Thanh Nguyen-Duong

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Project 1: Dashboard

For years, many news and media outlets try to exaggerate the dangers of air travel and flying. As we all know, air travel is the most convenient, if not, the most efficient option to travel from one part of the country to another part, or globally. There are many reasons why people use air travel. From families taking a vacation to business work related travel. Thus, it is essential to know that air travel is safe when they are thousands of feet off the ground. Media often times compare air travels against automobile and make it seem like that air travels is not any safer than automobile. In fact, we experience automobile accidents and fatalities every day, but when it comes to an airline accident and fatalities it really catch our attention. One main reason is due to the risk perception hyped by the media. Another part of the reasons is the scale and magnitude of an airplane incident; one airplane encompasses hundreds of lives; thus, one accident can cause a fatality of hundreds of lives. People often think automobile are safer than airline travels, due to the fact, that they are in control of their automobile whereas in air travel, safety and control is completely depended on the flight crew and captain.

Data Sources I used were:

Airline Safety, Aviation Safety Network

Crash Stats & Reports, NHTSA

Annual Financial Results: U.S. Passenger Airlines, Airlines for America

World Airlines Traffic and Capacity, Airlines for America

Statistics, Bureau of Aircraft Accident Archives

ASN Aviation Safety Database, Aviation Safety Network

After the initial analysis was completed, the design methodology was established. I chose the color blue for my overall theme. This was selected for being a color that is easily identifiable by all (including those with various degrees of colorblindness).This color selection allows for people to easily follow any color changes in the visualizations as well as maintaining the clarity of the dashboard. I also chose red as the comparison color because it is easily distinguished from the color blue. Although for some visualization charts, like pie and stacked column, I had to rely on the usage of multiple colors to be able to distinguish between multiple variables. In choosing the visualization choices, it is important to have both familiarity and variety. In showing a variety of visualizations, it is help to thoroughly deliver the messages to the audience as well as showing different information and help keep readers engaged while not boring them with one type of chart over and over again.

When sharing this information with the internal team and executive leadership, a straightforward walkthrough of each chart explains the process and the findings at once. It is necessary to keep the explanation process short, but precise and thorough as executives may not have a lot of time on their hands.

Chart 1: Stacked column chart of the number of enplaned passengers by each major domestic airline carrier 1995-2018) – This shows that more and more passengers rely on air travel as airline safety and regulation get more stringent and safer. Two incidents affected travelers' mentality were 2001 terrorist attack and 2008-2009, the Great Recession period, which we saw a decline in the numbers of seats taken by travelers during those times.

Chart 2: Pie chat of 2018 seats sold by major domestic airline carriers – The pie chart shows which domestic airline carriers had sold the most seats in 2018. From the visualizations, American, Delta, and Southwest airlines had sold the most seats in 2018 and followed by United. Alaskan and Hawaiian Airlines also sold a lot of seats in 2018 but did not see a lot of growth compared to the other major domestic airline carriers.

Chart 3: Bar chart of airline fatalities from 2000-2014 – This horizontal bar chart compare different airline carrier against each other for the numbers of fatalities each had from the period 2000 to 2014. All the US domestic airline carriers were highlighted in red for easy to distinguish. From a business strategy, it is good to understand how the competitors are performing both international and domestic carriers. Also, the data showed that most of US domestic airline carriers showed very low level of fatalities with American Airline being the exception.

Chart 4: Line chart of air vs. Car fatalities per 100 million miles from 1995-2008 – This line chart compared the number of fatalities between airline and automobile. I used blue and red to easily distinguish the trend for both variables. It was important to maintain the same axis for both, so as to not show confusion. On average, we found that air travel

fatalities per hundred million miles were 8.75 times lower than the corresponding value for car travel, although both showed decreasing trend from 1995 to 2008.

Chart 5: Line chart of airline fatalities over time (from 1942 – 2019) – This line chart shows the airline fatalities trend over the time period of 1942 to 2019.We can see there is a decreasing trend overall. This decreasing trend is due to the technology advancement in airlines in combination with more airline regulations being put in place for travelers' safety.

Chart 6: Heat map of airline accidents and fatalities by continent – This heat map shows the number of airline incidents and fatalities for each continent. Both Asia and Europe had the most accidents and fatalities due to it had more flights departed and arrived at these two continents. Of course, the volumes for South America and Africa are much lower so it did not experience that many accidents and fatalities compared to Asia and Europe. As for North America, it also did have some accidents and fatalities but not that many when compared against Asia, Europe and South America. Surprisingly, Central America had very little airline accidents and fatalities.

Chart 7: Bar chart of hijacking and fatalities from 1940-2019 – This bar chart shows a significant drop in hijackings and fatalities after the 9/11 terrorist attack in 2001. This is a graphic visualization showing just how much safer airline travel has become in addition to more airline regulations being put in place for travelers' safety.

Overall, from our findings, it is safe to echo the fact that air travel has become much safer in our present day and has been consistently safe especially after the 2001

Terrorist attack. These findings can support and amplify the confidence in air travel industry, when communicate with media and news presses.