destinations, cell phone data, and other governments or government agencies.

2) *Understanding the Variables*

The key to revenue forecasting is a deep understanding of the drivers of change to the foundational components of passenger volume and average price. Even without the prospect of a new route, macro- and regional economic changes can have material impact on travel demand.

When specific changes are introduced to a market, there are two primary concepts that drive assumptions on passenger volume and price: Revenue stimulation and market share.

Revenue stimulation. This is a term used to describe the growth in total passenger revenue resulting from new or additional nonstop capacity. The driving principle behind revenue stimulation is that more people will travel when getting from point A to point B becomes faster, cheaper, or a 'better' experience.

Faster: The effect of revenue stimulation is most magnified when an airline is the first to offer nonstop service between two cities. Nonstop service enables passengers to avoid circuitous routings and lengthy connections, reducing total travel time and increasing convenience. This is especially impactful in relatively short-haul markets, where connection and processing time really change the effective speed of travel. Business travelers are often most sensitive to this matter as travel efficiency is important when needing to maximize time with the client at a destination.

Even if nonstop service already exists, additional service is likely to result in revenue growth to some extent. By adding incremental departure times, passengers have more choice in travel time which leads to greater schedule convenience and flexibility.

Cheaper: Another driving force of revenue stimulation is lower ticket prices. As with most industries, increased competition generally has the effect of lowering prices in a market. New entrants will lower prices to steal market share from incumbent carriers, or potentially to attract an entirely new demographic to the market that previously wasn't flying. An example of latter example is often seen when ULCC carriers such as Allegiant, Spirit, or Frontier enter a new market. Their fares are so low, that incumbent carriers may see little revenue degradation while the new ULCC attracts entirely new travelers.

Better: Lastly, a less common driver of revenue stimulation is accomplished by offering a 'better' product. A good case study for this is JetSuitX or 'JSX'. JSX added capacity to markets already well served and charged a fare above industry average – yet still stimulated total revenue in the market. In part, they accomplished this in by using non-sterile terminals, which means no hassle of dealing with TSA. This is a much 'better' experience, thus attracting incremental travelers and growing market revenue.

The final piece to the puzzle is determining the **magnitude** of revenue stimulation. This is one of the more challenging aspects in constructing a revenue forecast. Each market is likely to react differently to new capacity depending on a host of variables that are as unique as the market.

Market Share. Once we have forecasted the market's reaction to the introduction of new or additional capacity, the next question to ask is, "How much of the pie will your airline capture?"

No matter how strong a market may look at this point, a market share forecast can make it or break it. A simple place to begin with is to assume a carrier's passenger share will be equivalent to its "fair" seat share. For example, if a new service will account for 20% of all market seats, begin with the assumption that roughly 20% of the market will be captured. Because the element of seats supplied is introduced in determining market share, the load factor can also be estimated.

Unfortunately, this simple approach is not sophisticated enough in markets with even a minimal degree of complexity, such as where competitors have a different number of nonstop flights, or they offer connections. In these more complex capacity scenarios, every seat is not equal. To compensate for this, forecasters rely on Quality of Service Index (QSI) models to predict the distribution of demand between airlines on a route. QSI models predict how airline schedules, connecting itineraries, frequency of service, aircraft type and other variables will influence market share. Even non-capacity related measures can be considered in a QSI model, such as low fare branding or frequent flyer loyalty.

Like revenue stimulation, the best assumptions are always built by analyzing how the market has reacted in the past.

3) Flow Traffic and Connecting Passengers

To this point, the forecast process has focused on local passengers – that is the passengers who will fly in the segment market to be added. However, most airlines depend on connecting passengers between flights – their own or those of codeshare partners – as part of their business model.

Additional consideration is given to forecasting models to accommodate connecting passengers. First, to even consider connecting passengers, we need a sense that the flights have room to accommodate additional passengers – both the target, local market flight and the connecting flights. Even if our forecasted market has room for connecting passengers, if the connecting flights do not, then either connecting passengers must be rejected or displace existing passengers. The

consideration of displaced passenger demand is a process known as 'spill and recapture'.

Second, connecting passengers' fares (and resulting revenue) must be prorated to only the portion associated with the target market. While the total fare that a connecting passengers pay is typically higher than a local passenger, the amount prorated to only the forecasted market is typically less than the full local passenger fare. This introduces two additional concepts: segment and beyond revenue. Segment revenue is the amount of revenue on a flight or market that combines the prorated connection revenue with local revenue. When this revenue is divided by passengers, it is expressed as Segment Fare. Beyond Revenue captures the value of new connecting revenue from the forecasted route on the rest of the network. If the connections involved are primarily with partner carriers, Beyond Revenue represents the value of the partnership. Depending on the financial agreements related to the partnership, the Beyond Revenue may not be realized by the primary carrier, who only receives the benefit of incremental Segment Revenue.

The process to properly capture connecting passengers and revenue in a market forecast can be very complex. Adding a single new spoke to a large hub can create dozens of new connections. While each new connection may be individually insignificant, they collectively add up to support very large hub structures. Major airlines use sophisticated models designed to forecast all the connecting opportunities that will flow over a new market, spill and recapture demand, prorate revenues, and forecast segment revenue to derive a true revenue forecast.

4) Finalizing the Revenue Forecast

With this information, you will be able to forecast key passenger revenue statistics such as load factor, average fare, total passenger ticket revenue, and market share. However, this may not be the entirety of revenue carried by the carrier in the market. Large legacy carriers often carry mail and cargo on passenger flights, which require consideration. Virtually every airline charges its customers extra fees in certain 'option' circumstances, called Ancillary Fees. If these categories make up a substantial portion of total revenue, detailed forecasting of these unique products.

Ancillary Revenue. Most airlines now derive significant revenue through sales of services beyond passenger transportation called Ancillary Fees. Historically, these were punitive charges designed to discourage certain behaviors, such as overweight and excess baggage fees. Over the past two decades, such fees have been inserted into the purchasing process, with examples like checked baggage and advance seat assignment fees common at many airlines. ULCC's have 'unbundled' many aspects of the travel experience into additional Ancillary Fees to allow them to offer lower base fares. Ancillary Revenue now represents up to 15% of total revenue at network carriers and up to as 40% at ULCC's.

COST FORECASTING

At established airlines, cost forecasting should be a relatively simple exercise that requires allocating known operating costs to a new route or frequency. Finance teams often update these models periodically for known or predictable changes, such as negotiated union pay rate increases. Because it is such a large portion of total costs, and subject to substantial and fast variation, a separate forecast of future fuel prices is often maintained.

The key to cost forecasting is unitizing various cost categories into appropriate and measurable characteristics of flights. Broadly, cost categories would include fuel, wages and benefits, aircraft rent and ownership, maintenance expense, airport expenses, overhead and others. Measurable characteristics of flights which can be expressed in units would include the number of departures, flight hours, block hours, and available seat miles (ASM's).

Certain variable direct operating costs are easily unitized because they are expensed in the same units. Examples of this include flight crews who are paid per block hour or airport landing fees charged per landing. The aircraft maintenance category may need additional analysis to determine the appropriate corresponding measured characteristic, as it typically has components that are utilized differently. For example, some maintenance items are expensed per flight hour while others are departure driven. Finally, there are operational and overhead fixed costs which have no clear ideal path to unitization for a cost model. These costs are often unitized with ASM's to spread them as evenly as possible.

In certain cases, there are special scenarios when the forecaster might adjust cost base for additional insights. A common example is the scenario where the additional flying is pure utilization flying, meaning the tradeoff is between flying the new service or parking the aircraft. In this case, revenue is often measured against only direct operating costs with an assumption that any fixed costs are already embedded into the existing airline structure.

FINALIZING THE FORECAST

We now have all the components necessary to complete the market forecast and make an intelligent decision whether a new market is worth the risk of entry.

Profit & loss. Finalizing the forecast requires a quick profit calculation where total costs are subtracted from total revenue. The P&L can be completed on an annual basis, however, is also commonly calculated monthly. A monthly outlook is recommended as it can highlight any impacts from seasonal fluctuations in demand or fluctuations in competitive capacity.

A final consideration when analyzing the forecasted P&L is **maturation**. Most models are designed to forecast steady-state results. Meanwhile, new routes will require two to three years to fully mature and achieve steady state revenue production. It's important to take this ramp-up period into account when assessing the airline's risk portfolio and early results.

Lastly, to compare the forecasted revenue performance of a new market with other markets, onboard revenue should be allocated across ASM's to produce Revenue per ASM, known as RASM. RASM is the gold standard yardstick for revenue performance because it reflects the strengths of both load factor and yields in a single metric. Like yield, RASM must be stage length adjusted for proper comparison to different markets.

Final disclaimer: no matter the investment made in producing a reliable forecast, there is always inherent risk in entering a new market regardless of the forecast. As the basic definition of a forecast would imply, most market launches do not go perfectly to plan.

CONTACT US

If your airline is growing and looking for the best revenue opportunities, Embark has the tools and experience to help you make smart and informed network decisions. Using our in-house suite of forecasting tools, Embark's experts have assisted clients with forecasting needs ranging from mainline carriers, 9-seat operators, Part 135 startups, to large multi-national carriers. Embark also has in-depth knowledge and experience modeling airline and fleet operating costs. The combination of forecasting tools and cost modeling allows us to meet and exceed your needs.

Embark is more than a consulting firm; we help craft airline business strategy - then work with our partners to make it a reality. Embark provides airlines with short- or long-term outsourced support across any commercial function. Whether support is required with scheduling, or developing strategic airline partnerships, or pricing and revenue management, Embark has over 100 years of experience taking airlines to new heights.

Contact our team via phone or email and we would be happy to discuss how we can work together to support your needs.

(571) 310-4462

admin@embarkaviation.com
