

DMS TechPulse



Sentiment Analysis of Apple Product Related Tweets

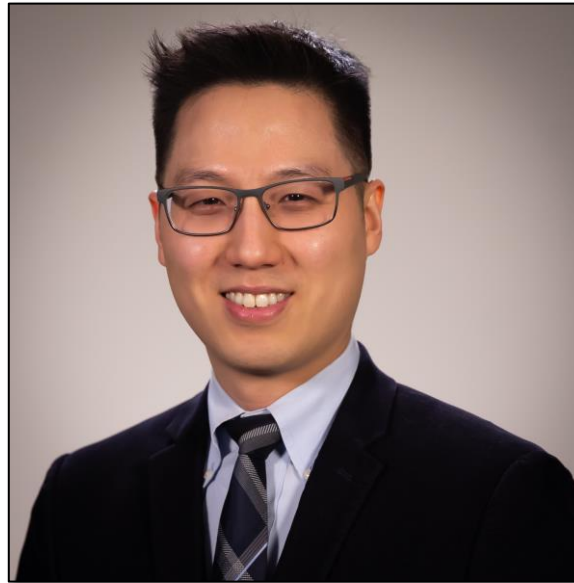
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DMS TechPulse

Data Science Team



Name: Danny Fox
Role: Github Lead
Contact: DBAfox



Name: Sam Choe
Role: Presentation Lead
Contact: schoe4208



Name: Monica Pecha
Role: Tech Lead
Contact: pecham1911

Agenda

Business Problem



Data Overview



Analysis



Recommendations



Future Steps

Business Problem

A photograph of several lanyards with Apple logos hanging from a wooden post. The lanyards are in various colors: white, green, blue, and black. They are all attached to white rectangular tags featuring the Apple logo in different colors (yellow, red, blue, green). The background is a wooden lattice structure. A dark purple banner is overlaid across the middle of the image, containing the text 'Business Problem' in white.

Apple Needed Our Expertise

- Apple launched new initiative to improve marketing strategy
- Real-time potential customer feedback from SXSW



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Branding Strengthens Market Penetration

*Strong branding
jumpstarts product
launches in the early
markets*

Early Market

*Momentum from early
market capture propels
mainstream adoption
rates.*

Mainstream Market

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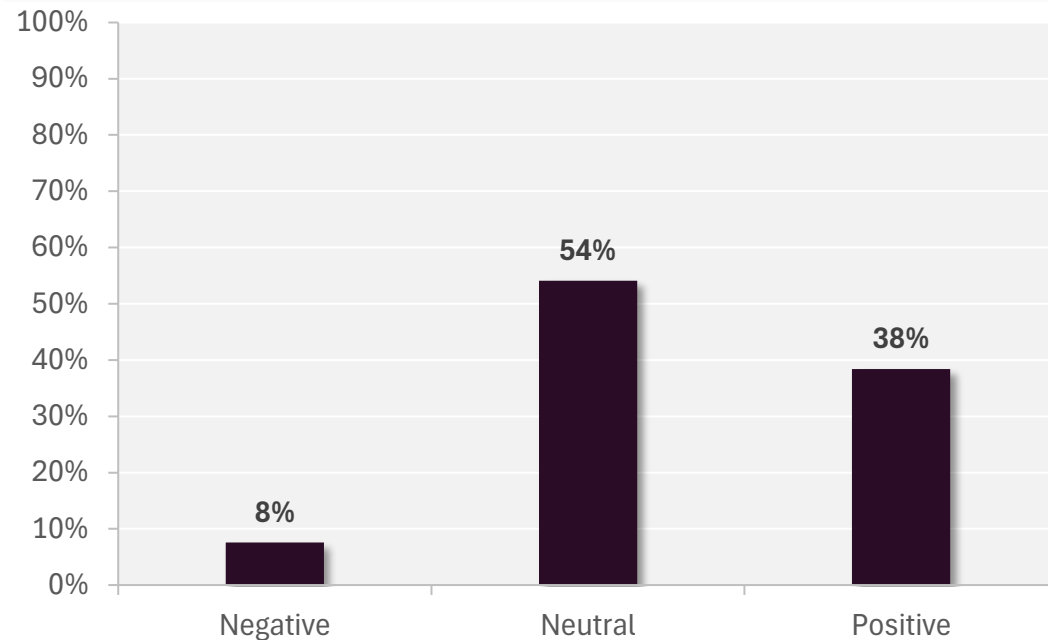
More Tweets The Better

- **Data Source**
 - Crowdflower provided 9,000+ Tweets from SXSW
- **Exploratory Data Analysis**
 - Data Manipulation
 - Synthesizing Additional Data
 - Auto-assigned Sentiment (VADER)
- **Data Limitations**
 - Bias from “Techies”
 - Sentiment Classification Issues

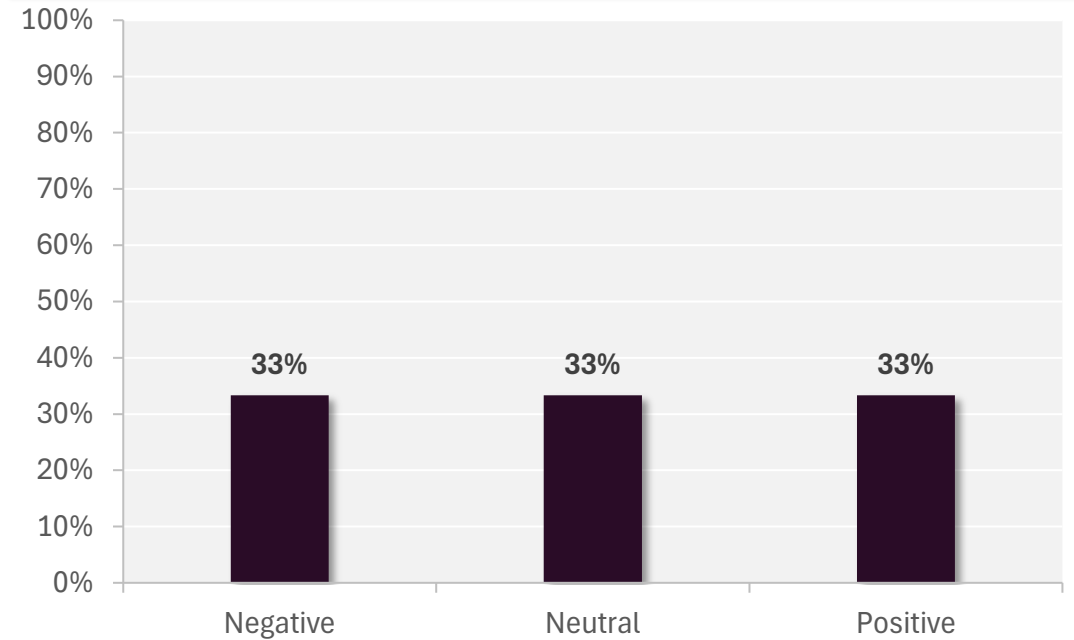


Addressing Class Imbalance

Original Dataset



Cleaned Dataset



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A top-down view of various Apple products arranged on a background of overlapping geometric shapes in muted colors like terracotta, grey, and red. In the upper right, a dark green iPhone 11 Pro is shown from the back, highlighting its triple-camera system and the Apple logo. To its left, a white AirPods charging case is partially visible. In the lower left, a pair of white AirPods lies next to the back of a dark grey iPhone 12 Pro, which also features a triple-camera system. A white Apple Pencil is positioned in the lower right. A portion of a silver laptop is visible in the bottom right corner. A dark purple horizontal band spans the middle of the image, containing the word "Analysis" in white text.

Analysis

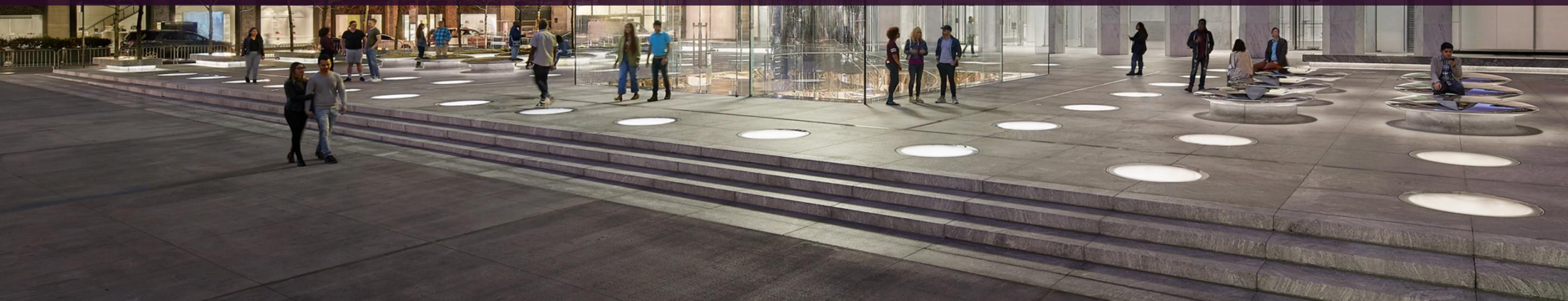
Our Modeling Process

- **Preprocessing:** Regular Expressions, Stop Words Removal, Vectorizing
- **Models Explored:** Multinomial Naïve Bayes, Random Forest Classifier
- **Metrics:** Precision Scores
- **Final Model:** Random Forest Classifier (~80% Precision Score)





Recommendations



The Meaning Behind The Tweets

Positive Sentiment



Negative Sentiment



Improved Battery A Must

People Demand for Better Battery Life

“My iPhone battery can't keep up with my tweets! Thanks Apple. #SXSW #precommerce”

“iPhone, I know this #SXSW week will be tough on your already-dwindling battery, but so help me Jeebus if you keep correcting my curse words.”

*“Not even 10am here in Austin and my iPhone batt is at 54% - sh*t #SXSW #notevenstartedyet”*



Pop Up Stores Are Very Effective

Quick and Efficient Pop Up Store

“Picked up an ipad 2 at the #sxsw pop up apple store! only 15 minute wait!”

“Marketing Genius: Apple opens pop up store outside of #SXSW”

“The apple pop up store at #sxsw is no joke.”



People Love Free Stuff

Provide Raffles To Offer Latest Apple Products For Free

“We have a winner? :) RT: @mention This is awesome.... How I got an iPad 2 during #SXSW!”

“Make sure you bring your business card to the #nonprofit meetup at #sxsw. It's your ticket into our drawing for a \$100 Apple gift card.”

“#winning #winning - just gave away 5 red mophie juice pack air's to fans with #Tigerblood at #SXSW No more dead iPhone batteries 4 them!”



What's Next?

Future Steps



We Can Do More....

- Expand our dataset to incorporate Twitter API
- Tailor analysis by individual product launches
- Look at the performance of the competition (i.e. Google)





Questions?