

Airwitter

Empowering Visualisations

INVESTMENT PITCH

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The key figures include most retweets, the highest negative tweet proportion of any airline, and the airline with the most tweets. These figures can be used to gauge the popularity of an airline, be that positively or negatively, in the Twittersphere. The two plots seen summarise the distribution of the negative tweets, and the proportion of tweets that are negative for each airline. This would allow the client to clearly understand customer sentiment towards their airline compared to competitors. The pie charts below also succinctly illustrate the proportion of negative sentiment directed at each airline and the breakdown of reasons behind negative tweets, which allows for a greater understanding of twitter sentiment towards airlines as a whole to be obtained.

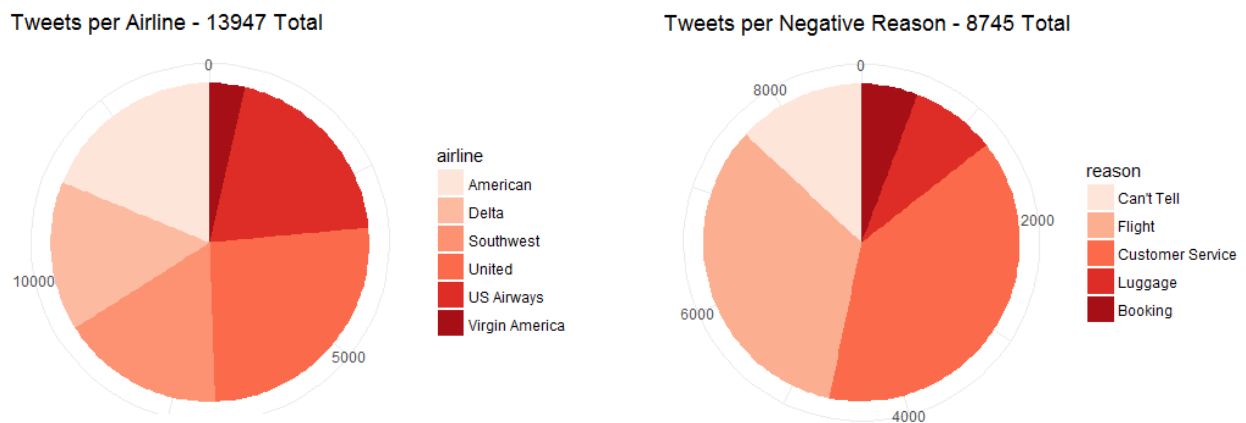


Figure 3 - Reason/Airline Pie Charts

The dashboard homepage also features two further visualisations, which present the breakdown of the reasons behind the negative tweets that are directed at a specific airline. They allow the client to compare the reasons for negative tweets aimed at them, while also allow a comparison of these reasons against competitors. This enables the client to understand where they are performing poorly and could improve, while also indicating areas in which they are outperforming other airlines. The visualisation of reasons by airline is shown below, and the plot of airline by negative reason can be seen on the dashboard.

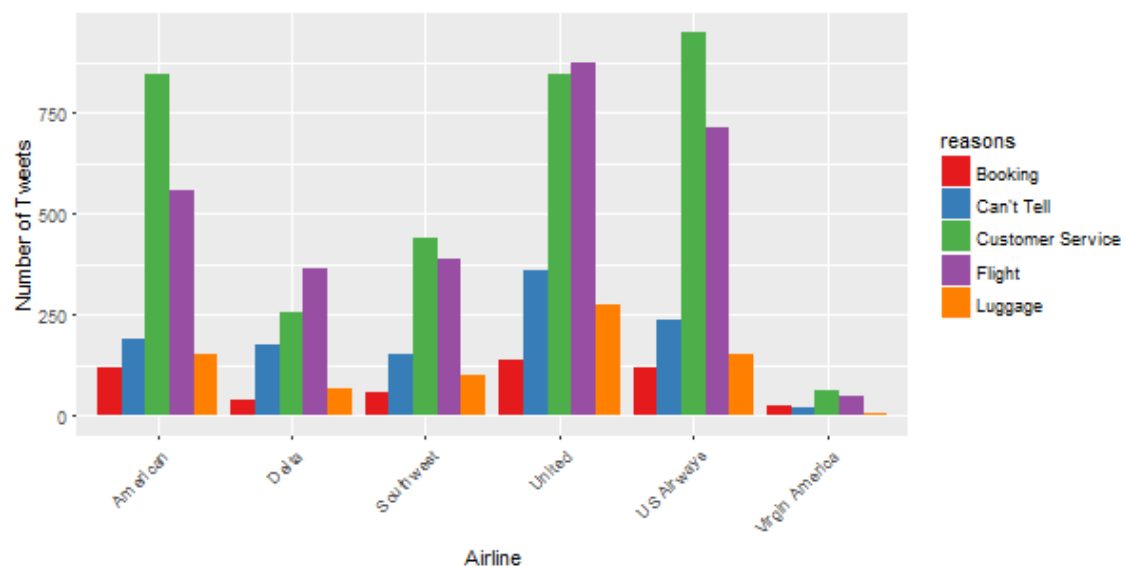


Figure 4 - Negative Reason by Airline

Timeframe Analysis

The second tab on the Dashboard, 'Time', focuses on analysing the change in sentiment over time. A summary plot illustrates the number of negative tweets each day, while a plot of negative tweets by airline each day explores the change in sentiment towards each airline over time, allowing spikes of negativity in the industry to be identified.

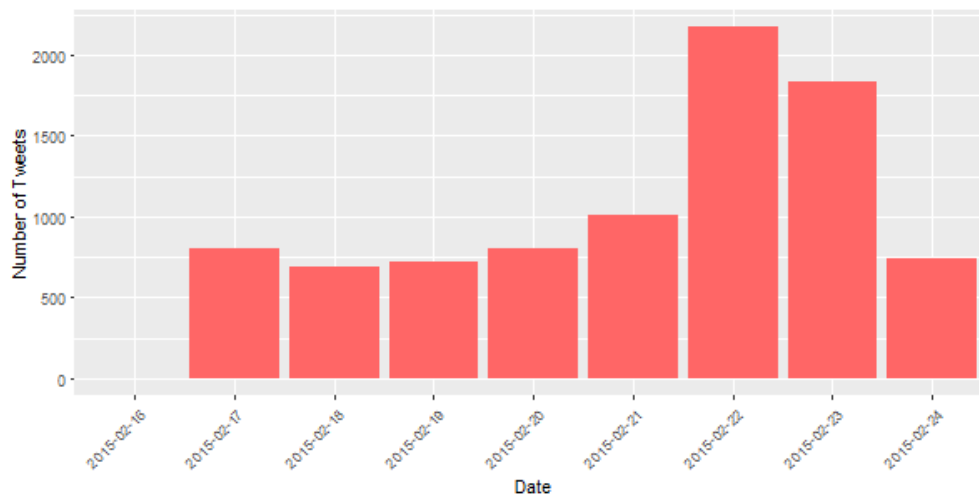


Figure 5 - Negative Tweets over Time

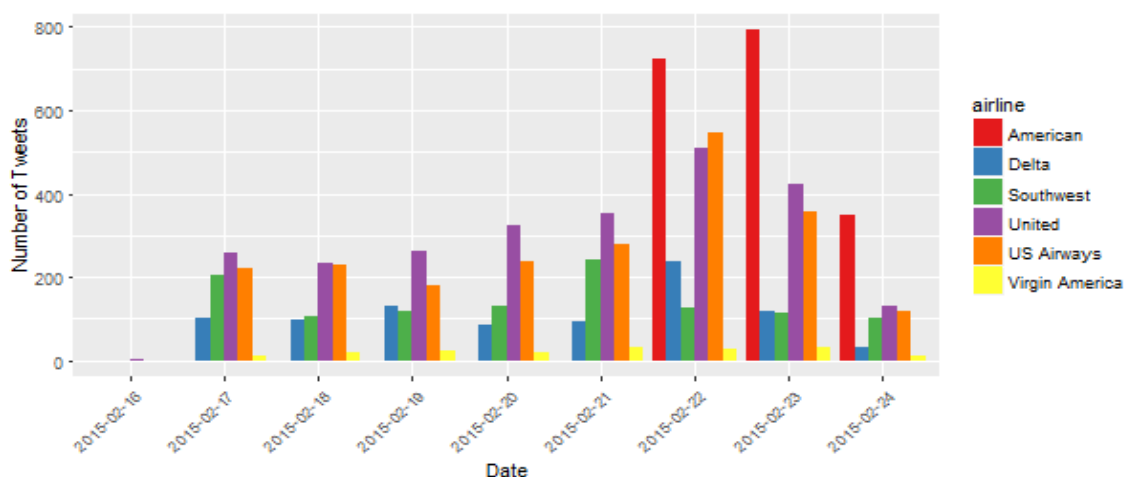


Figure 6 - Negative Tweets over Time

This graph allows the client to understand when exactly negative sentiment arises, which can be beneficial in identifying problem areas. American Airlines had received minimal complaint from the 16th-21st of February, until Twitter exploded with negativity over the following three days. Clearly, an issue arose which customers were not happy with it, and needed to be rectified.

Airline Specific

A similar method can be utilised when analysing reasons behind negative sentiment towards a single airline, which is seen in the 'Individual' tab. The client can select a particular airline from the dropdown (United Airlines is used for the below examples) and pinpoint specific problems on specific days, allowing any issues to be amended efficiently.

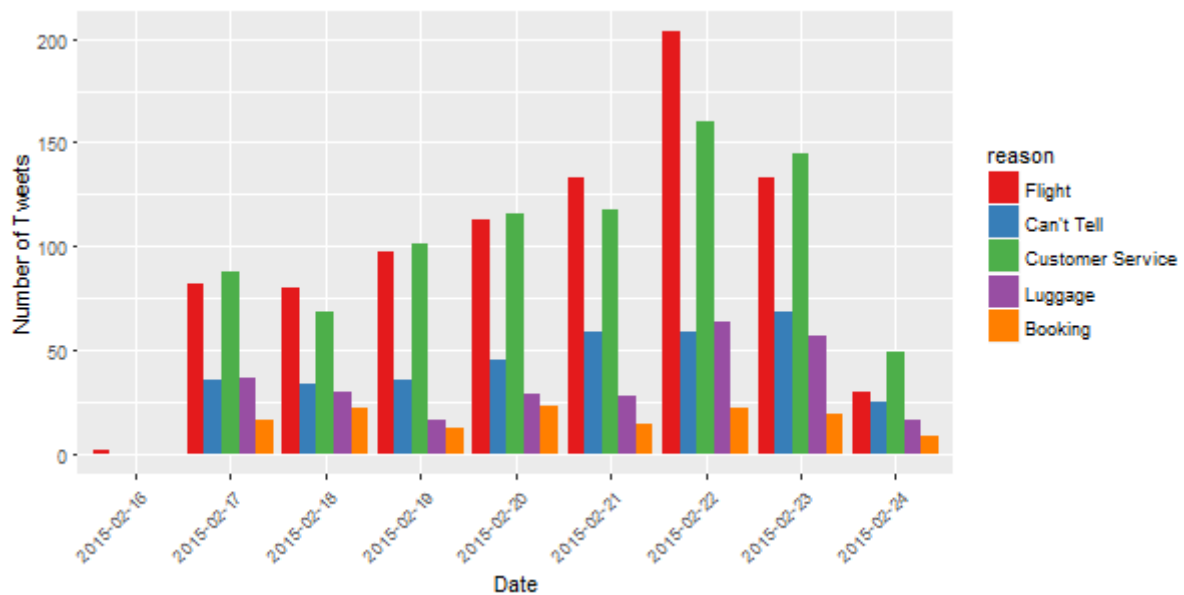


Figure 7 - Negative Reasons over Time (United)

As well as that, the summary figures over a quick and easy understanding of sentiment towards the selected airline. The most common reason, and thus most important area to be addressed, is easily identified, as is the most active day for negative tweets. Finally, the proportion of tweets which contain negative sentiment is also displayed, which is a good overall picture of customer sentiment.

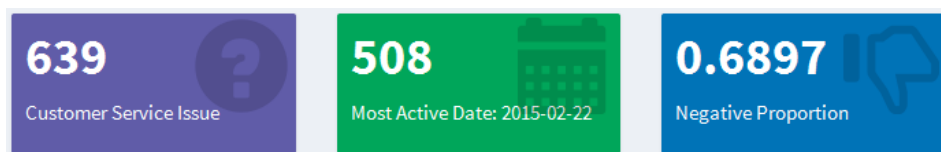


Figure 8 - Key Figures (United)

Retweets

Another important aspect of Twitter data that must be considered is the number of retweets a tweet received. Generally, this means another user supports, or relates to, the tweet in question. Analysing the breakdown of those tweets that have been retweeted allows the client to understand which tweets bear the most importance, and thus perhaps which areas require attention.

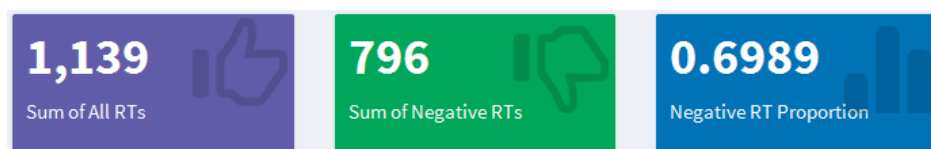


Figure 9 - Key Figures (Retweets)

The total number of retweets is displayed, as is the amount of negative retweets. These figures are used to calculate the proportion of all retweets that are negative. This gives the client a deeper understanding of the popularity of negative tweets, and how penetrating the negative sentiment behind them is within the Twittersphere. The graph below displays negative tweet reason by airline, containing only those tweets that received at least one retweet. The client can easily gauge the popularity of, and reason behind, negative tweets directed towards them compared to competitors.

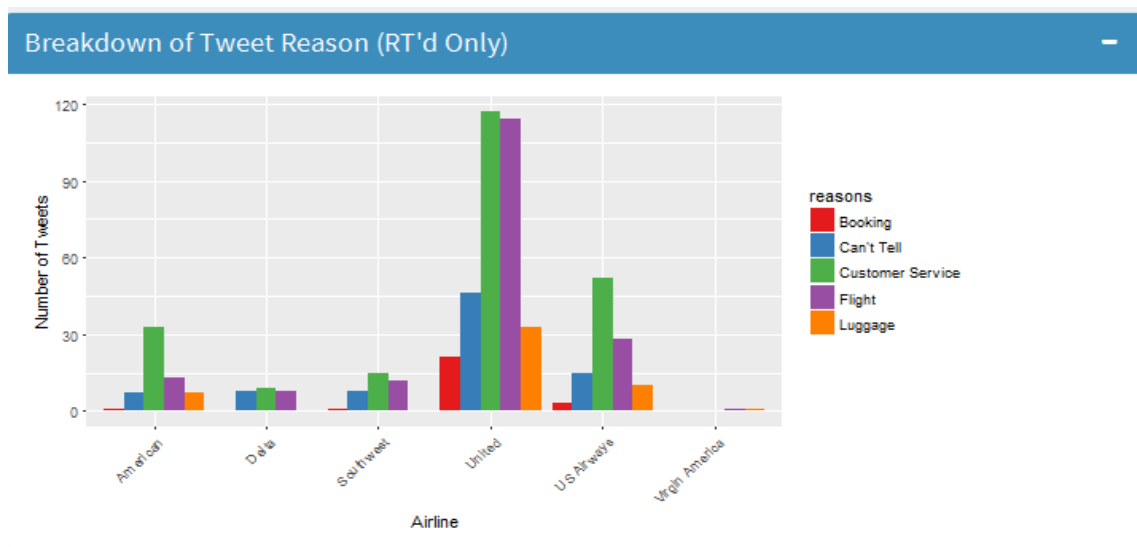


Figure 10 - Tweet Reason by Airline (Retweeted Only)

Location

The location of a tweet is a significant factor when gauging sentiment amongst customers. Using coordinate data, tweet locations can be pinned on an interactive map and classed as either positive (green), negative (red) or neutral (blue).

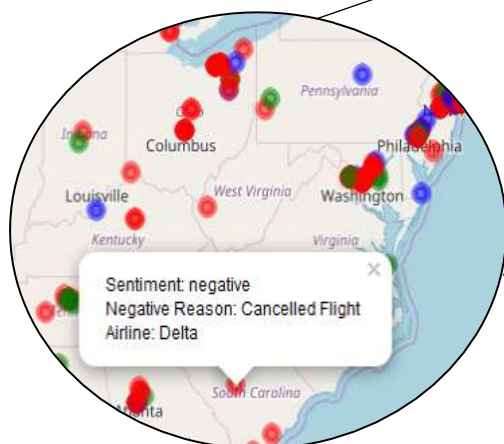


Figure 12 - Zoomed World Map

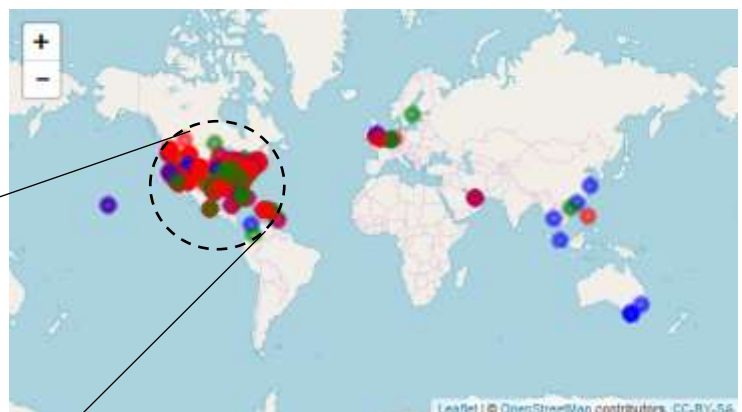


Figure 11- World Map with Pins

Using this visualisation, the client can easily visualize those areas where sentiment is either predominantly negative or predominantly positive. The popup (customizable) displays the sentiment, the reason behind this sentiment, and the targeted airline. This allows the client to generate a sustainable plan to improve the service in those areas where it is necessary, and commend the standard achieved in areas where sentiment is predominantly positive.

Conclusion and Further Prospects

The team at Airwitter hope this portfolio has proven insightful and explanatory. This branch of Airwitter prides itself on the production of empowering visualisations, and enhancing the application of visualisations in the modern business environment. The team hopes that the figures, graphs and analysis enclosed in this document do just that. The second branch of Airwitter, hoped to be established in the near future, will focus on pure sentiment analysis and forming a quantitative understanding of Twitter data.