**Final presentation:**

Good morning everyone and thank you for joining us today.

Budweiser and InBev Company:

- As data scientists, we are very excited to help decide on the type of beer that will compete with

the booming microbrewery growth.

- This will lead into our recommendations for new beer releases by regional market in the US.

Contributors:

- I can define myself as a data cruncher and hype crew.

- My partner, Jaclyn Coate in this project, she’s an architect and a visualisation lover.

Brewery Geo Distribution:

- As we can see, there is a large distribution of breweries across US.

California, Colorado, Michigan, and Oregon are all some of the leaders in the US.

Median ABV by State:

- There is not a large range in gradient color for median ABV when comparing state to state.

State with highest ABV:

- The state with the highest ABV is Colorado.

ABV Summary Statistics: (boxplot)

- Median ABV distribution is small.

- ABV of 75% of beers produced are between 5.5% - 5.8%, slightly higher than Budweiser at 4.2%.

- We will be recommending new Budweiser releases by region and of a different ABV than

what Budweiser is used to.

Median IBU by State: (geo map)

- The median IBU varies greatly between states.

- Unlike ABV, IBU has a lot of possibilities for the new release beers for Budweiser.

State with highest IBU:

- The state with the highest IBU is Oregon at 138

IBU Summary Statistics: (boxplot)

- The standard IBU of Budweiser is 7.

- Median IBU level is around 30-43 (75%) and are higher than the IBU of Budweiser.

- For this reason, we recommend that new Budweiser release beers will be higher in IBU than the traditional products.

ABV and IBU Correlation:

- There is a relationship between IBU and ABV.

- Based on this scatter plot and correlation line, we can see a positive linear relationship.

- In general, we can confirm that when the ABV of a beer rises so will its IBU.

Beer Styles by Regions:

- We will complete a full analysis of median IBU, average ABV, and popular style by region ( South, Midwest, West, Northeast). We will then have a list of new beer releases by style and a range of IBU and ABVs that should be targeted moving forward by Budweiser in order to compete in the microbrewery market.

Region Style Summary:

- There are very common trend among styles by region and only 6 different beer style favorites between all 4 regions

Top 6 Beer Styles in the US: on slide

Median ABV & IBU by Region:

- Average ABV levels are similar between Regions

- Median IBU levels are different between Regions

* Predict Model – K Nearest Neighbors Model:
* - We performed a full KNN analysis on our data. We have identified, classified, and imputed the missing data in order to keep from losing over half of our data set after our full join. This has allowed us to have more confidence in our model.
* - We are able to have 77% confidence we can classify competitors’ beers on the market based on their IBU and ABV characteristics.
* - We would have liked to see above 85% and since we are only seeing 77% we will continue our investigation with the omitted missing value data instead of incorporating into our final data for drawing our conclusions.

Final Recommendation & Summary:

- There are 6 most common Styles. There were not large differences in the most popular styles in the US today.

-ABV & IBU Ranges:

ABV: 5.8 - 6.0%

IBU: 20 – 40

Here are the recommended ranges of ABV and IBU for the special release beers.

In Closing:

- Breweries are releasing a higher ABV than the standard Budweiser brand. We recommend new beer releases between 5.8%-6.0% ABV.

- IBU is quite higher than the traditional Budweiser brands.

We recommend a new IBU on the lower side of the range, to prevent alienating any of our traditional customers and still allow these new release beers for everyone. Moving forward we advise that Budweiser offer new releases styles with IBUs that range between 20-40 IBU.

Thank You:

Thank you for taking the time to meet with us today. I hope you enjoying our analysis and our recommendation for new beer release.