

Topic and Sentiment Tracking of the Airline Industry Since COVID-19

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The Problem

Background:

The reputation of the US airline industry has been greatly damaged due to Covid-19. Tracking the topics and sentiment during these times can help airline companies when best to proceed with a relaunch strategy.

The final dataset:

- Raw data from Webhose:
 - Thread title: airline
 - Type of sites: news and blogs
 - Country: US
 - Language: English
 - Dates: last 30 days since 27 JULY 2020
 - Size: 20,015 feeds
- Final data:
 - Deduped with SimHash (optimized with Hamming distance of 20) and Word2Vec (similarity score > 0.7)
 - Size: 13,341 feeds

Topic Tracking

Methodology

- Latent Semantic Analysis on tf-idf word tokenizer of unigrams, bigrams and trigrams (optimal parameters: min_df: 10, max_df: 8000, max_features: 3000, topics: 2)
- NER from SpaCy to identify most commonly mentioned US airline companies in last 30 days. (major US airline companies tracked: Alaska, Allegiant, American Air, Boeing, Delta, Frontier, Hawaiian, JetBlue, Southwest, Spirit, United)

Findings:

- COVID-19 dominant topic, leading to not well differentiated topics.
- However, consistent thread in COVID topic on the wearing of masks on flights
 - Signs that airlines are moving towards safely re-opening?
- AA mentioned almost twice as much as any other airline

Topic: COVID

Label: COVID prevention protocol

Top 5 articles and similarity scores

Alaska Airlines: Wear mask or else! 0.68
 Airline mask policy: Do you have to wear a mask on a plane? 0.66
 Coronavirus: United Airlines says you need to wear face mask in airport 0.6
 Airlines are actually banning flyers who won't wear masks 0.58
 Alaska Airlines could suspend passengers who refuse to wear a mask 0.57

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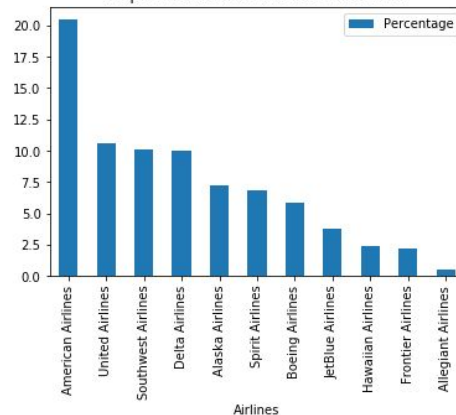
Topic: Airline companies

Label: Companies

Top 5 articles and similarity scores

southwest philly airlines 0.75
 united airlines to require masks at all airports 0.7
 Information for american airlines cancellation policy 0.68
 TC-JND A330-200 Turkish airlines 17-08-16 ebbr maarten-sr 0.68
 eight airlines pinned, they "violate passenger rights" 0.67

Proportion of US Airlines Media Mentions



Sentiment Tracking

Methodology

- LexRank on weekly feeds to produce extractive summaries that are three sentences long.
- Sentiment from NLTK Sentiment Intensity Analyzer on weekly summarized articles.

Findings

- Progressive strategies being talked about in terms of safely re-opening regular flights
- By week 4, the discussions appears to have finally moved away from COVID.
- Positive sentiment increases as the weeks go on
- Negative sentiment decreases from week 4
- These trends indicate that the media's opinion of the industry is rising and they may be able to create strategies to relaunch their brands/services.

WEEKLY SUMMARY EXCERPTS

Excerpt from Week 1 Summary:

Sunday, 28 June 2020 White House does not commit to temperature checks in meeting with U.S. airlines Top U.S. airline executives met on Friday with Vice President Mike Pence and other senior administration officials but did not come away with any commitments from the White House on mandating temperature checks for airline passengers. Airlines want the U.S. government to administer temperature checks to all passengers in a bid to reassure the public.

Excerpt from Week 2 Summary:

If you are flying on a U.S. commercial airline, you often have two options: the major carriers (US Air, American, United, Delta and their affiliates) or Southwest. You will find that the people who work for the airlines are attentive to your needs, and they will go the extra mile for you because they want to keep your business. United entered bankruptcy in 2002 and emerged in 2006. But imagine, if you will, that you and a group of people are put in a room and asked to design a just airline.

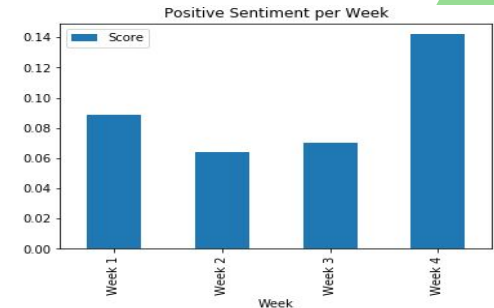
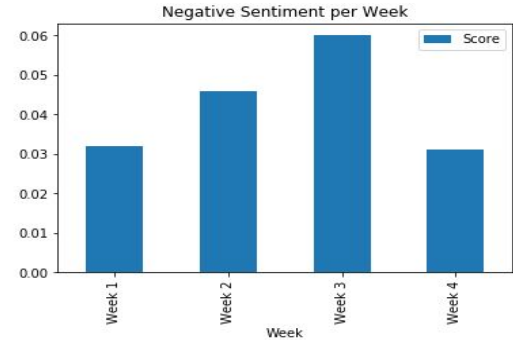
Excerpt from Week 3 Summary:

Little Known Facts About Spirit Airlines Contact Number. Little Known Facts About Spirit Airlines Contact Number. We discover this tactic most regarding. Where by a flight is cancelled, we stimulate our customers to discuss their alternatives with us, such as booking on another date. "Your new travel date must happen in a yr of the original travel date and you simply will really have to pay back any difference in fares

Excerpt from Week 4 Summary:

When I started using commercial airliners years ago, people would dress up in their best business suits. Also, on the planes, one encounters smelly people who don't know what deodorant is or refuse to use it, fat slob who take up more than one seat, people with tattoos, who look like they are from a motorcycle gang, passengers who persist in talking loudly on their cell phones, when it is prohibited to do so, and passengers who like to kick the seat in front of them.

WEEKLY SENTIMENT



Implications of Our Results

Airline companies can utilize our research to assess when it is best to pursue aggressive relaunching strategies as we learn to live with the effects of COVID-19.

- Applying a similar tracking approach on individual airline companies would be more informative for individual relaunch strategies

Broader research implications:

- Airline companies can develop their own COVID response chatbots that provide automated company responses to current topics in the news
- Similar sentiment tracking can be applied to the broader travel industry
- Can also be applied across industries e.g. retail

Thank you

