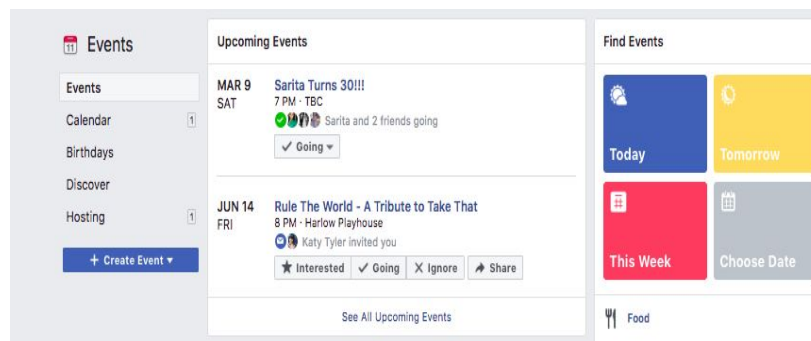


1. Social Media Campaign

Determine the kind of social media campaign that is suitable for a given domain (including best platforms, strategies that work for the different business functions in the business, etc.) You may use references/sources online that advise on methods to promote on social media channels.

a. Event - An event is a business strategy to promote the business by bringing friends together and notifying them of a social event. The best platform for brands to host their events and share the happenings is Facebook.

Facebook



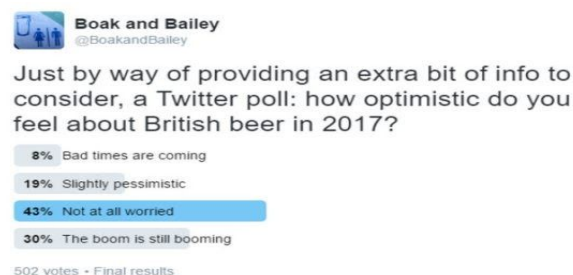
Twitter



Facebook has a specific page for the events, with the advantages for the people engaging in the events before, during, or after the events through the way of content sharing. For beer companies, organizing an event can significantly bring more people to try out the beers or involve in beer contests online. On Twitter, Coors Light company organized a social media campaign of hashtags #CouldUseABeer, which lets users record a short video about sneaking away to grab a beer.

b. Social polls - The business industry nowadays encourages engagement with social polls because eye-catching videos sometimes fall flat. Engagement with social polls personally helps them to learn more about their audience and increase the engagement with the customers. The much-preferred platform for brands to conduct their social poll is on Twitter. Since social media polls are one the most overlooked options for boosting interaction and enhance brand awareness through the participation of the viewer/user.

Twitter

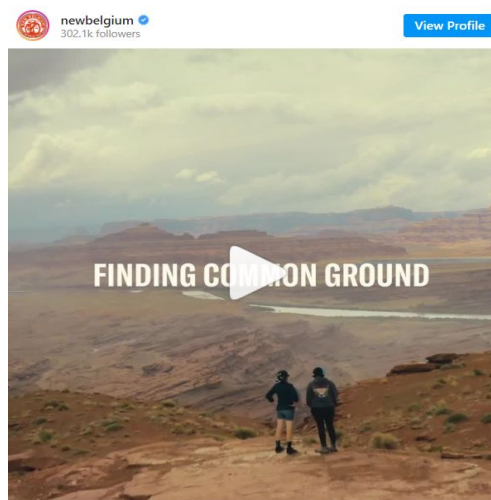


On Twitter, it is able to keep track of the poll records after the polls are ended. However, Twitter has the advantage of protecting the privacy of the voters which nobody will be able to see their vote. Besides, Twitter can set a date range for a particular poll while some other platforms are not capable of. For the breweries industry, they can start a poll to get an insight into the new flavor of the beer and also get the participant's preferences in order to boost their production and sales.

c. Giving back campaign - This campaign is a general campaign that is useful to expand their audience. Usually, millennials and Gen Z's are drawn to campaigns that share a good cause as they want to be part of something charitable and meaningful. Recognition for the brand is relative to the cause that they are willing to partake in such that the bigger the positive outcome of the cause, the larger the brand recognition. Consumers can resonate better with the brand easier if brands make good decisions to align their brand cause with the correct charitable partner.

For example, the [#FindingCommonGround campaign](#), held by newbelgium, a brewing company, collaborated with 6 different non-profits in a campaign that is dedicated to protecting public lands. This event raised a total of 250 thousand.

Instagram



d. Partnership with another brand - On the topic of partnership, brands can also collaborate with other brands that usually are not from the same domain. Common grounds needs to be achieved first by establishing common goals. For example, Budweiser, partnered up with Uber in 2016 to stop people from drunk driving. This type of campaign goes well with giveaways, allowing brands to experience their product collaborate for a good cause

Budweiser Campaign



To summarize, several platforms are having similar types of campaigns to promote their companies. For beer brands, we suggest the event's type of campaigns that have a social consensus for people worldwide. Intuitively, beer is a magic drink that can bring everybody together regardless of regions, colors, or background. Social media events such as Oktoberfest, beer-focused festivals, beer-drinking contests, are able to remind people about the beers. Companies can take the advantages to promote their beers as well as increasing their sales and revenue at a specific period.

Sources

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2. <https://blog.hootsuite.com/social-media-campaign-strategy/>
3. <https://www.socialmediatoday.com/news/how-to-use-social-polls-to-boost-audience-engagement-and-brand-awareness/529396/>
4. <https://blog.aspiration.marketing/15-social-media-ideas-to-try-2020>
5. <https://help.twitter.com/en/using-twitter/twitter-polls>
6. <https://powerdigitalmarketing.com/blog/types-of-social-media-campaigns/#gref>
7. <https://blog.wishpond.com/post/115675437915/social-media-marketing-for-breweries>

2. Channel Analysis

Domain Analysis - Analyze the current social media channel that the company is currently implementing as part of their marketing campaign (aside from Twitter). This maps and contributes to task 3-1 above but done on an individual brand scale.

As discussed in Section 3-1 above, social media campaigns include events, social polls, giving back campaigns, partnership with another brand, etc. Aside from Twitter, other social media channels are used by the beer brands to advertise their products and increase their popularity. When it comes to social media, the alcohol industry knows what they're doing. It turns out that the alcohol industry spends the most for advertisements compared to other industries.

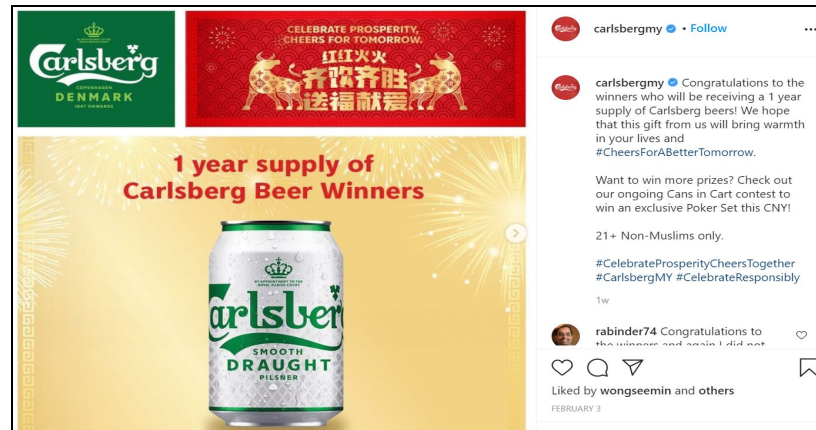


In this section, we will discuss the social media channel and the campaigns implemented by each brand which are Carlsberg Group, Budweiser, Heineken, and Corona.

Carlsberg Group

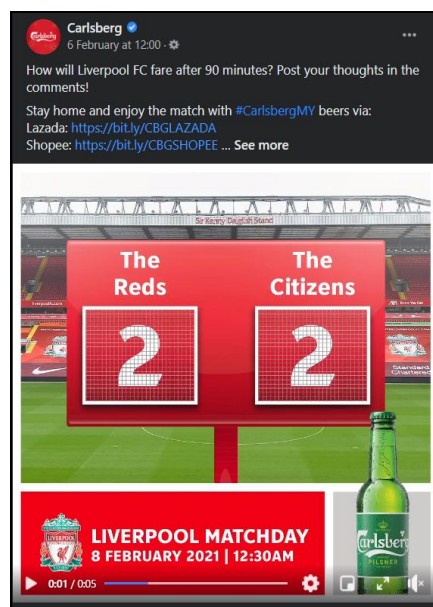
1. Giving back campaigns (Instagram)

1 year supply of free carlsberg beer given to the audience selected to appreciate the support given by them. This campaign would help to promote the brand by the awards giving out.



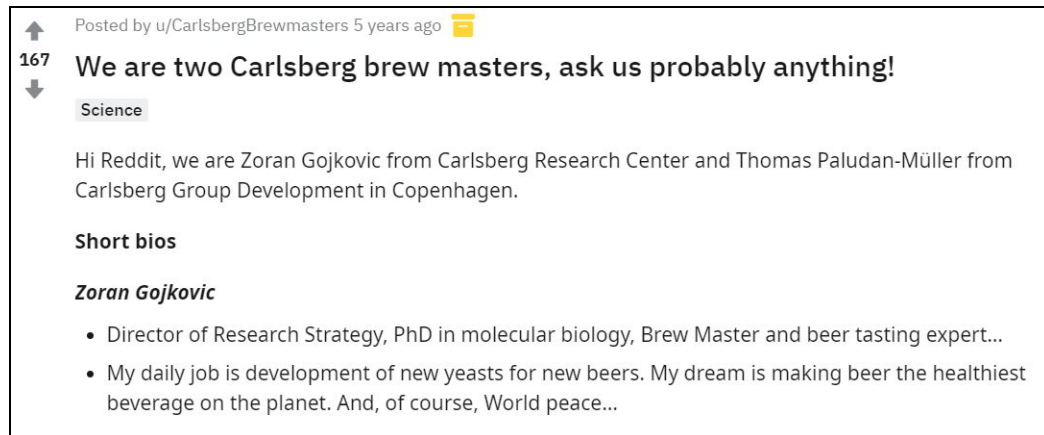
2. Polls (Facebook)

A post that asks the audience to share their thoughts on the scores of a football match. Sharing thoughts can increase the involvement of the audience in the post and make the post go viral.



3. Question and Answer Session (Reddit)

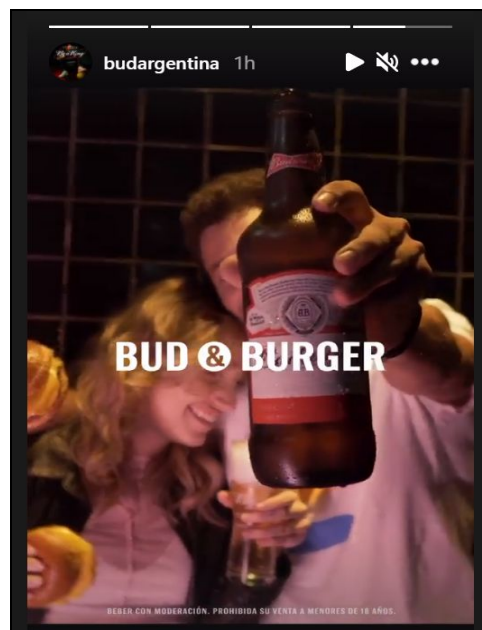
Carlsberg brewmaster sharing their experience in Carlsberg and answering the questions of the audience. The engagement of the audience with Carlsberg employees helps people to understand the brand better.



Budweiser USA

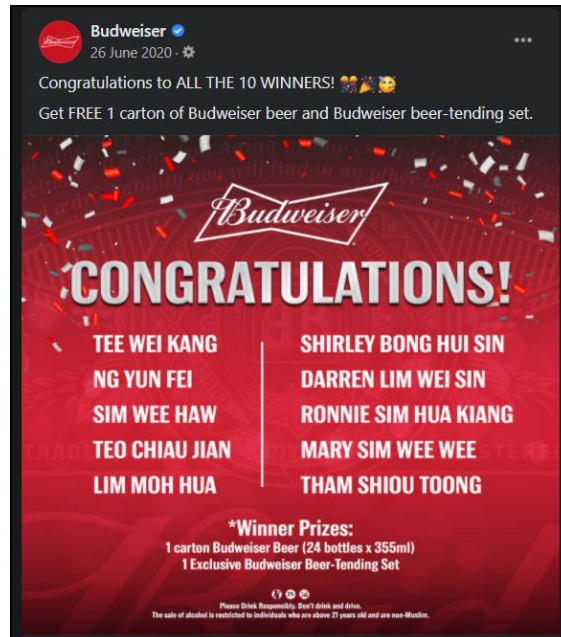
1. Event (Instagram Feed)

A valentine's day event and encouraging couples to take a Budweiser and burger. This post could engage more couples to drink their beer during valentine's day.



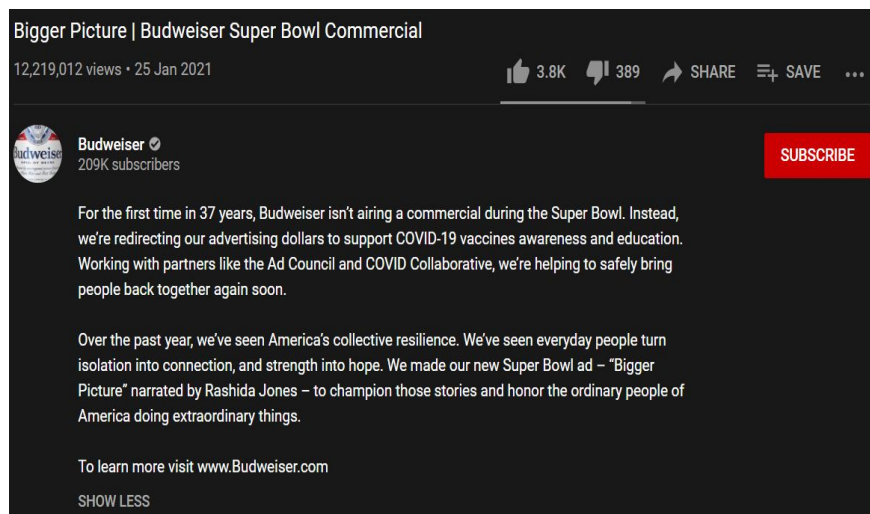
2. Giving back campaign (Facebook)

A giving back to the supporters that helps to share the page and promote the brand.



3. Partnership with other brands (Youtube)

A partnership with Ad Council and COVID collaborative to help people.



Corona

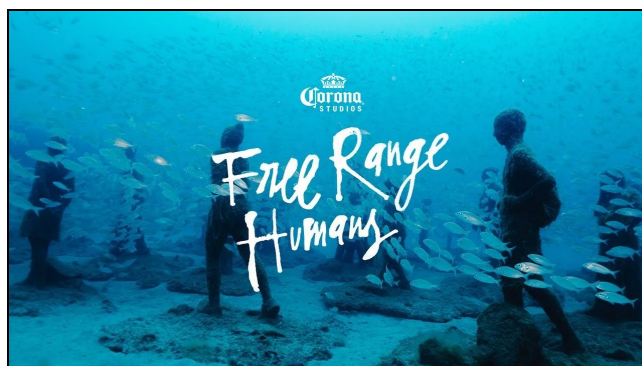
1. Corona 'Better World' Giving Back Partnership Campaign with Parley (Facebook)

Corona partnered up with Parley, an environment cleansing company focused on cleaning plastic from the ocean. In this campaign Corona accepts people's plastic waste in return for Corona beer packs, which has a limited edition packaging. This campaign allows people to be part of a bigger movement that raises awareness about the environment and the ocean's wellbeing.



2. Corona 'Free Range Humans' Campaign (Instagram, Youtube)

Corona 'Free Range' is a show dedicated to push the ethos of living life of an adventure. The studio launched a new original series which showcases 8 individuals that quitted their blue-collar jobs in pursuit of a more adventurous lifestyle. Therefore, Corona tells a story of living life to the fullest by being adventurous, letting the target audience know when to take a break and get close with nature. Viewers are able to watch the episodes on Instagram TV and Youtube.



Heineken

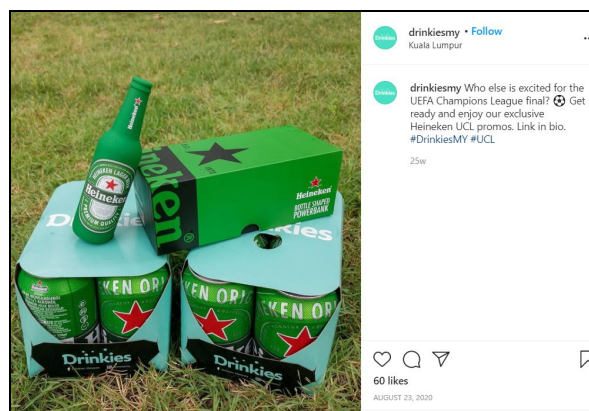
1. Heineken Mini Home Bar Contest Event (Facebook)

Heineken Mini Home Bar invites everyone to join their contest for a chance to win a mini home bar. This steps for people to join acts as a free marketing campaign as it snowballs to reach more audiences while the contestants share their events.



2. Heineken Partnership with Drinkies and UEFA Championship League (Facebook, Instagram)

During 2018 and 2019, Heineken partnered with Drinkies to run a direct-to-consumer initiative. This is a cold beer collaboration that allowed users to have their beer delivered to their doorstep within 60 minutes of ordering. In those two years, Heineken's sponsorship by UEFA league showed a significant amount of uplift in drinking sales.



Sources:

1. <https://www.socialbakers.com/blog/beer-marketing-trends-you-need-to-know-right-now>
2. <https://www.instagram.com/p/CK1CNHfhhjw/>
3. <https://www.facebook.com/CarlsbergMY/>
4. https://www.reddit.com/r/beer/comments/feqnnj/what_are_your_thoughts_on_carlsberg/
5. <https://www.instagram.com/budargentina/?hl=en>
6. <https://www.facebook.com/BudweiserMalaysia>
7. <https://www.youtube.com/watch?v=on04UnEzCt8>
8. <https://www.campaignlive.co.uk/article/corona-better-world-wieden-kennedy-amsterdam/1586716> (Corona)
9. <https://www.facebook.com/watch/?v=2063260477302589> (Corona)
10. <https://www.campaignlive.com/article/corona-beer-launches-global-content-studio-first-original-series/1700825> (Corona)
11. <https://www.instagram.com/p/CIRPrzJhme8/> (Corona)
12. <https://fb.watch/3MtwWBILc0/> (Heineken)
13. <https://www.marketingweek.com/heineken-reach-new-consumers-digital/> (Heineken)
14. https://www.instagram.com/p/CEOU05CpnZG/?utm_source=ig_web_copy_link (Heineken)

3. Metrics

Assignment 1: Determine five (5) metrics to monitor across all the brands – these MUST NOT be metrics that consist of the attributes returned by Twitter (eg. follower_count) and MUST NOT be metrics that are disallowed (e.g. gender of followers). Examples will be shown in lectures/tutorials.

Assignment 2: Determine at least three centrality measures from each platform and compare/discuss the results obtained between the brands

- a. **Customer Sentiment Analysis** - A process of analyzing the text's data and categorizing them into different sentiments such as Positive, Negative, Neutral. With this, the brewery companies will be able to understand the sentiment towards their contents and could propose a strategy quickly for any purpose. For example, sometimes a company will ignore the negative feedback as this will bring the company more traffic flows and negative feedback usually will resolve in time. Moreover, a company can look into details to find out a reason why the sentiment is like that at that time. We can rank the companies by the customer sentiments, such as the percentage of customers that has positive sentiment.
- b. **Potential Reach** - Measures the number of people who could, realistically, see a post during a reporting period. Understanding this metric is important because, as a social marketer, you should always be working to expand your audience. Knowing your potential reach enables you to gauge your progress.

$$\text{Total Number of Mentions} \times \text{Followers of Account That Mentioned You} = \text{Theoretical Reach}$$

- c. **Amplification Rate** - Ratio of shares per post to the number of overall followers. The concept is by computing the rates at which your followers take your content and share it through their networks. Basically, the higher your amplification rate, the more willing your followers are to associate themselves with your brand.

$$\frac{\text{Total Post Shares}}{\text{Total Followers}} \times 100 = \text{Amplification Rate Percentage}$$

- d. **Trustworthiness** - Measure the popularity of the brand among influencers by the total number of verified accounts. Verification is how you prove that your Twitter account is the authentic presence of a notable public figure, celebrity, or global brand. Normally the more verified accounts indicate that the brand is more trustworthy.
- e. **Average follower count of followers:** - The main purpose of this metric is to evaluate the legitimate accounts that follow a certain brand. Knowing the value of this metric will also give a general idea of the potential a post/campaign to go viral, how many people can it reach. If a

follower shares a post, it will also reach their followers, therefore having more potential to grow a message or campaign.

- f. **Responsiveness Rate:** - This is to measure how active the brand is through the response time taken and the response count. For this metric, the shorter the time taken to reply to a tweet the better. Users usually will gain faith and satisfaction if the brand replies to them in a timely manner.
- g. **Degree Centrality:** This measurement tells us how important the particular node is. It assigns each node the important score based on the number of connections that the node has. A high degree centrality node usually represents the person/page/brand is a popular individual or an influencer in the media channel. With such, the brands can perform some strategies with the important nodes to promote their products and reach more people.
- h. **Eigenvector Centrality:** It measures the influence of a node. The measurement works by computing the important score of a node based on the importance of connected nodes. For example, node A and node B both have the same degree value, but the former has a higher eigenvector score than the latter, which means that the nodes connected to node A are more likely important than the nodes connected to node B. Thus, eigenvector centrality allows the brands to identify who or what has wider influence in the network.
- i. **Betweenness Centrality:** The measurement takes into account the frequency of a node lying on a shortest path between a pair of nodes. The nodes with high betweenness centrality are vital in the communication or information flow of the network. The important nodes have more control by having such a strategic position and able to influence the whole group through coloring the information transmitted.

Sources

1. <https://sproutsocial.com/insights/twitter-metrics/>
2. <https://brand24.com/blog/twitter-metrics/>
3. <https://blog.hootsuite.com/social-media-metrics/>
4. <https://fowmedia.com/follower-counts-matter/>
5. <https://towardsdatascience.com/graph-analytics-introduction-and-concepts-of-centrality-8f5543b55de3>

4. Methodology

a. Data collection

Before starting the data collection, we have discussed the way to extract the data such as the date range, the data that needed to be stored, the column name and the format to save the data. To collect the data that is relevant with the date range, we have extracted the data for 2 weeks (2021-01-29 to 2021-01-11) to provide sufficient data and avoid rate limit issues. Note that the data for responsiveness rate is one day late for both start date and end date due to technical problems. We extracted relevant data that we thought might be useful and stored the data into .csv format files (comma separated value). When extracting the followers info of the brands, we have set a condition to extract 10% followers only for fairer comparison and to avoid rate limit issues. For the responsiveness rate data, we have also set up a limit as 3 attempts to extract the data for each brand to prevent rate limit problems.

b. Data Cleaning/ Data Pre-processing

For the metrics that relate to date time, we have built a function to fill in the date data and the other values as 0 when the data does not contain the date of the day. Besides, we have dropped the unneeded columns during the process and renamed the column names for better understanding. To get the metric, we did some aggregation such as summation, mean and count as well. Moreover, dataframe joining and filling null values are also needed for the pre-processing. When it comes to the sentiment analysis, we dropped the rows that are retweets as we think it is not appropriate for the metric. We also built few functions to clean up the tweets content and get the polarity to acquire the sentiment type.

c. Consolidation

Since we have some mis-understanding about the data processing, we were actually doing it together in one google collab file (.ipynb). As we have extracted all the data for standard names, we can easily concatenate the data together from each brand for the data cleaning and data pre-processing. To have fair comparison, we have done some normalization. For the trustworthiness metric, what we did is that we extracted only 10% followers for each brand. For the followers' count of users that follow the brand, we have normalized them into the average follower's count of a single user due to every brand having different followers count. As in sentiment analysis, we scale the y-axis into percentage based since the number of mentions of each brand is different.

d. Network Data Collection and Process To Obtain Nodes/Edges List

During the data collection stage, we first retrieved the details of friends and followers of each brand. After that, we loop through the friends and followers for each friend of the brand to find out whether there is an edge linking the friend and follower of the brand. While performing the extraction, we limited the number of data to be retrieved as 1000 only because some brands have large amounts of followers and friends. The users who set their profile private are skipped as we are not able to extract the details of their followers and friends. After carrying out the extraction, the data is stored into csv files for each brand. As Corona and Carlsberg Group have more friends and google collaboration has limitations on the duration, we have splitted the extraction into 3 times to complete the task. Next, we added the

brands themselves into the node list and added the edges between brand and friends/followers into the edge list as well. This is to provide a more complete network for the brands.

5. Dashboard

Please take note that we have our dashboard separated for assignment 1 and assignment 2.

Path for assignment 1: Assignment_1/Dashboard_SMC_Assignment1.ipynb

Path for assignment 2: Assignment_1/Dashboard_SMC_Assignment2.ipynb

A. Dashboard and graphs explanations

a. Potential Reach

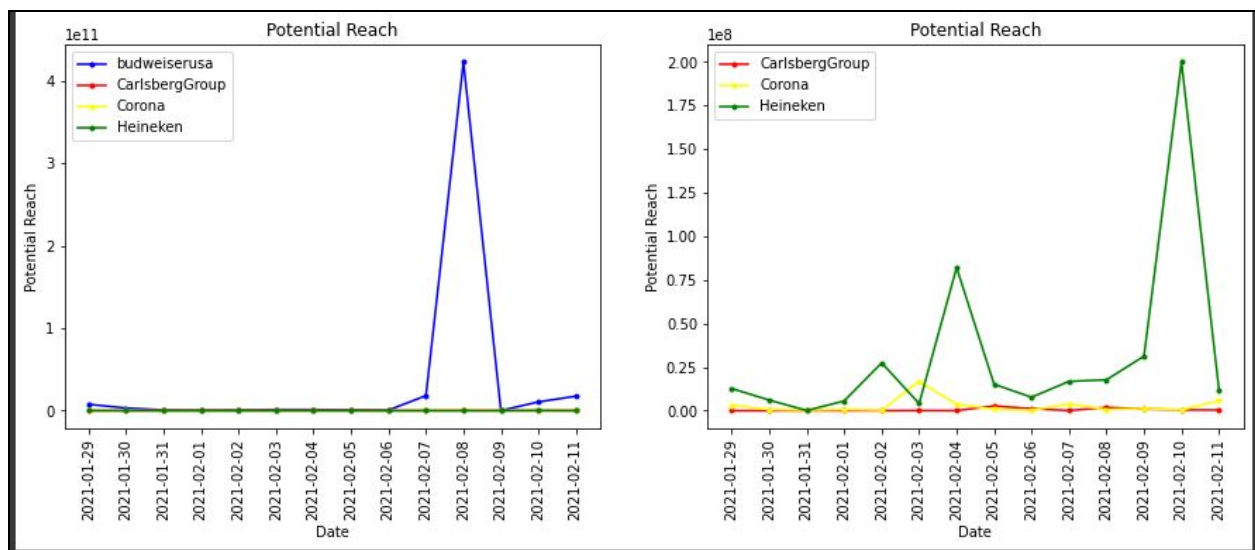


Figure 1

In this metric, we are doing a line chart to display the potential reach for 2 weeks and we separate it into 2 graphs because the values are too different to show all the brands. The left one contains all the brands while the right one has taken out the Budweiser USA so the other brands can be compared. Please note that the scale at the y-axis of two graphs are different.

From the chart above, we can see that Budweiser USA outperformed the other brands in the metric during the period 2021-02-07 to 2021-02-09. The right chart has indicated that the Heineken has higher potential reach than Corona and Carlsberg Group over the time, while the Corona and Carlsberg Group has similar values. By looking into the data, we believe one reason is that there were more mentions of Budweiser USA and Heineken at the period. This can possibly due to the fact that these two brands have more followers than the other brands. Besides, we think that Budweiser USA has the spike because of some collaboration events with partners that are allowing users to win a prize, while Heineken was more likely due to getting tagged in a tweet by a famous tweeter. However, we find out that among the mentions of Budweiser USA during the spike, quite a number are just a retweet.

b. Amplification Rate

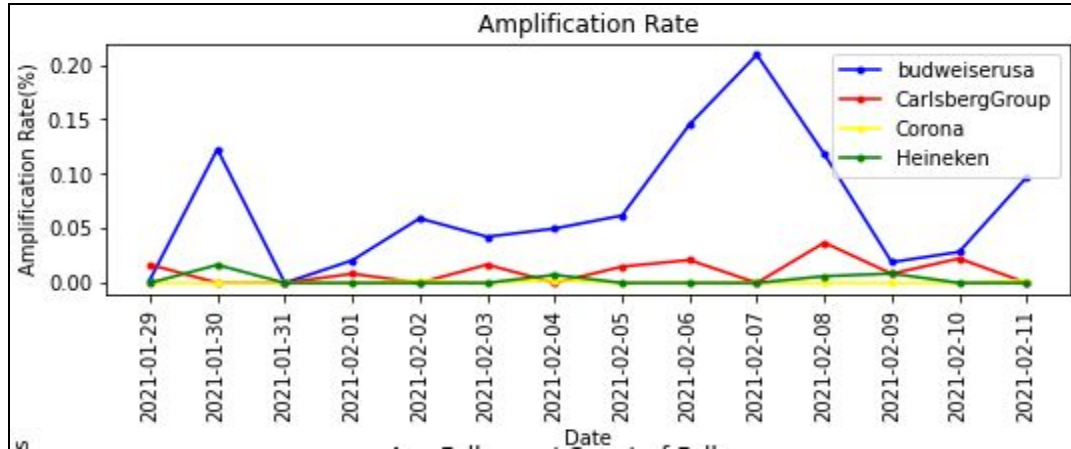


Figure 2

From the chart above, it can be seen that Budweiser USA has the highest amplification rate over the time period. One reason for this could be due to the higher number of followers of the brand and hence leading to the increase in retweets count. Moreover, the spike between 2021-02-05 to 2021-02-09 can be potentially from the cause of the collaboration events we mentioned earlier. The other brands did not even have any activity for some of the days.

c. Trustworthiness of 10% of follower

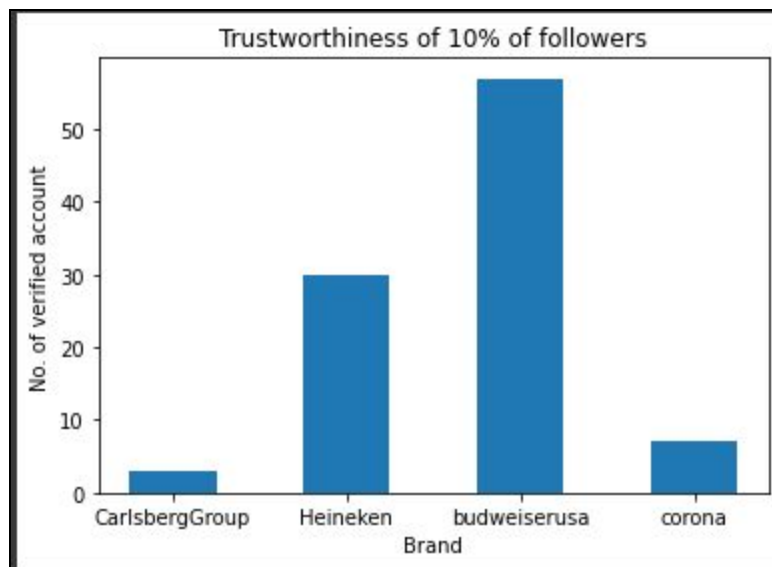


Figure 3

At this metric, we only took 10% followers of the brands to decrease the bias caused by the difference in followers count. The graph has shown that Budweiser USA has the most number of verified followers while Carlsberg Group has the least. Based on our finding, we think that the number of followers extracted can be one of the causes.

d. Average Followers's Count of Followers

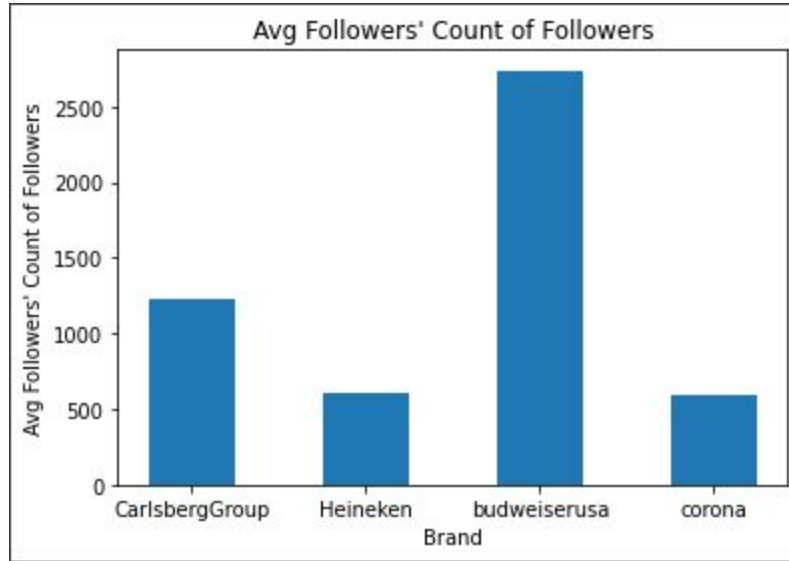


Figure 4

We do this metric using 10% of the brands' followers since we are limited by the data extraction rate limit. Budweiser USA still has the highest value here and one interesting finding is that Carlsberg Group has the least followers but results in second high value in the average followers' count of followers. Furthermore, Heineken and Corona have similar values even though the former has its follower count 4 times more than the latter. In this case, we think that some followers of Carlsberg Group and Corona have higher followers count than the others, which possibly lead to the phenomenon above.

e. Responsiveness Rate

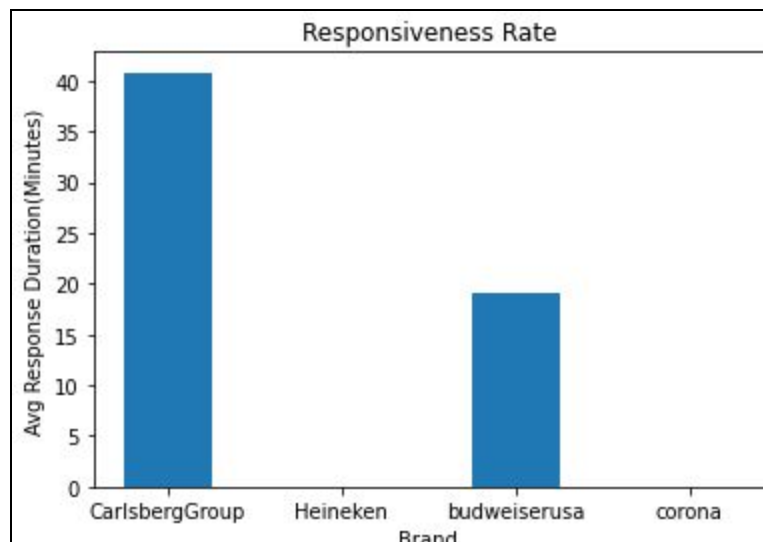


Figure 5

We were doing this metric based on the data collected from 2021-01-30 to 2021-02-13. The graph above indicates that Carlsberg Group took longer time to respond while Budweiser USA took less time for that. Besides, an unexpected result is that Heineken and Corona both have no response during the period of time. By looking at the potential reach, we can actually find that there were mentions of 4 brands during the period of time, thus we can determine that Heineken and Corona did not make any response to those tweets. Moreover, Budweiser USA page is considered much more active than Carlsberg Group because the former responded a lot and quickly, while the latter took longer to reply to only one tweet.

f. Sentiment Analysis

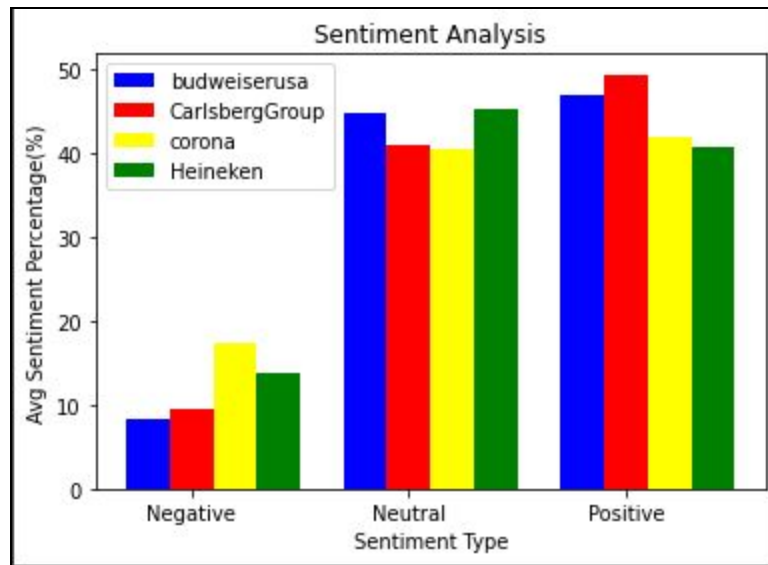


Figure 6

For this metric, we have averaged the results from 3 sentiment methods including TextBlob, Vader and Afinn. As shown in the graph above, the sentiment type - Negative is the lowest for all the brands. However, Corona and Heineken acquired the negative sentiment above 10%, while the other two below that. According to our knowledge, we think the negative tweets could come from the tweeters that feel unpleasant about the Heineken layoff. Besides, some of the negative tweets of Corona were actually complaining about the Coronavirus-2019 which is called Corona in short and the other tweets were some unpleasant expressions from users.

g. Network Graph

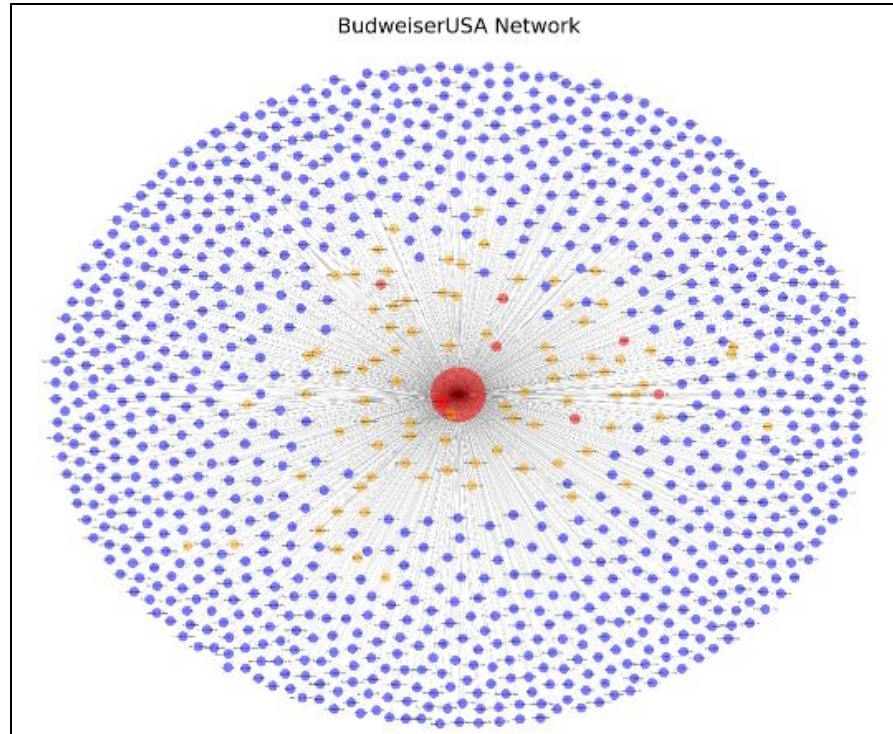


Figure 7. Budweiser Network Graph (Overview)

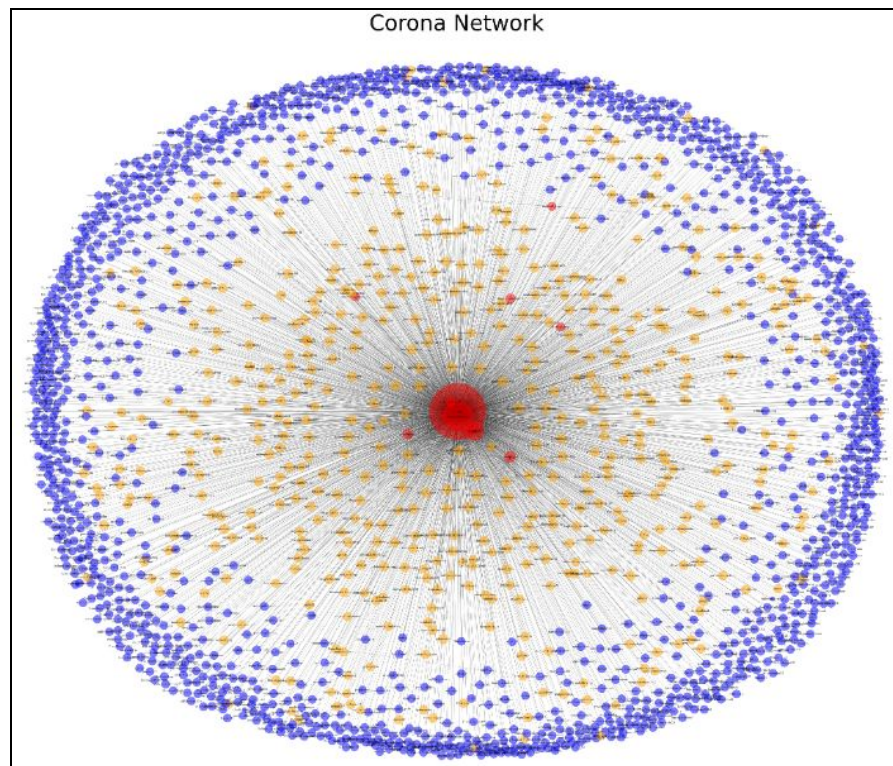


Figure 8. Corona Network Graph (Overview)

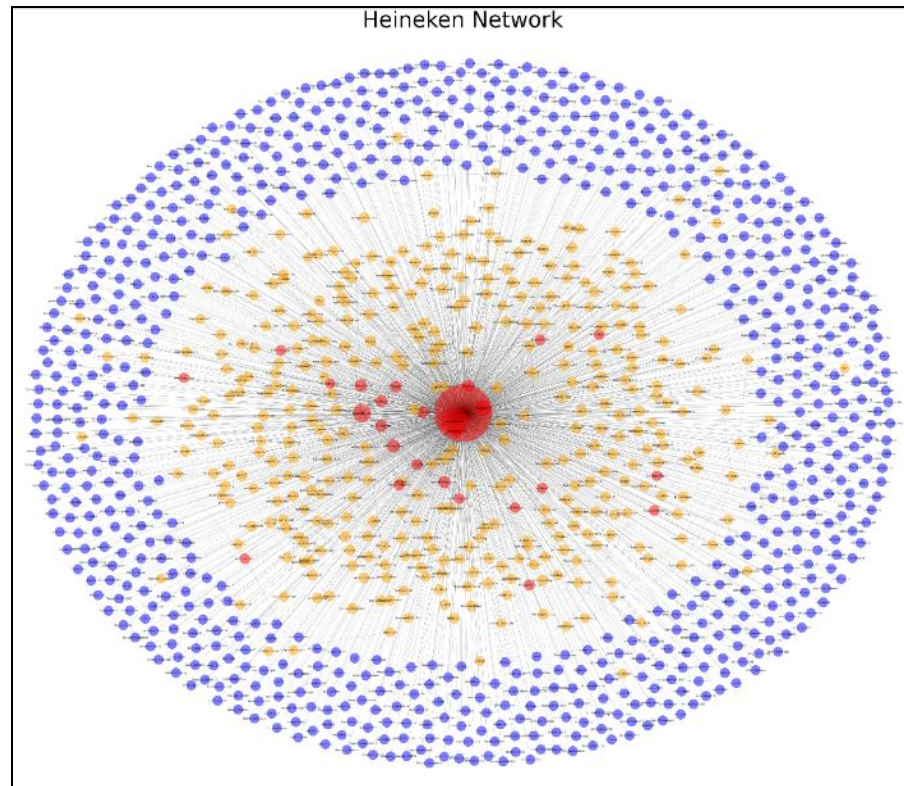


Figure 9. Heineken Network Graph (Overview)

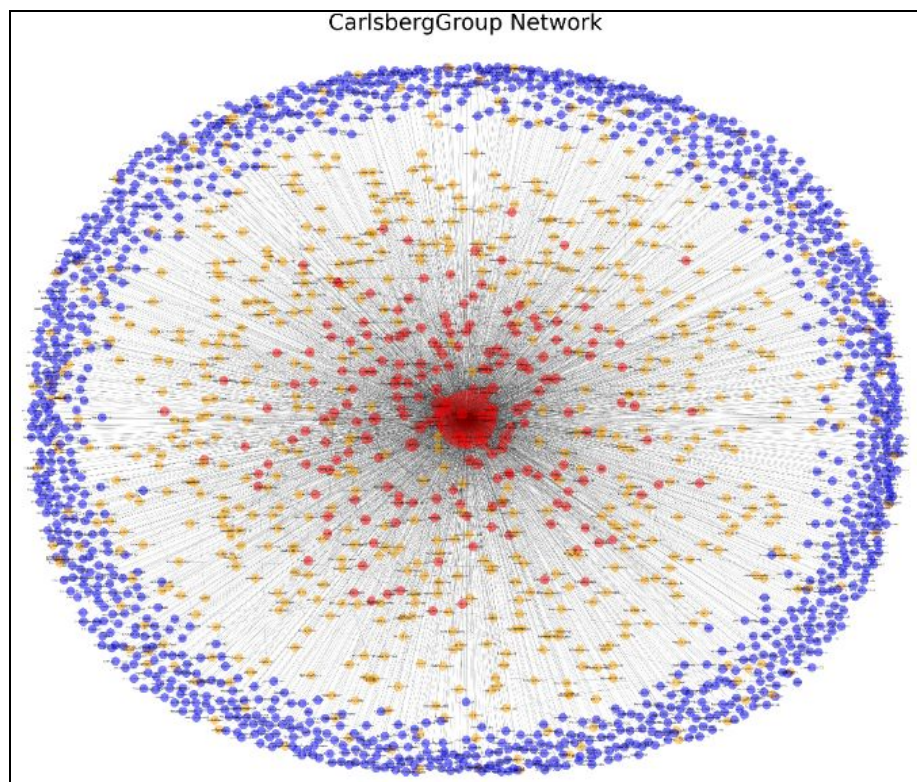


Figure 10. Carlsberg Group Network Graph (Overview)

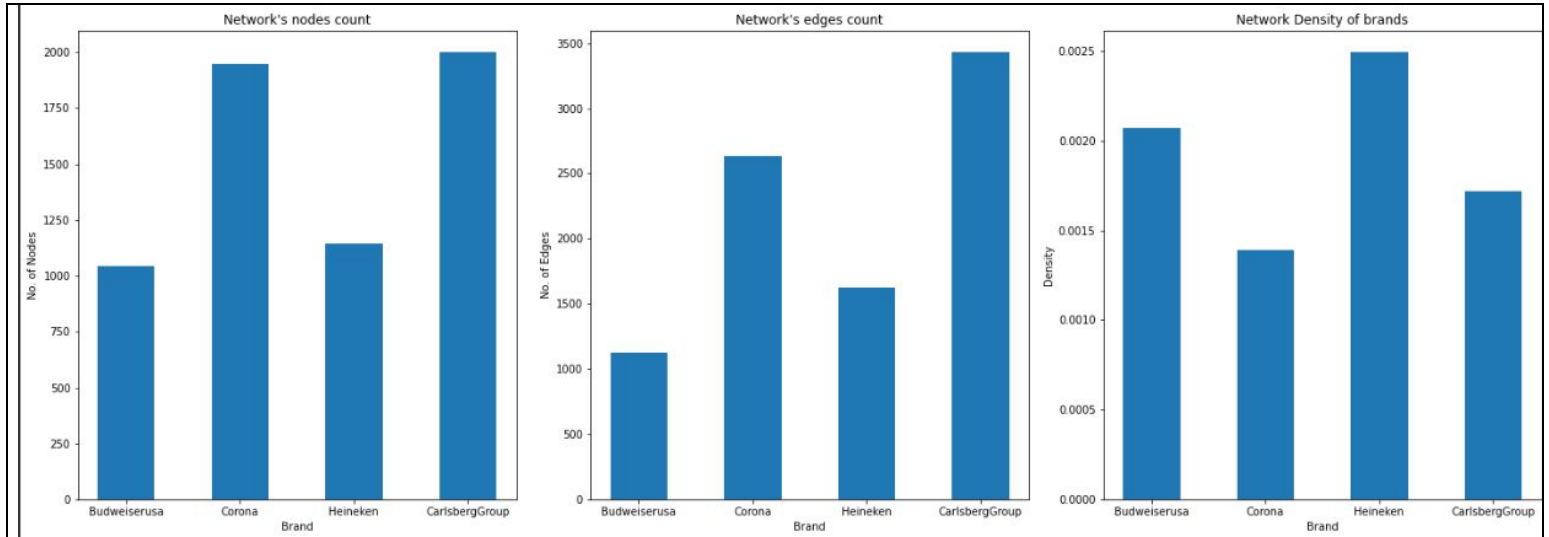


Figure 11. Statistic of networks of brands

Left: Network's Node Count, Middle: Network's Edges Count, Right: Network Density of Brands

The graphs above (Figure 7 - 10) are showing the overview of the network of each brand. The node color is based on the degree of node, which we put orange for the nodes that have degree 2-4 and red for the nodes that have degree more than or equal to 5. Blue nodes tell us that they have their degree under 2. Besides, the eigenvector centrality has been utilized for the node size.

The bar charts in Figure 11 are indicating the number of nodes, number of edges and the density of each brand's network. These numbers tell us a brief idea of these networks, where we can see Budweiser USA and Heineken have their nodes position more diffused than the other two as they have fewer nodes and edges. Density allows us to understand how well the nodes are connected within a network by calculating the real connections count over the potential connections count. High density network is more efficient than a low density network in information transmission as one node is connected to many nodes. We can find that Budweiser and Heineken have higher network density although their nodes count and edges count are lower than the other two brands. This means that they can reach the whole network more efficiently and the network will not disrupt easily while some nodes are absent.

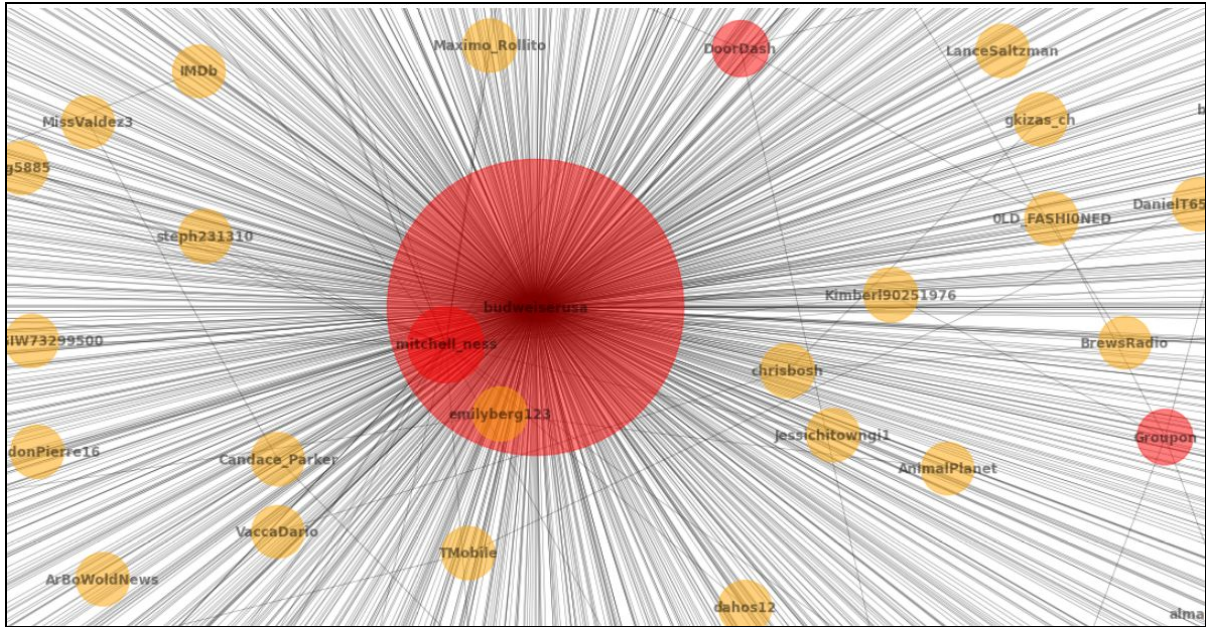


Figure 12. Budweiser Network Graph (Zoomed)

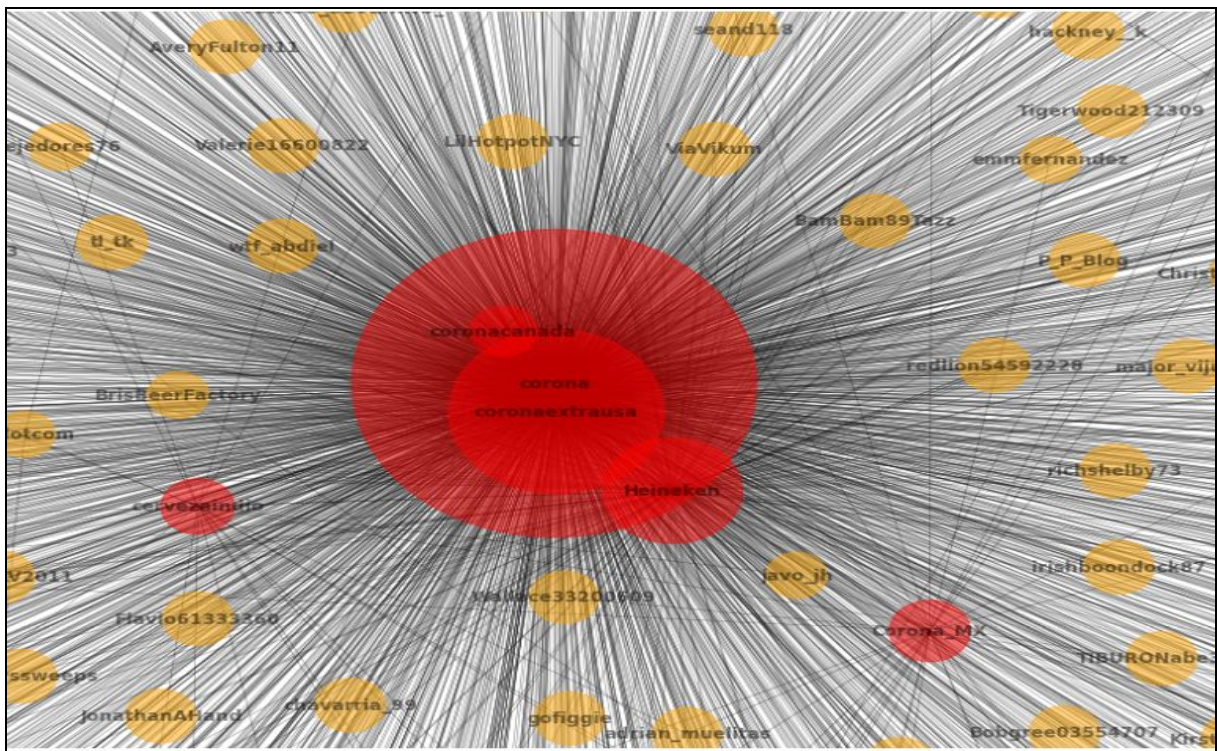


Figure 13. Corona Network Graph (Zoomed)

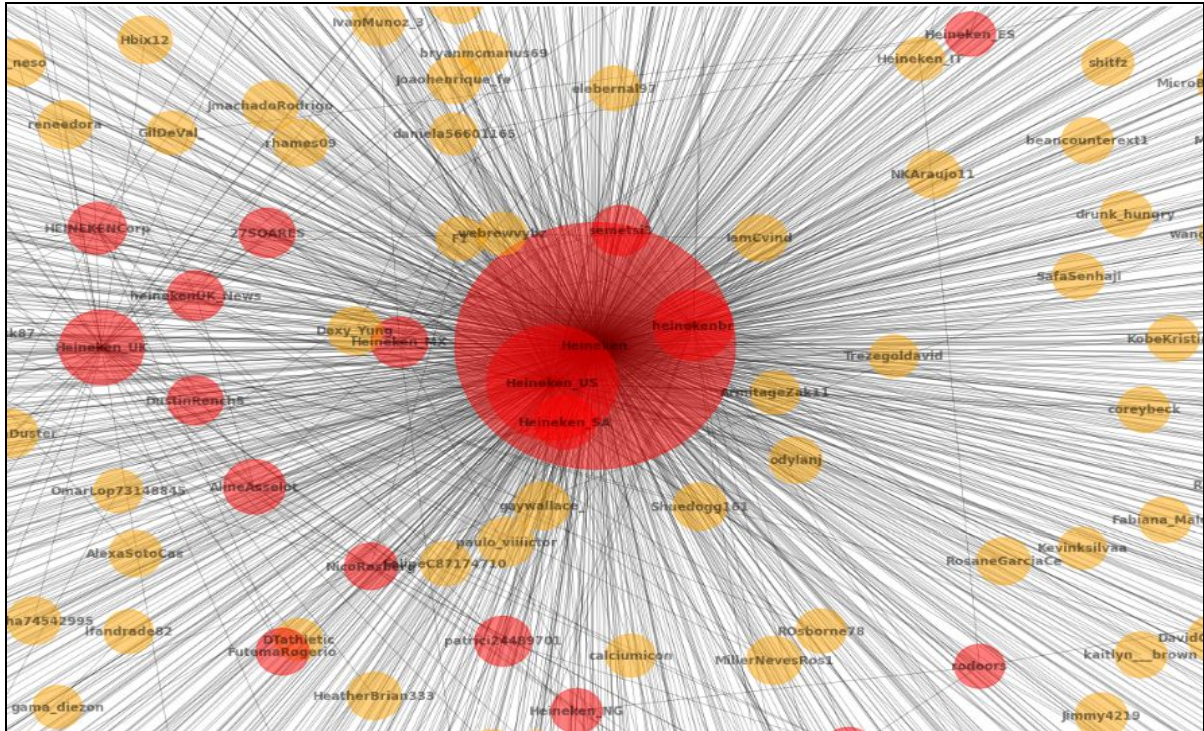


Figure 14. HeinekenNetwork Graph (Zoomed)

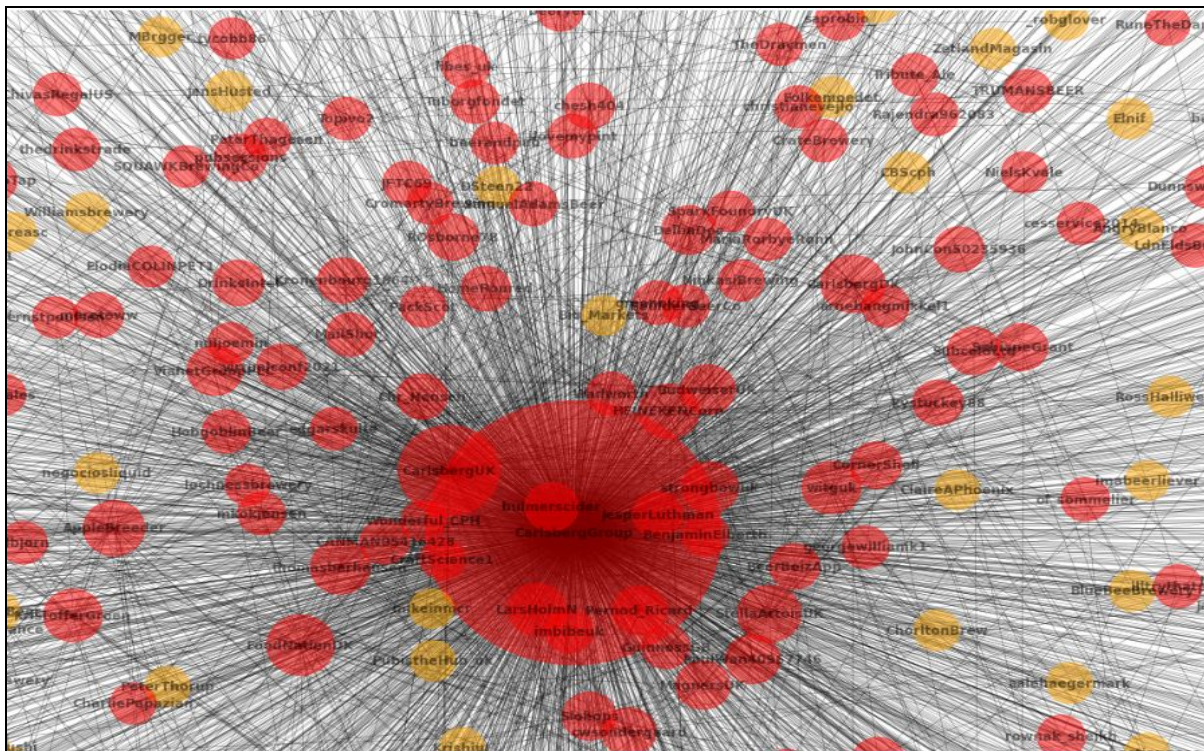


Figure 15. Carlsberg Group Network Graph (Zoomed)

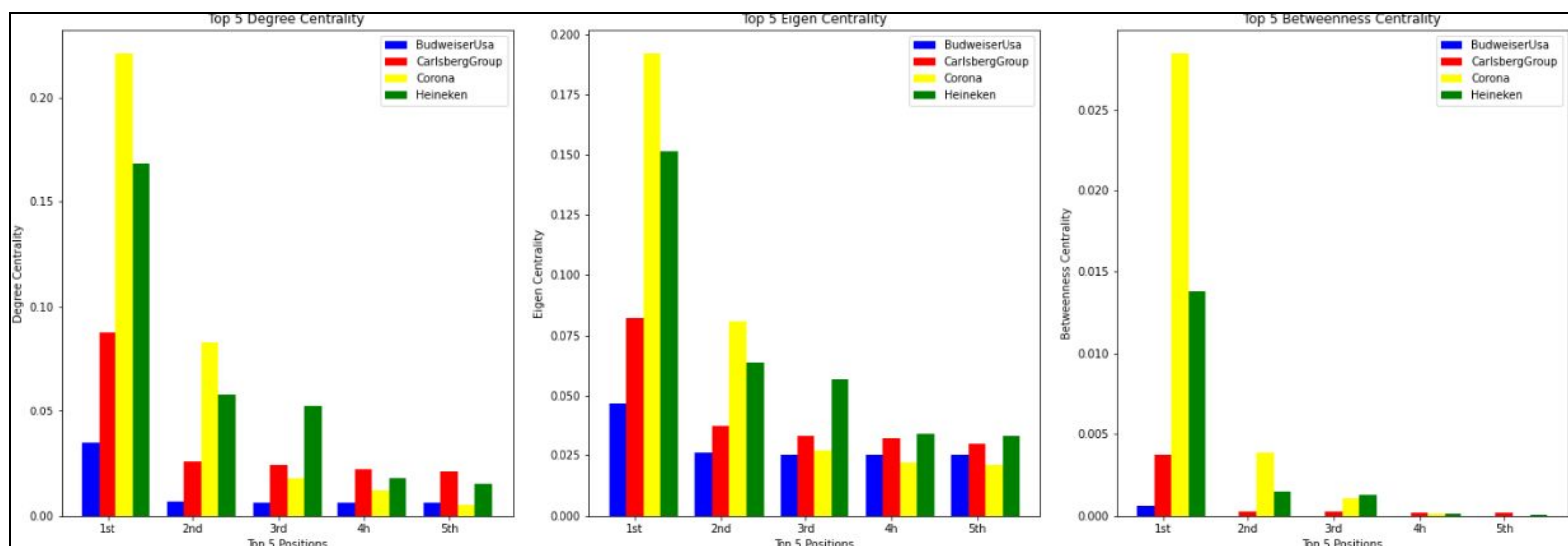


Figure 16. Top 5 nodes score from centrality measures of each brand' network
Left: Degree Centrality, Middle: Eigenvector centrality, Right: Betweenness Centrality

Figure 12 to 15 are the zoomed version of network graphs, which we will use for explanation later. Figure 16 shows the top 5 centrality score of nodes for three different centrality measurements. By looking at the degree centrality, it can be seen that Corona achieved the highest for the first two positions while the following nodes' scores are slightly lower than some other brands. Budweiser USA has the least for its top 5 scores among the brands, while Carlsberg Group and Heineken have higher scores. From this, we can know that Corona has two important nodes that are well connected to a lot of other nodes in its network. Budweiser USA seems to have one node outperforms the other nodes in its network and the node could possibly be the mitchell_ness based on Figure 12.

The eigenvector centrality graph is having a similar pattern to the degree centrality graph, where Corona is still located at the top and Budweiser USA is the lowest. However, the top 5 nodes of Budweiser USA in this measurement are having less difference compared to the degree centrality. From the eigenvector centrality graph, we can find the 5 nodes are connected to some important nodes in their own network, especially the top node that has shown its ascendancy. From Figure 12-15, we can see that the nodes like mitchell_ness, coronaextrausa, Heineken_US and Carlsberg_UK have the influence in the network of Budweiser USA, Corona, Heineken and Carlsberg Group respectively.

Betweenness centrality tells us how many times a node has lied between a pair of nodes as a shortest path. In this measurement, Corona still managed to beat the other brands, while Budweiser USA has the poorest performance which we only can find 1 node based on the betweenness centrality graph. An interesting finding is that only the top 2 nodes are having more control in the networks as they act as a bridge between many pairs of nodes.

B. Determine which brand amongst your selected ones succeeds

From the charts, we are able to see Budweiser USA has managed to increase its potential reach that made it outperformed the others through some collaboration events with other brands. Despite there being a big difference in the followers count among the brands, they were having similar potential reach in regular time, but the other three did not organize some social media campaigns like Budweiser USA did to increase the exposure and attract the users.

The average followers' count of followers allows us to drive in the analysis from a different perspective to inspect an analogous objective. This metric is similar but different from the potential reach as it is not limited by the mention and time, it measures the theoretical reach by the average followers of the users that follow the brand instead. While Budweiser USA is still at the top in this metric, Carlsberg Group is worth to mention as it comes with second higher value while having the least followers among the brands. Hence, we consider Budweiser USA and Carlsberg Group both achieve an excellent result in this metric.

By looking at the amplification rate, almost all the brands have similar rates except the Budweiser USA who managed to increase the rate over the time period. As we discussed earlier, the social campaign has helped Budweiser USA to gain a lot of interactions between the page and its followers. This metric has shown that users are more willing to associate with Budweiser USA.

Moreover, the trustworthiness metric can tell us that users are more likely to have faith in Budweiser USA. This is because the brand has the most verified followers which possibly are notable public figures, celebrities, or global brands.

Besides, we do not only want to measure the brands' performance from a passive angle, but also from an active perspective. Hence, we have measured the responsiveness of each brand. Budweiser USA still performed well at this metric by having the shortest responsiveness time and it made a lot of responses to the users' tweets. Unlike the Budweiser USA, the other brands were not active at replying to the users even there were quite a number of mentions of the brands.

Furthermore, we have performed the sentiment analysis on the brands using the users' mentions of them. As indicated in the graph, Carlsberg Group and Budweiser USA achieved good results in both positive and negative sentiment type as they acquired more positive comments and lesser negative comments than the other two brands.

With the degree centrality and eigenvector centrality, we would suggest that Corona outperformed the other brands. One reason is that it has some nodes that are well connected to many other nodes in the network, allowing it to spread the information more effectively through those nodes. The eigenvector centrality also justifies that some nodes have connections with important nodes, which has further increased the influence of the nodes. In contrast, Budweiser USA is considered to have the poorest performance here as its nodes do not have as many connections as other brands do and the influence of the nodes are weaker as well. From the betweenness centrality, we can still find that Corona achieved the best, while Budweiser USA is the worst. This is because the former is able to control the

information flow by cooperating with the important nodes and the latter does not have such control ability as its nodes are not located at the strategic positions.

In conclusion, we have considered the Budweiser USA is the most successful brand in the social media channel among the brands. Although the brand is showing poor performance based on the centrality measurements, it outperformed the other brands in the other measurements. Another critical reason is that it is useless to have a good network if the brand is not active as no worthy information can be spread out. Budweiser USA is being more active in the social media channel and able to reach more people through some events, while the other brands did not do that.