Hopsy
New Market Entry Analysis & Strategy

Q1' 19

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HOPSY.

"Our mission is to make the bar scene a little better."

Sebastian Tron
Founder & CEO

HOPSY. Provider of an online and retail platform intended to offer local craft beer. The company's online and retail platform specializes in featuring local craft breweries and delivering draft beer directly to the doorstep, enabling consumers to avail draught beer at much cheaper rates than the market.

Year Founded: 2015
Headquarters: Albany NY, CA
Industry Sector: US Beer, Breweries

Annual Revenue: $4MM USD (est.)
Funding Raised: $1.1MM USD
Partnerships (#): 50+ Breweries

THE SUB HOME TAP
Our compact home draft appliance. No maintenance needed, just plug and pour. Fits on any countertop. 2 year limited warranty.

MINI-KEGS
Each mini-keg contains 67oz of beer – approx. 6 servings– carefully selected from award-winning breweries.

HOPSY GLASSES
Enjoy 16oz limited-edition Hopsy beer glasses, made in the USA by premium glass manufacturer Libbey.

HOPSY.

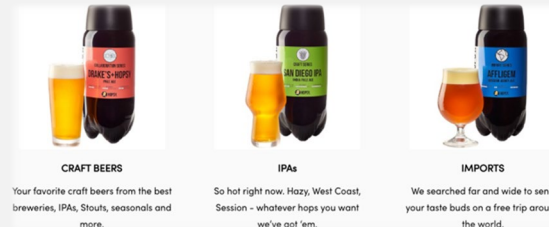**R Mustang Consulting**

Purpose:

Hopsy works with the best local breweries to source craft beers for their online catalog. It is exploring the craft beer market in preparation for growth stage activities:

❖ Expanding their Market Penetration Strategy to targeted areas in order to sign up new Craft Brewers for their source-to-consumer model.

❖ Exploring cross-state distribution opportunities. This would entail selling from their existing stable of supplier beers, to new states where there is high opportunity for Craft beer consumption.

Request:

❖ Analyze the U.S. Craft Beer and Brewery Market data and provide insights on product and market dynamics.

❖ Recommend target geographies which can align to their 2020 Market Sourcing Strategy for existing product offerings, as well as potential cross-state distribution opportunities.

❖ Recommend a data driven targeting strategy and framework to evaluate these questions for future growth stage activities.

CRAFT BEERS	IPAs	IMPORTS
Your favorite craft beers from the best breweries, IPAs, Stouts, seasonals and more.	So hot right now. Hazy, West Coast, Session – whatever hops you want we've got 'em.	We searched far and wide to send your taste buds on a free trip around the world.

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Craft Brew Situational Analysis

Situation

- Hopsy has decided to invest heavily in market penetration for 2019. To ensure proper focus and ROI, Hopsy needs clear target states in order to begin outlining Strategic Planning

- Hopsy has asked R Mustangs to take their existing data and help frame the problem, make recommendations, and create a repeatable process to help guide their strategy for the future

Complications

- State and local preferences greatly effect the breweries per capita by State

- The Craft Beer market is dominated by local distribution channels

- Market Participants plan to "own the customer" through local relationships – Hopsy must overcome this resistance

- Difficulties exist in balancing profit margins and enhanced user experience for Hopsy's online multi-brand beer model.

Critical Questions

- What are the top the five states Hopsy can target for the execution of its 2020 Market strategy to scale, sell, and deliver?

- What segmentation strategy would best optimize a "whitespace" market push for these States?

- What intelligence can be discerned from available data to understand the market?

- What framework can we utilize for making market-focus decisions for the future?

* https://www.craftbeer.com/editors-picks/craft-beer-growth-statistics-for-2017-released-by-the-brewers-association

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Market Overview

- From 2013 to 2018, the US Brewery and craft beer industry experienced moderate volatility as changing consumer preferences shift away from light beer in favor of high-quality premium beer products, driving growth across the Craft Beer segment.

- Dollar sales of beer, craft beer, and cider are estimated to reach $112 billion in 2018, for a gain of 1.1% over 2017 totals. Following years of more substantial gains, the category will level, with small year-over-year gains through 2023. Volume sales are declining at a higher rate, but larger revenue drops are not expected due to the continued growth of higher price point segments, including craft and imported beer.[1]
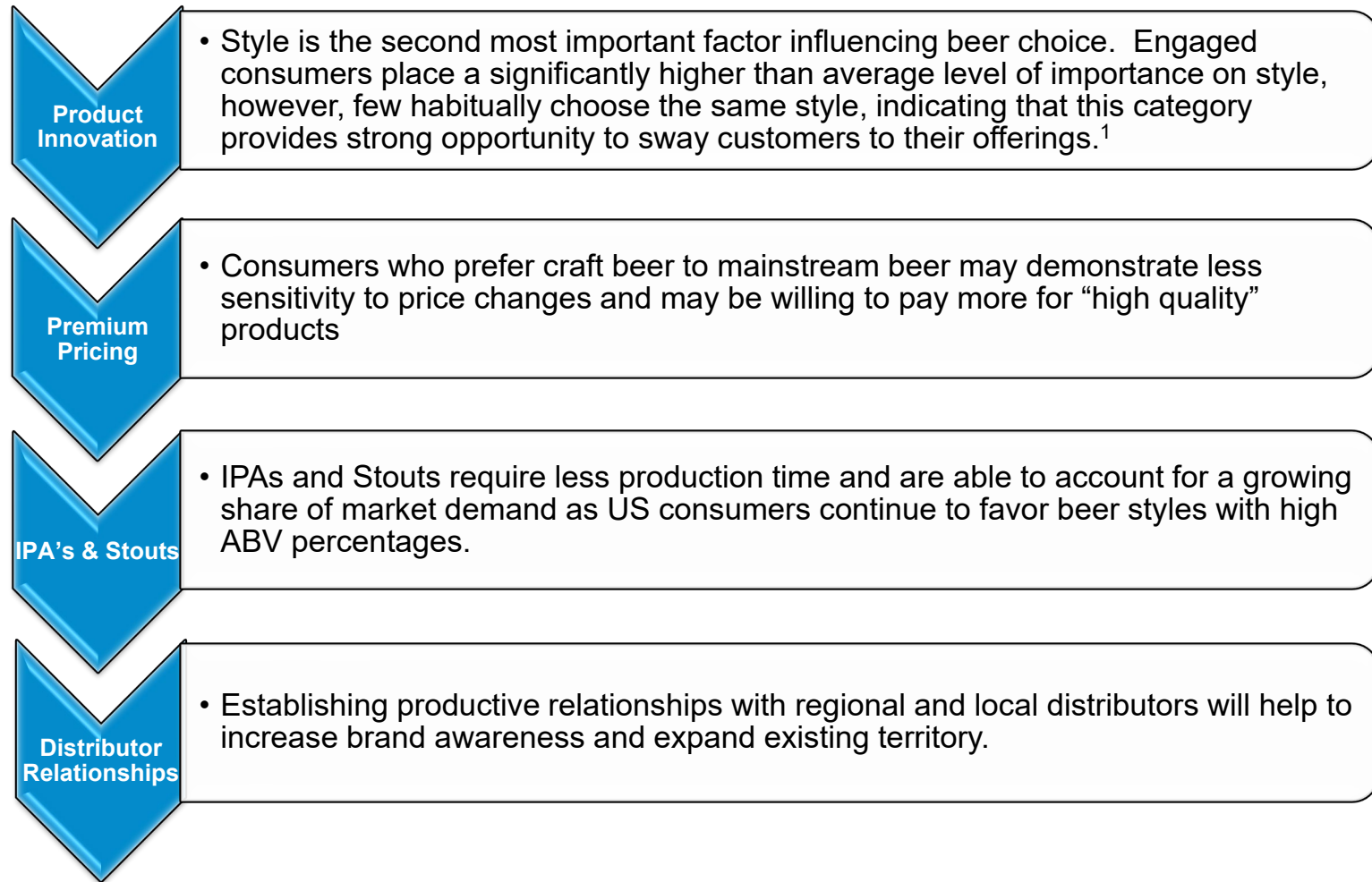
Critical Issues For Market Participants – Business Challenges

- **Increased Costs** (price to market by CME Group) are expected to increase over the next five years as foreign exchange rates, farming yields, and unanticipated climate change remain volatile.

- **Select Market New Entry Competition**: Colorado, Utah, Oklahoma, Minnesota, and Indiana should expect to see an increase in market volatility as grocery, convenient and drugstores, (new points of market entry) begin to sell full strength beer for the first time in 100 years.

  - Previously, the States adhered to the 4-tier distribution law that restricted alcohol sales with and ABV%>3.0% to onsite breweries and full-service liquor stores.

Pie chart: Ice beer, 3%; Malt liquor, 2%; Popular beer, 7%; Craft beer, 12%; Light beer, 45%; Imported beer, 19%; Super-premium & premium beer, 14%

1 Total dollar sales of beer based on US Bureau of Labor Statistics, Consumer Expenditure Survey; US Bureau of Economic Analysis; Brewers Association; forecast developed by Mintel. Volume sales are from The Beverage Information & Insight Group, "2018 Beer Handbook."

Industry Opportunity & Competitive Advantages

Product Innovation
- Style is the second most important factor influencing beer choice. Engaged consumers place a significantly higher than average level of importance on style, however, few habitually choose the same style, indicating that this category provides strong opportunity to sway customers to their offerings.[1]

Premium Pricing
- Consumers who prefer craft beer to mainstream beer may demonstrate less sensitivity to price changes and may be willing to pay more for "high quality" products

IPA's & Stouts
- IPAs and Stouts require less production time and are able to account for a growing share of market demand as US consumers continue to favor beer styles with high ABV percentages.

Distributor Relationships
- Establishing productive relationships with regional and local distributors will help to increase brand awareness and expand existing territory.

1 Total dollar sales of beer based on US Bureau of Labor Statistics, Consumer Expenditure Survey; US Bureau of Economic Analysis; Brewers Association; forecast developed by Mintel. Volume sales are from The Beverage Information & Insight Group, "2018 Beer Handbook."

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Initial Insights

- We were successful in data merging, with some missing values found as a result.

- Brewery Population varies widely across States, which suggests a regional and locality based analytical approach

FIRST 6 RECORDS

Brewery_id	BeerName	Beer_ID	ABV	IBU	Style	Ounces	BrewerName	City	State
1	Get Together	2692	0.045	50	American IPA	16	NorthGate Brewing	Minneapolis	MN
1	Maggie's Leap	2691	0.049	26	Milk / Sweet Stout	16	NorthGate Brewing	Minneapolis	MN
1	Wall's End	2690	0.048	19	English Brown Ale	16	NorthGate Brewing	Minneapolis	MN
1	Pumpion	2689	0.060	38	Pumpkin Ale	16	NorthGate Brewing	Minneapolis	MN
1	Stronghold	2688	0.060	25	American Porter	16	NorthGate Brewing	Minneapolis	MN
1	Parapet ESB	2687	0.056	47	Extra Special / Strong Bitter (ESB)	16	NorthGate Brewing	Minneapolis	MN

LAST 6 RECORDS

Brewery_id	BeerName	Beer_ID	ABV	IBU	Style	Ounces	BrewerName	City	State
556	Pilsner Ukiah	98	0.055	NA	German Pilsener	12	Ukiah Brewing Company	Ukiah	CA
557	Heinnieweisse Weissebier	52	0.049	NA	Hefeweizen	12	Butternuts Beer and Ale	Garrattsville	NY
557	Snapperhead IPA	51	0.068	NA	American IPA	12	Butternuts Beer and Ale	Garrattsville	NY
557	Moo Thunder Stout	50	0.049	NA	Milk / Sweet Stout	12	Butternuts Beer and Ale	Garrattsville	NY
557	Porkslap Pale Ale	49	0.043	NA	American Pale Ale (APA)	12	Butternuts Beer and Ale	Garrattsville	NY
558	Urban Wilderness Pale Ale	30	0.049	NA	English Pale Ale	12	Sleeping Lady Brewing Company	Anchorage	AK

Key Data Statistics

- Merged Dataset
  - Breweries = 558
  - Beers = 2692

- Missing Values
  - ABV = 62
  - IBU = 1005
  - Style = 5
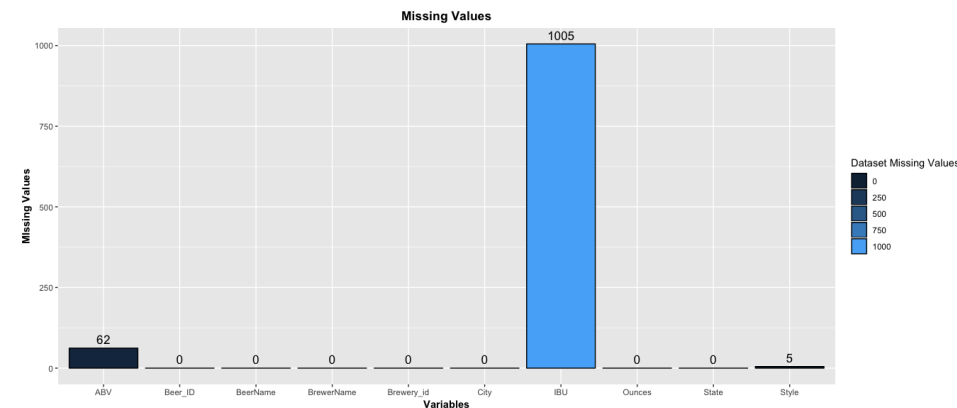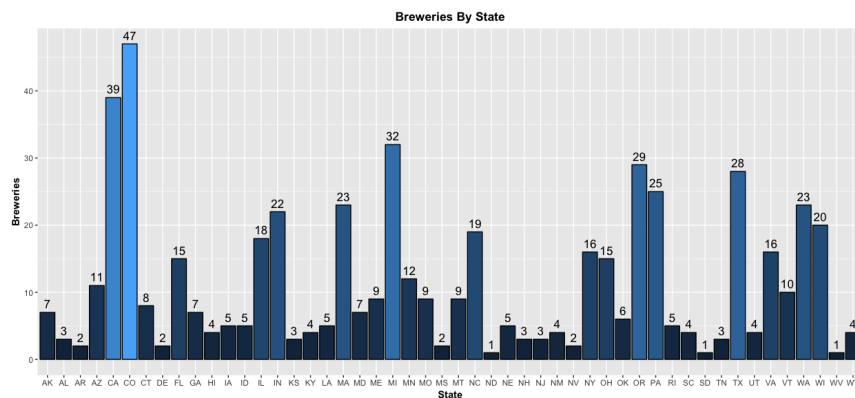
Alcohol By Volume (ABV)

- As shown ABV is a slightly right-skewed distribution with
    - Mean ABV = 6%
    - Median ABV = 5.6%
    - Maximum ABV = 12.8%

Frequency	
Minimum	0.001
1st Quartile	0.050
Median	0.056
Mean	0.0597734
3rd Quartile	0.067
Maximum	0.128
NA's	62

ABV Descriptive Statistics	
Number of Values	2348
Number of NA	62
Min	0.001
Max	0.128
Range	0.127
Sum	140.348
Median	0.056
Mean	0.0597734
Standard Error Mean	0.0002795
95% Confidence On Mean	0.0005480
Variance	0.0001834
Standard Deviation	0.0135417
Coefficient of Variance	0.2265511

ABV Histogram: Mean = 6%
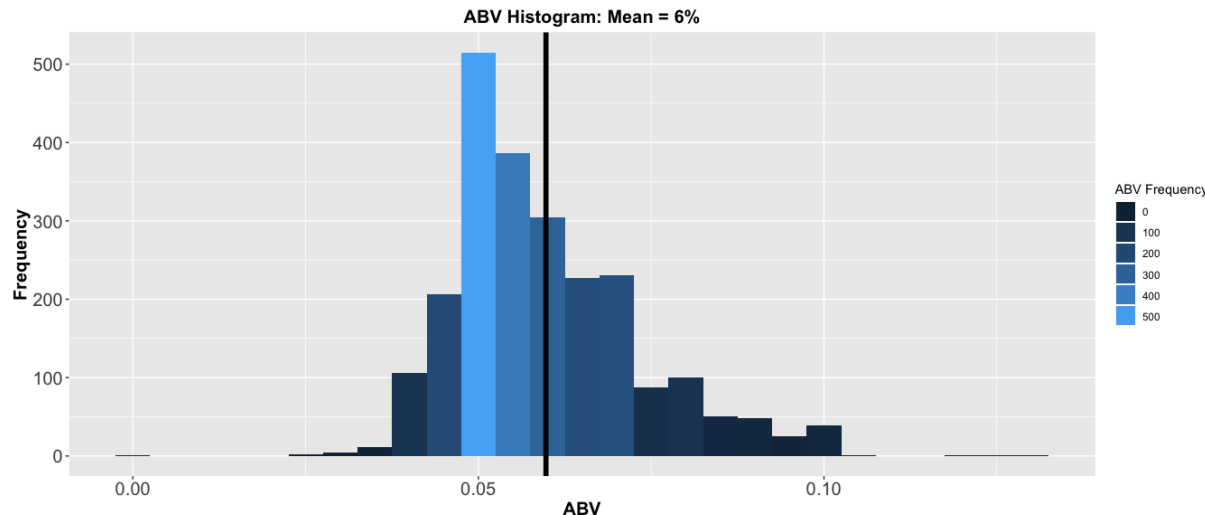
- Top State By Median ABV = **Kentucky and District of Columbia (Tie @ 6.25%)**

- Top State By Absolute ABV = **Colorado (@ 12.8%)**

Median ABV By State

Sorted Median ABV By State
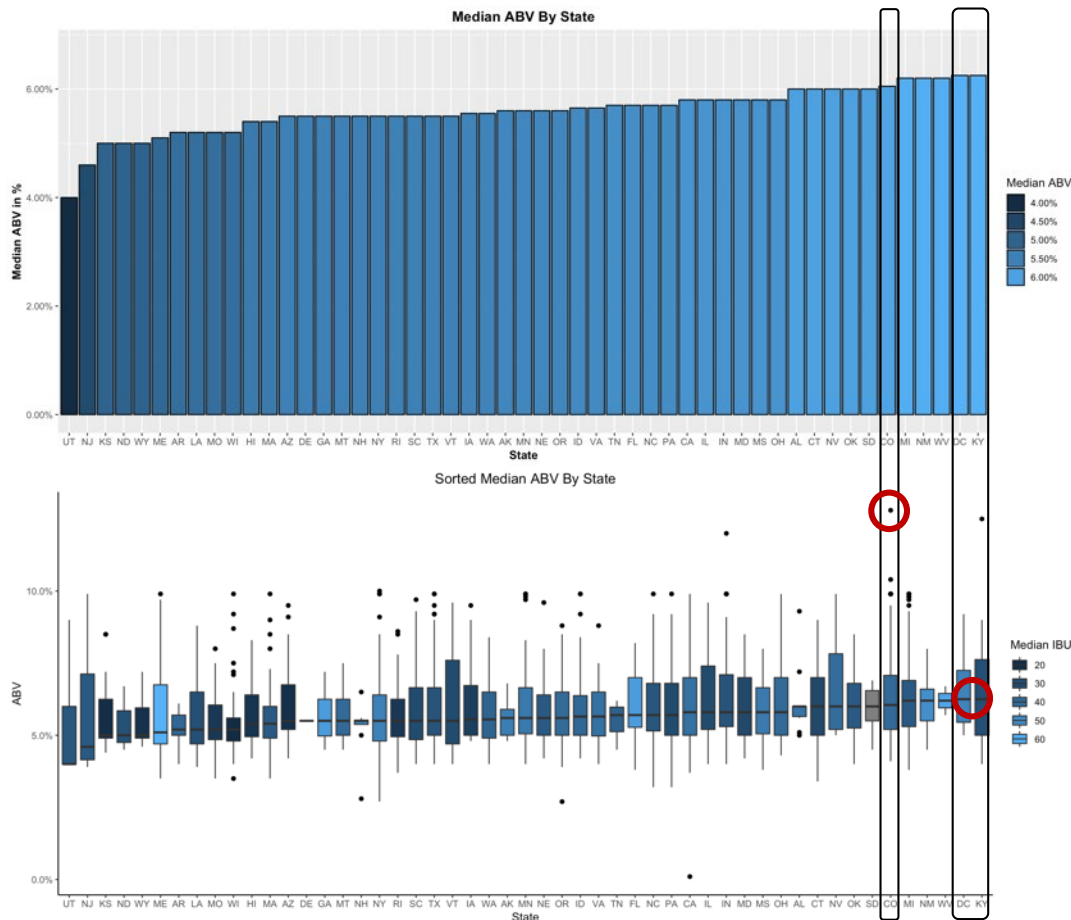
Top 5 ABV Beers (Absolute Values)

Brewer Name	State	Beer Name	ABV
Upslope Brewing Company	CO	Lee Hill Series Vol. 5 - Belgian Style Quadrupel Ale	12.8%
Against the Grain Brewery	KY	London Balling	12.5%
Tin Man Brewing Company	IN	Csar	12.0%
Upslope Brewing Company	CO	Lee Hill Series Vol. 4 - Manhattan Style Rye Ale	10.4%
Sixpoint Craft Ales	NY	4Beans	10.0%

International Bitterness Unit (IBU)

- As shown IBU is a right-skewed distribution with
  - Mean IBU   = 42.72
  - Median IBU   = 35
  - Maximum IBU   = 138

	Frequency
Minimum	4.00
1st Quartile	21.00
Median	35.00
Mean	42.72
3rd Quartile	64.00
Maximum	138.00
NA's	1005

IBU Descriptive Statistics	
Number of Values	1405
Number of NA	1005
Min	4.00
Max	138.00
Range	134.00
Sum	60012.00
Median	35.00
Mean	42.71317
Standard Error Mean	0.6924162
95% Confidence On Mean	1.358282
Variance	673.6135
Standard Deviation	25.95407
Coefficient of Variance	0.6076362

IBU Histogram: Mean = 43

- Top State Median IBU = **Maine @ 61**

- Top State Absolute IBU = **Oregon @ 138**

Median IBU By State

Sorted Median IBU By State
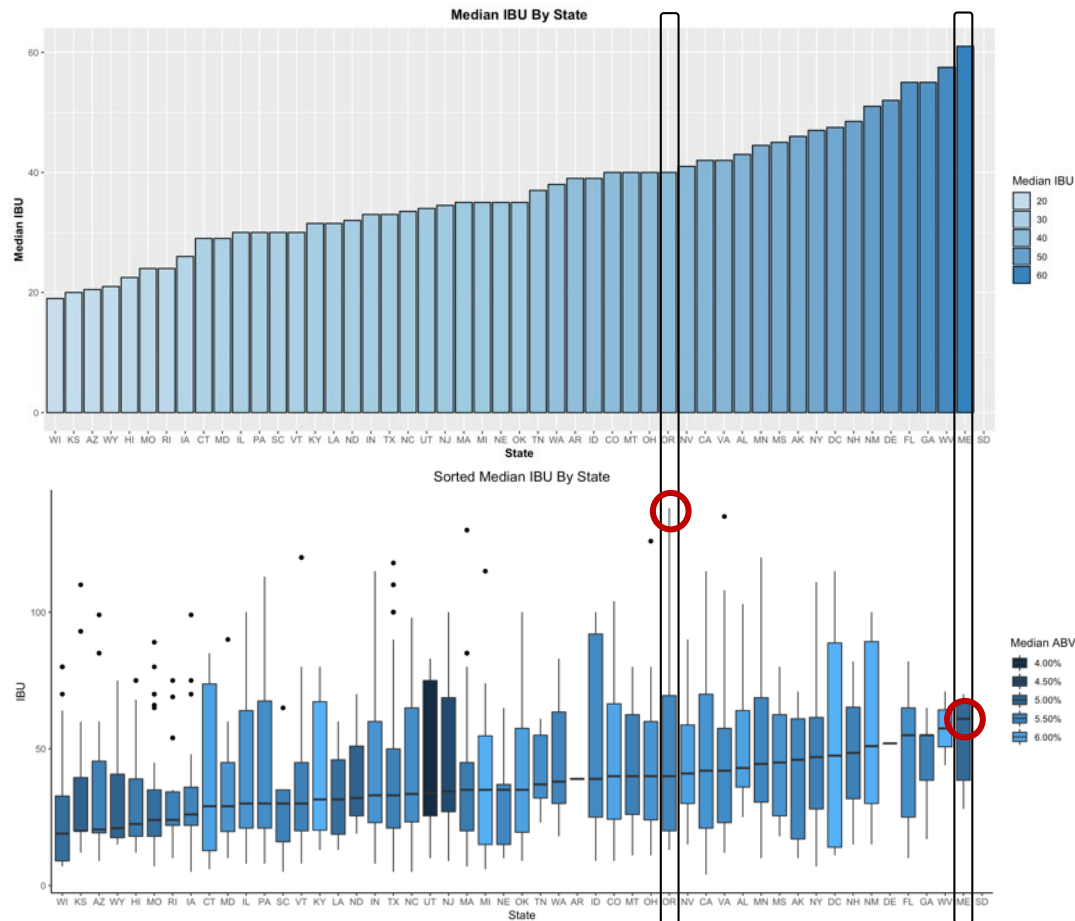
Top 5 IBU Beers (Absolute Values)

Brewer Name	State	Beer Name	IBU
Astoria Brewing Company	OR	Bitter Bitch Imperial IPA	138
Wolf Hills Brewing Company	VA	Troopers Alley IPA	135
Cape Ann Brewing Company	MA	Dead-Eye DIPA	130
Christian Moerlein Brewing Company	OH	Bay of Bengal Double IPA (2014)	126
Surly Brewing Company	MN	Abrasive Ale	120

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- R Mustangs Consultants performed an analysis to determine linear relationships from the provided dataset. A primary question posed was whether there was discernable evidence in the data that IBU and ABV were related.

- Utilizing a linear regression we found the following relation with an R^2 = 0.449. This says that the fit only explains roughly 45% of the variability around the mean.

- **Simply put:** IBU is an **ok** proxy for predicting Alcohol content, but it does not predict a preponderance of the cases precisely. We can utilize IBU as a heuristic proxy to alcohol content.
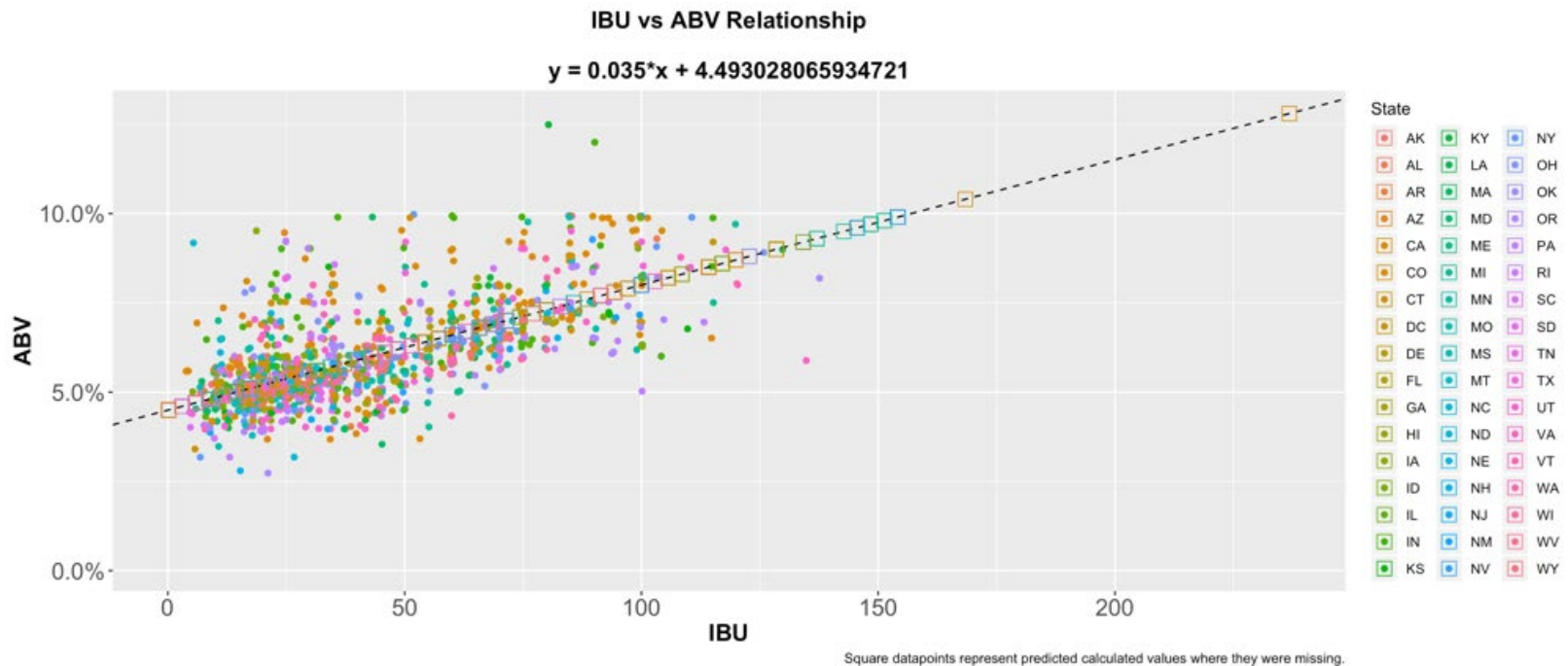
IBU vs ABV Relationship

$$y = 0.035*x + 4.493028065934721$$

Square datapoints represent predicted calculated values where they were missing.
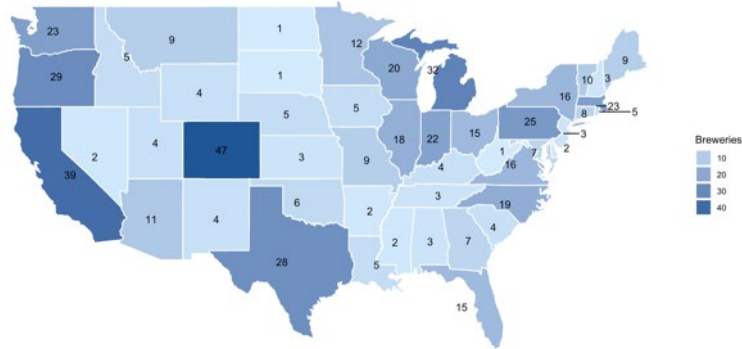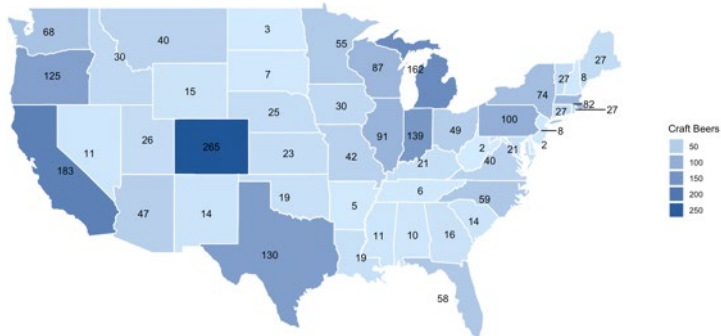
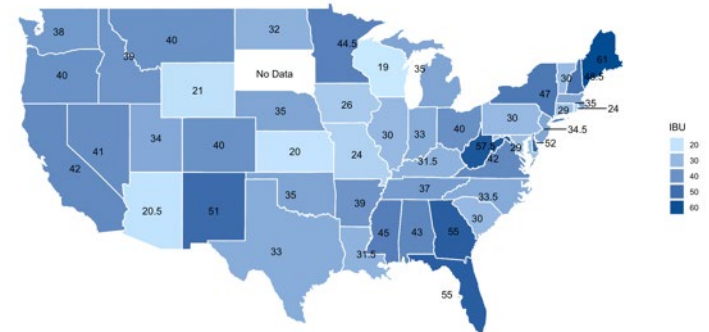Breweries By State

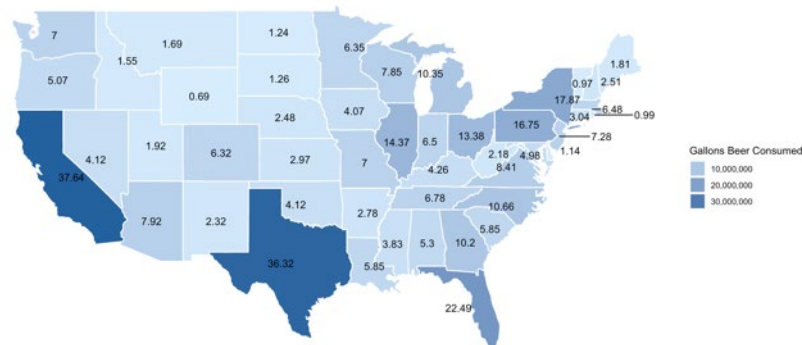Median Percent ABV By State
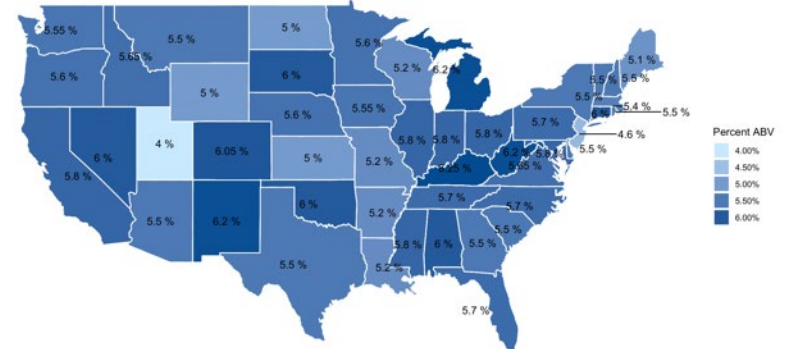
Craft Beers By State

Median IBU By State

Gallons Beer Consumed By State ('000,000's)

- Considering Hopsy's interest in expanding Brewery signups and cross-selling, only the continental US was considered for additional analysis

Two additional datasets were incorporated to round out analysis*

- Gallons of Beer Consumed/Capita: Open ICPSR 2016

- Population: US Census Bureau 2016

No single metric allows for us to describe market dynamics on a detailed enough level to provide a framework with longevity.

- **Market Opportunity is a function of many variables**

  - Beer and alcohol consumption culture within a local proximity

  - Brewery availability and marketing activities for locations

  - Craft beer diversity within market and saturation of styles

  - Alcohol content and taste preferences

  - Population availability within market to consume beer

- **For these reasons, we introduce what we have termed The Mustang Score**

  - A State scoring mechanism based on weighted averages, easily extended to regions

  - Market Opportunity scoring includes weighted (adjustable) constants for a variety of factors that impact area potential

  - The "Score" is the sum of weighted averages for these metrics, scaled from 0 to 100 as an aggregate for all states. The sum of all state scores sum to 100.

- The Mustang Score relies on modifiable weights should Hopsy decide to weigh certain factors more highly

- For the purpose of this analysis we assume equal weights and provide exploration of other weights in the Appendix.

Variables included in scoring include:

- Beer consumption per capita by State (2016)
- State population (2016)
- Brewery population by State
- Craft beers by State
- Median ABV by State
- Median IBU by State

$$MustangScore = 100\left(\frac{1}{n_i}\right)\sum\frac{w_i StateMeasurement_i}{TotalMeasurement_i}$$

$$\sum w_i = n_i$$

$i =$ Metric
$w =$ Constant applied for weight
$n_i =$ The total count of i

- Notes and Caveats:

  - Its important to note that averaging for Median ABV and Median IBU is only done in so far as to weight their importance for the scoring correctly.

  - Beer consumption per capita and population data were sourced from additional data enrichment

  - All other metrics were derived and sourced from client-provided data.
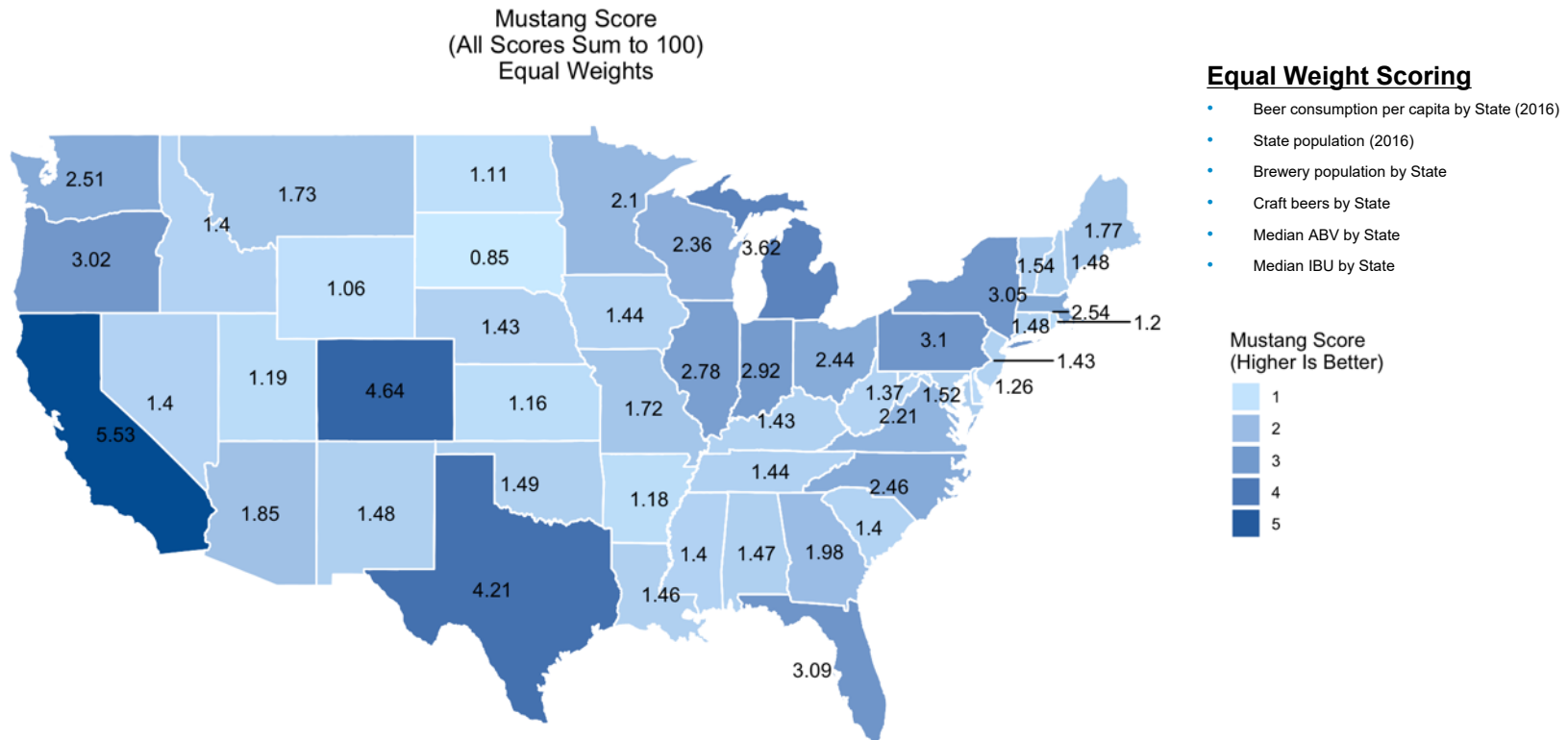
HOPSY Mustang Score Formula Reduces To

$$Mustang\ Score = 100 * \left(\frac{1}{6}\right)\left(\frac{w_1 * StateGallonsPerCapita}{TotalPerCapita} + \frac{w_2 * StatePopulation}{TotalPopulation} + \frac{w_3 * StateBreweries}{TotalBreweries} + \frac{w_4 * StateCraftBeers}{TotalCraftBeers} + \frac{w_5 * StateMedianABV}{TotalMedianABV} + \frac{w_6 * StateMedianIBU}{TotalMedianIBU}\right)$$

- The following map displays the Market Opportunity for Hopsy's needs, based on the Mustang Score

- Visually we can discern high Market Opportunity throughout the West Coast, Colorado, Texas, Florida, and portions of the Northeast

- Interestingly Florida and Michigan are also unexpected contenders

Mustang Score
(All Scores Sum to 100)
Equal Weights

Equal Weight Scoring

- Beer consumption per capita by State (2016)
- State population (2016)
- Brewery population by State
- Craft beers by State
- Median ABV by State
- Median IBU by State

Mustang Score
(Higher Is Better)

	1
	2
	3
	4
	5

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- **Focus on High Mustang Score States, with low existing supply of high Hops (High IBU) beer**

  - **High Mustang Score** - Indicates a high market potential for Hopsy's existing supply-to-consumer model.

  - **Low Median IBU** - Low Median IBU is a proxy for the existing supply of High Hops (High IBU) beer in the market. Focusing here allows Hopsy to bring unique new high Hops beers to a target Market. This represents 'whitespace' in the market available for penetration for a new beer Style.

State	Median IBU	Mustang Score
California	42	5.53
Colorado	40	4.64
Texas	33	4.21
Michigan	35	3.62
Pennsylvania	47	3.10

Hopsy Target Market Whitespace

Sorted 50< Median IBU >50 By State

>50 IBU = Hoppy

<50 IBU = Malty

IBU

Median ABV
- 4.00%
- 4.50%
- 5.00%
- 5.50%
- 6.00%

State

WI KS AZ WY HI MO RI IA CT MD IL PA SC VT KY LA ND IN TX NC UT NJ MA MI NE OK TN WA AR ID CO MT OH OR NV CA VA AL MN MS AK NY DC NH NM DE FL GA WV ME SD
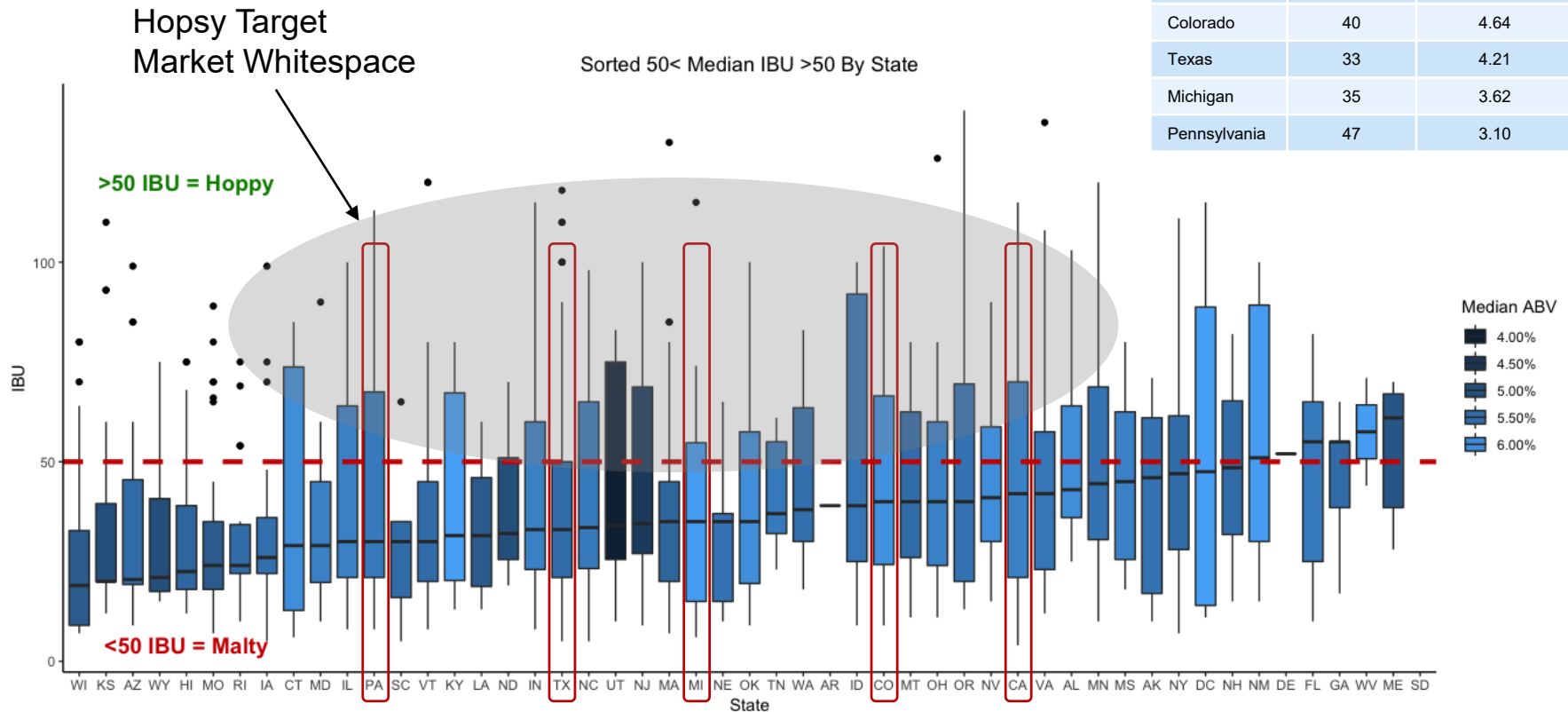
Hopsy's Request

- Analysis of U.S. Craft Beer and Brewery Market data and insight on product and market dynamics.
- Recommend target geographies which can aligned to their 2020 Market Sourcing Strategy for the existing product offering as well as potential cross-state distribution.
- Define an analytical framework for future analytical work

Top 5 Identified Markets

California	Colorado	Texas	Michigan	Pennsylvania

- ✓ R Mustangs recommends a data driven strategy to evaluate these areas for growth stage activities.
- ✓ Should these States already have penetration plans, the Mustang Scoring Framework provides a crystallized ranking system for review in order to determine the next State to target.
- ✓ For future work, we would recommend analysis of pricing and incorporating that into the overall data framework. We would also recommend updating all datasets with the most current data lineages. R Mustangs would be happy to assist in that for future engagements.

Mustang Score
(All Scores Sum to 100)
Equal Weights
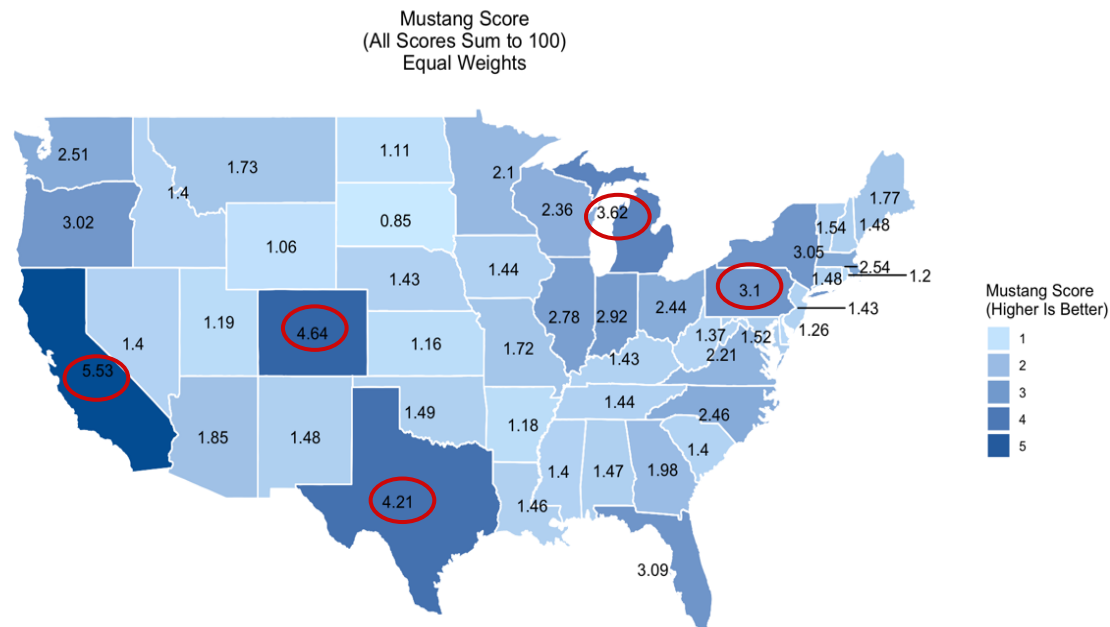
Thank You For The Opportunity

Questions?

All content for this study can be found @

https://github.com/vaughnch/r_mustangs

- Additional Datasets Incorporated To This Study

  – **Open ICPSR:**
    https://www.openicpsr.org/openicpsr/project/105583/version/V2/view;jsessionid=843DFC2FBDC320D1624BF92319E643FA?path=/openicpsr/105583/fcr:versions/V2/apparent_per_capita_alcohol_consumption.csv&type

  – **US Census Bureau:**
    https://www2.census.gov/programs-surveys/popproj/datasets/2017/2017-popproj/np2017_d1.csv