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Social media followers on stock Price and Marketing Spending

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Overview

Narpal Sandhu, Surjay Korlakunta, Josh Yeung, Kevin Pham are pleased to submit this proposal to investigate the impacts market spending and social media presence has on the stock market.

1. Project Background and Description

Our aim is to better understand how the social media advertising and promotions based on their following rate influence stock markets growth and scalability. We will be examining the stock market through Coca Cola stock (KO) which is a under the New York Stock Exchange. We chose to evaluate the stock of Coca Cola because in the past few years they have acquired multiple companies and have been incorporating their marketing strategy to boost the newly acquired company's sales. The major trends that we noticed is that Coca Cola has reached out to major social media influencers on Instagram, Twitter, Facebook, and YouTube, sponsoring them in order to influence that guide the millennial generation. Since social media information is consumed at such a rapid pace we want to see if these marketing tactics are a good use of resources. We have defined a successful tactic as one that increases the income of a company and furthermore increases the stock proportional to their social media following and marketing money spent.

1.1 – Domain and Dataset

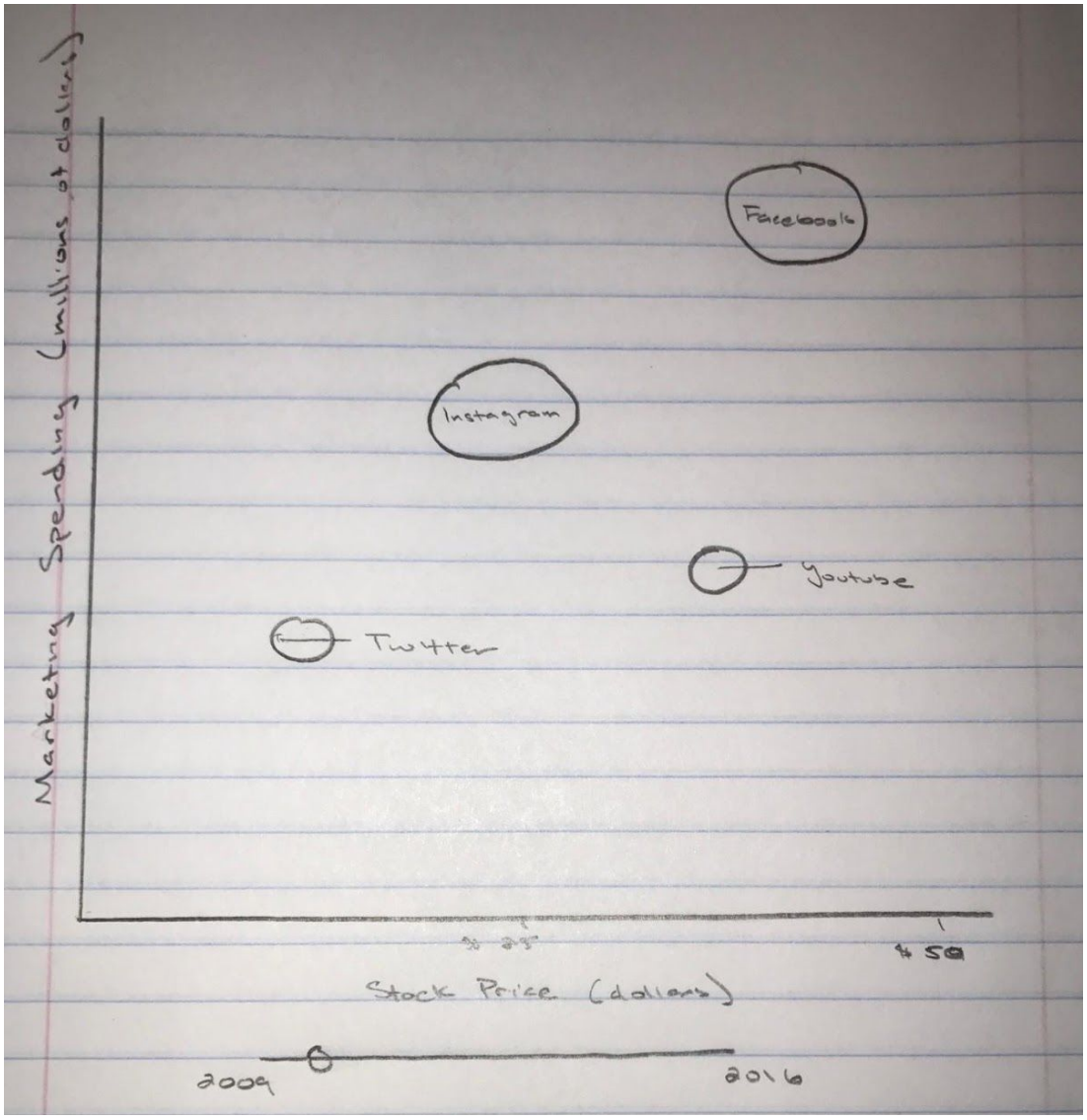
We have five major datasets: Coca Cola Stock prices from 2009 to 2016, Coca Cola Instagram, Twitter, and YouTube, Facebook follower from 2009 to 2016, and total money spent on marketing. The raw data for stock prices from Yahoo Finance will be comprised of three basic columns: date, number of shares, closing price. To clean the data will take the closing price per day and average the price in each week to give a more accurate reliable price. We are averaging out daily prices into one weekly price so we can eliminate dramatic outliers and jumps in the stock market due to outside factors. Since stocks of major companies normally spit-off (for example, a stock that is worth $50 dollars can be broken down to two $25 dollar stocks to increase the amount of people that are able to invest and if the company is growing). To eliminate the flux from stock-splits we will level the playing field with by averaging the stock price based on the total number of shares available. After cleaning the data, we will have a two-column table: data and a ratio of the weekly stock price and number of shares. This table will have 364 rows. The followers and subscriber data acquired form the appropriate social media APIs will also be averaged based on weeks. Marketing money data is given based on annual and quarterly reports which we will divided equally over the respected time.

1.2 – Investigation Outline

1. We will be using the Twitter, Instagram, Facebook, and YouTube API to acquire a dataset that has the number of followers and or subscribers over time from 2009 to 2016. (We will be suing data starting from 2009 because throughout research we saw that at the start of 2009, social media became more prominent and more accessible to everyone)
2. We will be using Yahoo Finance to acquire a data set for Coca Cola stock prices over time.

3. We will use the programing language python to clean the data, and map the increases in followers against the increases in stock prices from 2009 to 2016 (To see how data will be cleaned refer back to 1.1). We will use Plotly for Python, BeautifulSoup4, and Anaconda to evaluate our data.
4. The final project will result in a model that takes in stock name and appropriate social media channels and returns a graph that maps the stock prices against the marketing money spent based on social media followings over time.

1.3 – Proposed Visualization:



1. The circles size of the circles corresponds to the number of followers/subscribers the respected company as at a certain time.
2. The graph will be interactive, where one can use the slider on the bottom to see the change of stock prices over time.

2.1 – Task Allocation

Following is a complete list of all project deliverables:

Deliverable	Description
Narpal Sandhu	Data Analysis, Presentation
Srujay Korlakunta	Data Cleaning
Josh Yeung	Data Acquisition
Kevin Pham	Map Data

2.2 – Timeline for Execution

Description	Date
Acquire Data	OCT 21
Clean Data	OCT 28
Map Data	NOV 11
Analyze and Report Findings	NOV 18
Build Presentation and Story	NOV 25
Project Presentation	NOV 28
Paper	NOV 28

Expected Results

A model that takes in stock name and appropriate social media channels and returns a graph that maps the stock prices against the marketing money spent based on social media followings over time.