

SMARTPHONE SENTIMENT ANALYSIS



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Smartphone Sentiment Analysis

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EXECUTIVE SUMMARY

Helio, a smartphone and table application developer, has asked Alert! Analytics to perform a sentiment analysis on two popular smartphone models – the Apple iPhone and Samsung Galaxy. The end goal for Helio is to choose which smartphone model and manufacturer they will partner with to develop a new application suite designed for aid workers in developing countries.

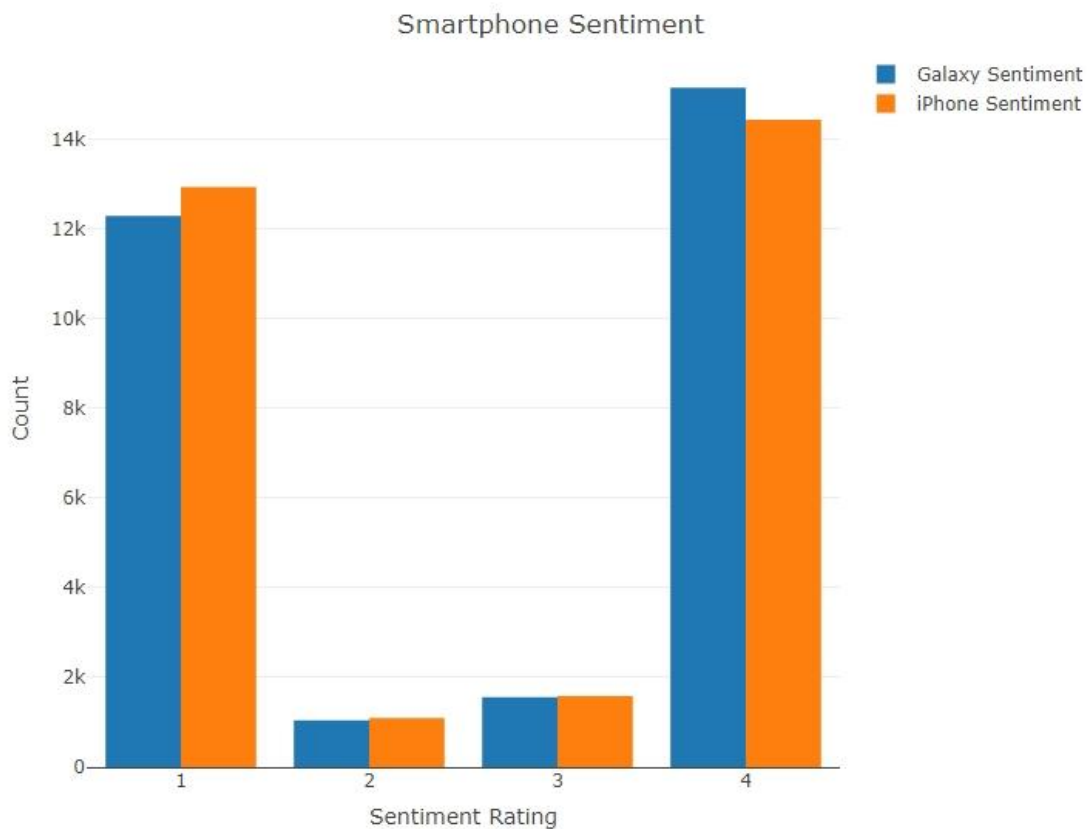
The goal of our analysis is to provide Helio with overall sentiment regarding both models of smartphone to aid in their decision. The data used in this analysis was scrubbed from the internet from 30,032 websites to provide a large sample size to capture sentiment towards each device.

Findings

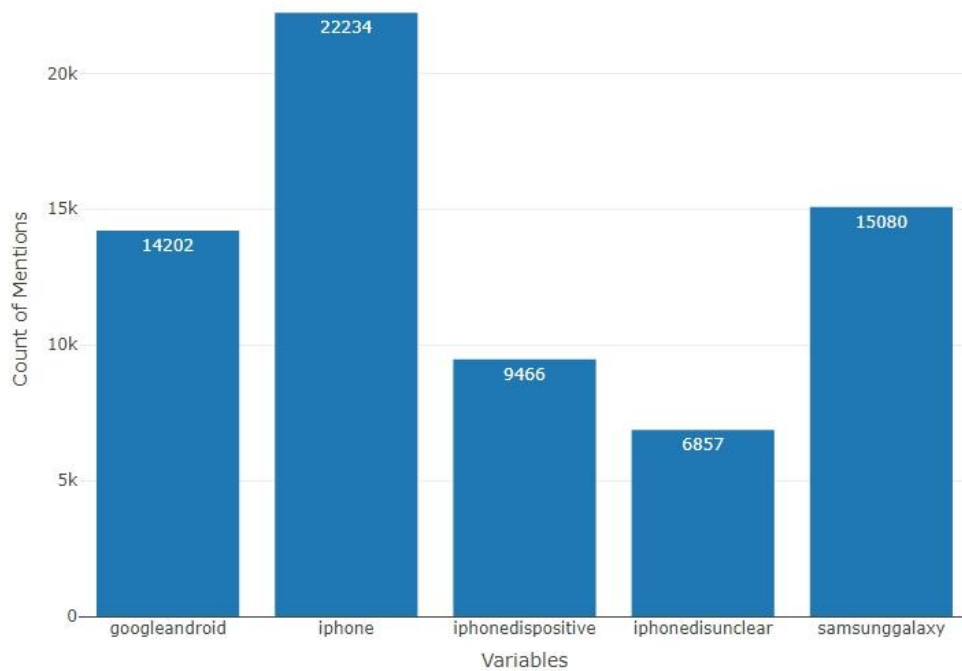
The sentiment categories originally ranged from 0 to 5, but in order to improve accuracy, we reduced the categories down to only 1 to 4. There did not appear to be a need to keep the extreme negative and positive sentiments separate from the other classifications. The very negative and negative ratings were combined into one category, and the positive and very positive categories were also combined into one category.

Old Rating	Description	New Rating	Description
0	Very Negative	1	Negative
1	Negative		
2	Somewhat Negative	2	Somewhat Negative
3	Somewhat Positive	3	Somewhat Positive
4	Positive	4	Positive
5	Very Positive		

Our findings indicate there was not much difference in overall sentiment between the iPhone and the Samsung Galaxy. With respect to ratings, the majority fell into the two extreme categories of 1 (negative) and 4 (positive). There were far fewer ratings predicted to fall into the somewhat negative or positive range. The Samsung Galaxy did have the most ratings in the positive category by a difference of only 720 counts from the iPhone. However, based on total sample size, this difference is not significant.



The top 5 mentions that influenced the results the most included the keywords or ideas in the chart below. The keyword mentioned most often of the 30,000+ webpages was “iphone” at over 20,000 instances. The items labeled “iphonedispositive” indicate a positive sentiment of the iPhone display and “iphonedisunclear” indicate an unclear sentiment of said display.



The breakdown of each rating category for each device is below.

Apple iPhone

Sentiment	Count
Negative	12,927
Somewhat Negative	1,096
Somewhat Positive	1,583
Positive	14,426
Total	30,032

Samsung Galaxy

Sentiment	Count
Negative	12,282
Somewhat Negative	1,042
Somewhat Positive	1,562
Positive	15,146
Total	30,032

Confidence

For both of the device predictions, there is a high level of confidence in the results. This confidence level is 86% for the Apple iPhone and at 85% for the Samsung Galaxy.

Implications

Because each device was rated very similarly, the opinion is that Helio would be successful with either smartphone model. However, since the sentiment ratings are very polarized and heavily weighted towards the two extremes, there still may be some negative opinions about the final choice independent of which device is chosen. Our results show that there is strong opinion for these two models, but the predictions show a slightly higher level expected in the positive range.

Methodologies

In order to complete this analysis, a couple methodologies were applied to improve our prediction accuracy. The first was the reduction from six rating categories to four as described in the Findings section. For the iPhone model, feature elimination was also used to remove any variables that did not heavily influence the sentiment results. Several modeling algorithms were tested and the final models were chosen based on confidence in the validation of each model.