



Wanchoo & Li Associates

A Consultant's Choice

Or, How Ameer learnt to stop worrying, and love the airport

BACKGROUND

Wanchoo & Li Associates Present...



Wanchoo & Li Associates

- Our consulting services focus on solving our client's most pressing needs. **Clients always come first.**
- We provide **tailored solutions** for our high-achieving clients.
- We combine **Strategy with Advanced Analytics** to unlock the potential that your data holds.

Ameer Khan recently graduated with a degree in Analytics. During this time, he realized that consulting is his calling in life. Overwhelmed by the number of jobs being offered, however, he is having a hard time making a decision. He has narrowed his choices down to two: IBM in New York City, and Bain & Company in San Francisco.

Since he will be spending a lot of time traveling to various client sites as a consultant, he must consider the time spent flying to and from destinations, amongst other things. And so, he approached us.

OBJECTIVES

Ameer needs an answer to the following questions to make his decision

- How well-connected are the two airports?
- How often are flights delayed, or cancelled from the two airports?
- Which frequent flyer program should he enroll in?

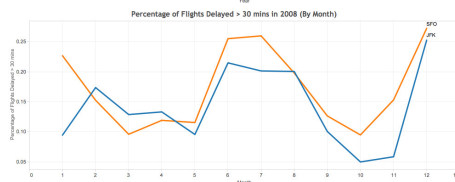
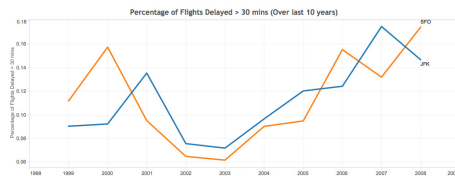
And once he decides on the job,

DELAYS AND CANCELLATIONS

2. How Often are Flights Delayed at SFO vs. JFK

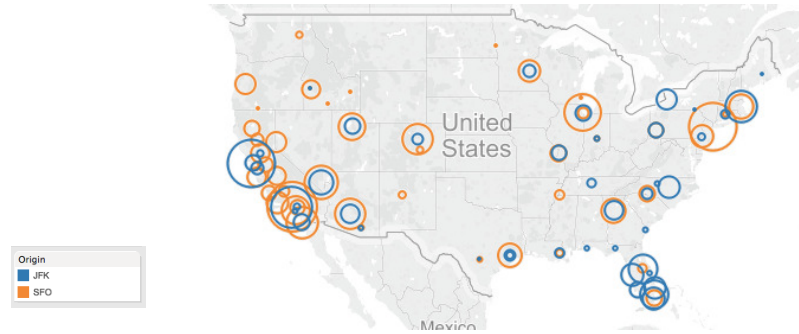
Consultants usually fly to their destinations on Monday morning, and fly back Thursday night. Since it's crucial to get to client site on time Monday morning, consultants don't usually have a lot of leeway (usually not more than 30 minutes) to accommodate flight delays.

So we decided to look at the percentage of flights delayed by more than 30 minutes out of each airport. We did this analysis for the past 10 years (1999-2008), and then looked at the month-by-month delay percentages for last year (2008).



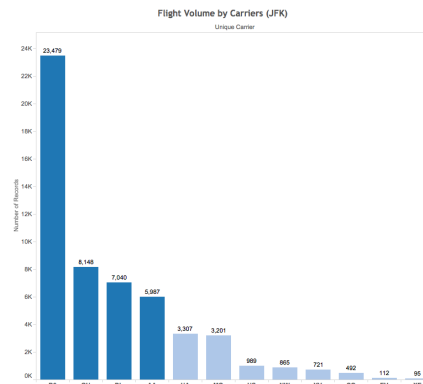
THE ANALYSIS

1. How well-connected are the two airports?



COMPARISON OF AIRLINES IN AND OUT OF JFK (2006-2008)

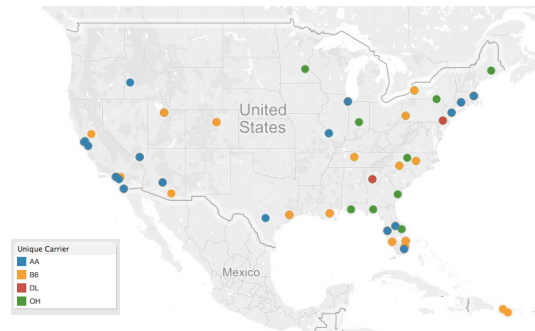
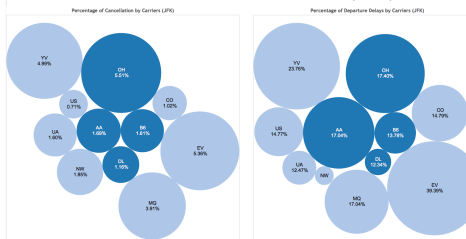
3. Which Frequent Flyer Program should he enroll in?



There are three important factors to consider while deciding which carrier's frequent flyer program to enroll in:

- The volume of flights available to choose from
- The percentage of flights that get cancelled or delayed, on average.
- The variety of destinations that the carrier flies to, and the regions covered across country

Since more recent data is much more relevant, we focused our analysis on years **2006-2008**.



The graph on the top left shows the volume of outgoing flights from JFK. As we can see Jet Blue (B6) far surpasses the rest. For comparison purposes, we can focus on the top four air carriers by volume: **Jet Blue (B6), Comair (OH), Delta (DL), and American Airlines (AA)**.

The two graphs on the right show percentage of cancellations and departure delays, respectively, for each carrier. In these two categories, Jet Blue and Delta come out as the best options (out of the four we chose to focus on based on previous analysis).

Finally, we look at the areas covered by each of the top four carriers. Here, we can see that Delta provides very limited options for destinations. Comair (OH), also a subsidiary of Delta, provides more options, but only covers the regions in east, and a couple in the Midwest. American Airlines (AA) and Jet Blue (B6) on the other hand, cover various destinations across the country, both along the east and west coast, and also the south and the Midwest.

Considering the criteria discussed above, **Jet Blue** would probably be the best option overall.

VISUALIZATION METHODOLOGY

Why we chose the tools and graph types...

The graphs were created using **R** and **Tableau**

The following thoughts guided our decisions to choose the visuals:

- The line graphs used to show delays succinctly summarize the trends. They also make it easy to compare SFO and JFK since the two are graphed on a single map. Colors were used to show the distinction between the two.
- We chose to supplement the given data with dataset that maps each airport to a city. This allowed us to easily display the airports on a map, which enhanced our understanding of the flight network. In particular, it helped us figure out how well-spread each carrier's network was in analyzing which frequent flyer program to choose.
- For the bubble graph showing percentage of flights that were delayed or cancelled, and for the bar graph before it, we chose to color code the top four airlines in a darker shade of blue than the rest. This was done in order to draw people's attention to these four, as these were the ones being analyzed. This allowed focus on the four main carriers, while putting it in context of the larger set of carriers and delay likelihood.

RESULTS & RECOMMENDATIONS

Why we chose the tools and graph types...

Based on our analysis, we found that:

1. How well-connected are the airports?

In terms of connection, both SFO and JFK followed similar pattern. Both airports were very well-connected to destinations on their own respective coasts. However, while both had fairly large number of connecting flights to the other coast, they covered fewer number of destinations.

2. How often are flights delayed, or cancelled from the two airports?

The two airports fluctuate a lot over the years, with SFO showing more delays more recently. Since last year's data is most relevant for this analysis, we also studied the month-by-month delays (for flights with delays > 30 minutes), and found that JFK had consistently fewer percentage of flight delays compared to SFO.

3. Which frequent flyer program should he enroll in?

While this decision, of course, requires knowledge of the price plans for the frequent flying programs as well, our analysis tried to cover the major criterion guiding this decision. In general, Jet Blue seemed like a good choice, as it provides the most number of flights out of JFK, while covering the most regions across the country, with relatively low delay likelihood.

Based on the above, we recommended Ameer to:

- Accept the job offer at **IBM in New York City**
- Enroll in **JetBlue's** frequent flyer program.

ACKNOWLEDGEMENT

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Thanks everyone!