# Executive Summary

The focus for this milestone was to create an executive summary for senior leaders at Southwest Airlines. Negative publicity within the media has recently portrayed airline travel as an unsafe method of transportation. There were several findings that counter this negative connotation of airline travel. Most findings were previously presented to internal peers (mainly the Data Science Management Team) through a dashboard. This synopsis highlights the main findings to help senior leaders begin external communication. The purpose of this paper is to outline the strategy used for creating the executive summary, the plan to present to the executive committee, overview of the findings, and discuss ethical considerations.

The executive summary starts with an agenda outlining the main discussion points. The background of the issue is considered first. This will help senior leadership understand the problem being addressed. A list of questions was posed to outline the focal points of the presentation. The questions are shown below:

* How does air travel compare to other modes of transportation for fatalities?
* How have accidents via air trended over time?
* Do number of accidents and number of fatalities for air travel have a relationship?
* How does Southwest compare to other airlines in terms of accidents and fatalities?
* Are there monetary implications tied to this negative publicity from the media?

PowerBI was used to generate the visualizations for the executive summary. The same initial four datasets were utilized from Milestone 1. Two additional sources were referenced for transportation data (*Bureau of Transportation Statistics*) and Southwest Airlines revenue data (*Conor McMahon*). There were six visualizations chosen for the summary. These visualizations included a Treemap, Line and Column Chart, 100% Stacked Column Chart, Clustered Column Chart, Column Chart, and Stepped Line Chart. These visualizations were chosen strategically to convey specific messages to the senior leaders. Finally, the presentation ends with a summary of the findings and recommendations.

The presentation to leadership provides evidence that airline travel is one of the safer modes of transportation in comparison to water (boats), highways (cars/busses/etc..), and railcars (trains). The airline accidents are decreasing overtime indicating the airline industry continues to improve on safety measures. Although this type of travel is considered safe, there are additional measures leadership can launch to improve the situation. These messages were portrayed in the visualizations throughout the executive summary presentation.

The first visualization shows a part-to-whole relationship of fatalities by different modes of transportation. The number of fatalities from traveling on a highway supersedes air, railroad, and water combined. The Line and Stacked Column Chart shows the trend of airline accidents over the years. This visualization shows how the number of accidents has drastically declined from 1946 until 2021. This chart also includes a five-year moving average to reiterate the trends over time. The 100% Stacked Column Chart compares the number of airline accidents to the number of fatalities over a particular period (2011-2021). The thought behind this visualization was that not all accidents may have resulted in fatalities. However, it does appear to show that an increase in accidents tends to result in additional fatalities. The Clustered Column Chart shows the top ten airlines sorted by the number of incidents (between 2000-2014). This visualization also shows the number of fatal accidents associated with each airline. For Southwest specifically, they rank 7th on the list in terms of number of incidents. Though, none of those incidents resulted in fatalities. The normal Column Chart represents the top ten airlines sorted by number of fatalities (between 2000-2014). The last visualization shows the Southwest Revenue by Year (2012-2021) via a Stepped Line Chart. Like the dashboard, the color scheme chosen for the visualizations was colorblind safe.

There are several summary points to consider. First, air travel has the least number of fatalities since 1960 compared to highway (car/bus/etc..), railroad (train), and water (boats) transportation. Second, airline accidents have steadily declined over the years. The annual count of accidents is lower than it has ever been since 1946. Third, higher number of accidents tend to result in a higher number of fatality counts. Fourth, Southwest has a high number of accidents reported; however, no accidents were fatal. Fifth, there is a potential negative impact to revenue due to the undesirable publicity from the media. Recommendations for the leadership team are listed below:

* Promote the facts presented regarding airline safety compared to other modes of transportation.
* Highlight the fact that airline accidents are at an all-time low.
* Launch an internal improvement project to decrease the number of accidents at Southwest.
* Investigate advanced aircraft safety measures and technology to invest for the company.

The ethical considerations during the executive summary milestone centered around the reporting of the data. All data sources are included in the reference section of the summary presentation as well as this paper for transparency. The data cleansing process was minimal and only involved reshaping steps. Missing data from the two new datasets were retained, but the initial placeholder for the missing contents was removed. Lastly, the leadership team needs to be honest with the public from the standpoint that accidents are inevitable. However, the public needs to know that our airline provides a safe mode of transportation overall. This starts with airline travel in general and extends into the other competitors within the airline industry. Our organization must continue to strive for improved safety each year to protect the passengers on each flight.

# References

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# Milestone 2 Requirements:

**The Scenario/Business Problem:**

Due to recent unfortunate airline crashes, the media has been promoting statistics stating air is no longer a safe way to travel. The news and media outlets have been bombarding the public with reports and figures about the trends of airline safety and that things are not looking good. What was previously thought as the safest way to travel, especially when compared to automobiles, is now being presented as one of the most dangerous to the public. But are any of these claims based on facts?

You work for an airline on the data science team as a data analyst and are a resident data visualization expert. You have been tasked with helping multiple groups in the organization combat this negative publicity and help tell the airline's side of the story. There is a fear internally about what this type of media coverage will do to airline sales and how it could impact the future of the company. Not only do they need you to help create some internal communications, but you will also be tasked with what is published to the public and the media.

Note - if you select your own topic, you must stick with the same business problem.

Examples:

* Media: Letting babies cry it out...  Business Problem: You work for a company that sells baby soothing products and want to combat the media
* Media: COVID Vaccine isn't safe for...  Business Problem: You work for a hospital or pharmaceutical rep and want to combat the media

The business problem above demonstrates the importance of storytelling, presenting information, and arguably most importantly - the ethics around how we present and share information. You are welcome to make up data for this project to meet the story you are trying to tell. You should never do that in a real project, but this is for academic purposes only.

**Project Task 2: Executive Summary**

Your dashboard was well received by the internal team and while some of the information was news to everyone, the entire consensus was that it is ready to be prepped for an executive review, so the external communications can be started. Your next task is to prepare an executive summary summarizing your findings and telling the story of what you found. This can be done either in PowerPoint, Prezi, Spark, etc.

Remember your audience – these will be senior leaders that care about the portrayal of the industry and their airline specifically. They also want to make sure they are being ethical and sharing information that isn’t misleading. This presentation will set the tone and recommendation for how the media is addressed going forward with the information and facts that need to be shared. Also remember that this audience regularly speaks with shareholders – so any information you can find to help predict future risks and the position of the company will be beneficial to the conversation. For example, if you found information that indicates where future sales will be impacted or where there are safety risks – this is important information to raise to this group. This audience is internal - they would be considered industry experts, so make sure your presentation caters to an audience that is familiar with the topic.

The following must be submitted to the assignment link:

* Your PowerPoint Presentation (created in PowerPoint/Prezi/Spark/etc.).
  + Should have at least 6 slides.
  + Your Presentation should have at least 6 visualizations on it
  + Make sure you follow a design methodology that you can defend (colors, labels, chart types, etc.).
  + Must have used at least 1 supplemental dataset to the original.
* A 250-word paper summarizing what you did and why you made the decisions you did – why did you choose the visualizations you did? What is your plan to present to the executive committee? What were your overall findings? What ethical considerations came up when presenting to this audience or while you were doing your research?

Remember: your GitHub repository can act as a portfolio for potential employers! I would highly suggest using this to submit your work, so you can fill it with good content that demonstrates the projects you are working on! Make sure to submit as PDFs to GitHub vs other file formats that will require download.