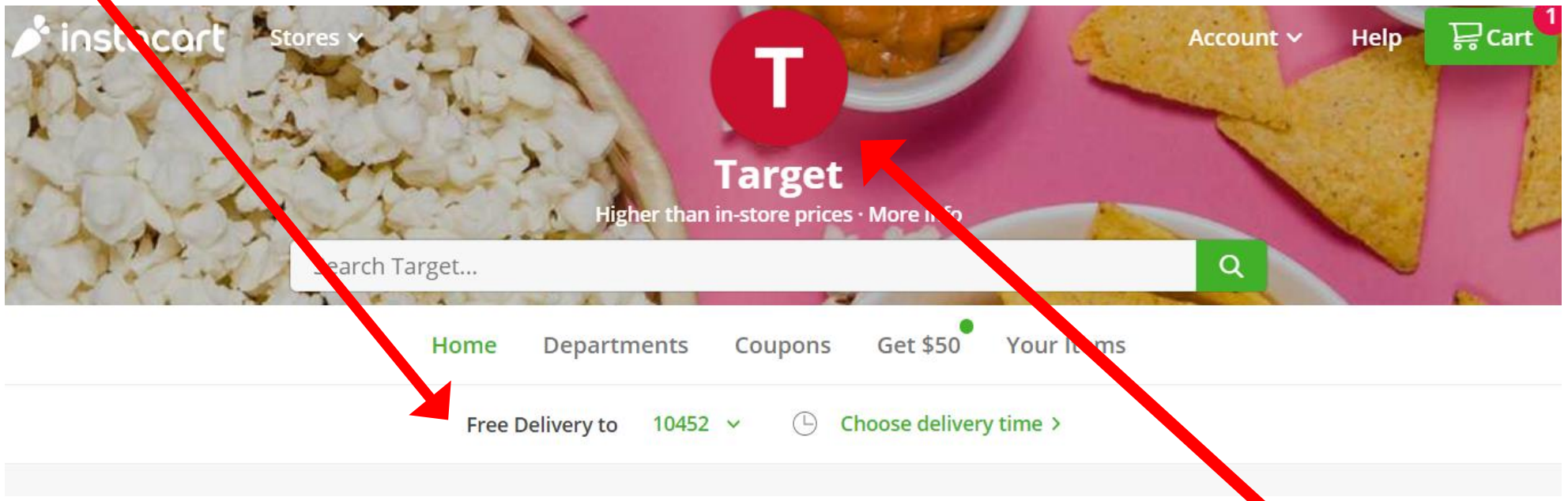
Market Basket Analysis

Rachelle Perez

Who is the client?
What can we solve with data?

Who is instacart ?

Delivery company, hiring **local shoppers** to…



deliver **groceries** from **retail partners**.

Industry: High Competition

amazonfresh

SHIPT

Postmates

Groceries

freshdirect

Alcohol

DRIZLY

MINIBAR

Industry: Going after Instacart

amazonfresh

ACQUIRED

SHIPT

ACQUIRED BY

2017

INSTACART PARTNER

WHOLE FOODS MARKET

TARGET

Instacart's Strategy

Competitive Advantage

"One-Stop-Shop"
Groceries + Alcohol

User Engagement & Retention

$25K Competition:
New Recommender Model

Product Developments:
Alcohol Reviews &
Instacart Pickup

Expansion Outside US

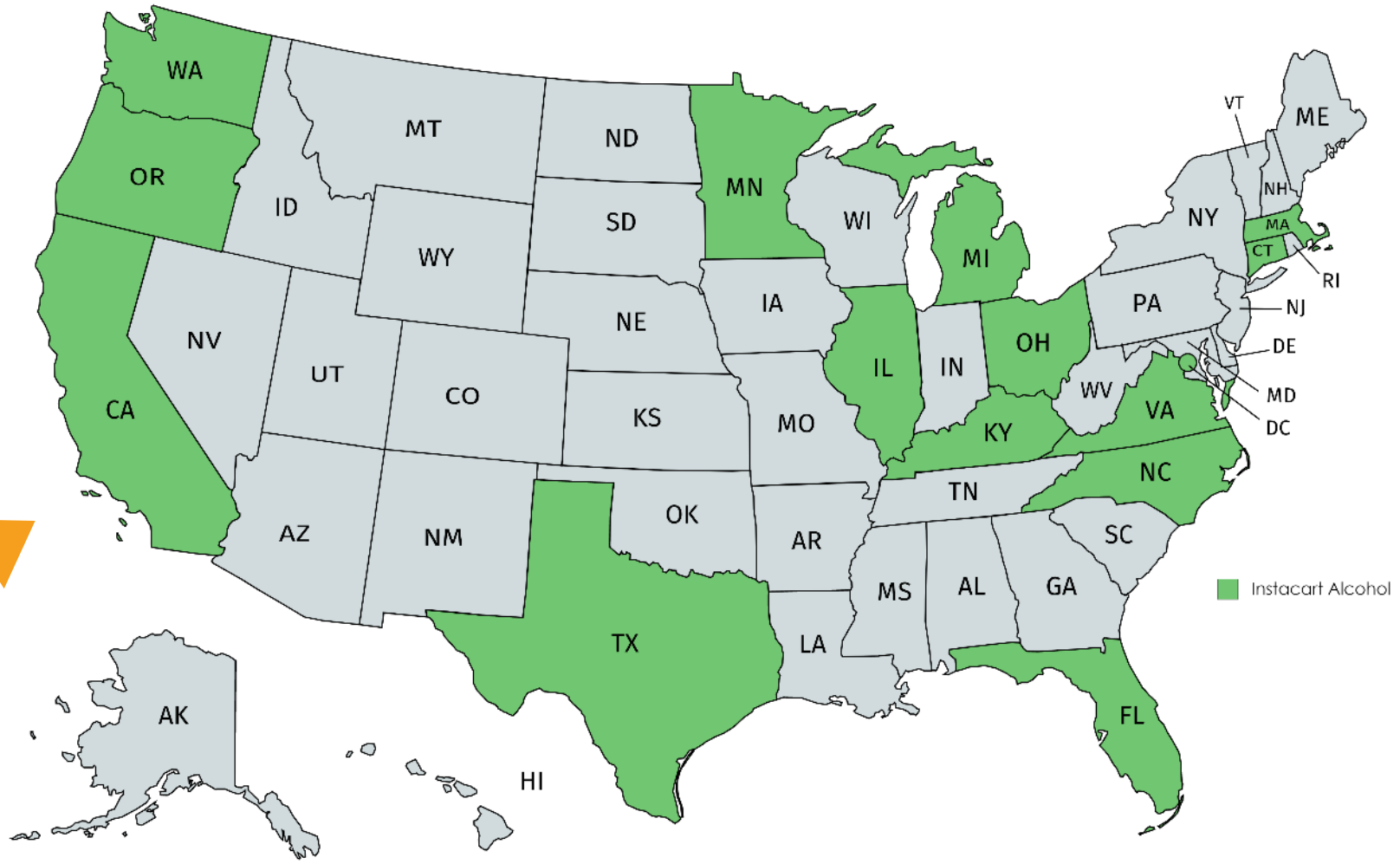
Instacart Canada

Competitive Advantage: Groceries **+ Alcohol**

"As more people move online for their weekly grocery shop, it's important they're able to ***get everything they need*** *- from fresh groceries and pantry staples to* ***wine, beer and spirits****" - Instacart president [Nilam Ganenthiran]*

2019

14 States + Washington DC



Question

Now that the segment is live…

Does our data support the alcohol expansion? If so, what marketing insights can we collect from data?

If answer…

YES – Continue

NO – Pivot

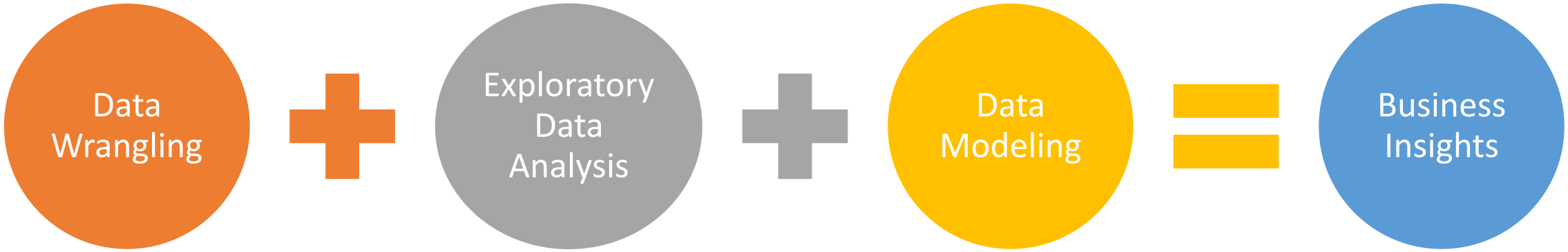
What data is available to analyze?

3+ Million Orders
200K+ Users

Source
"The Instacart Online Grocery Shopping Dataset 2017", Accessed from https://www.instacart.com/datasets/grocery-shopping-2017 on 12/16/2019

Project Steps

Process



Master Merge (SQL)
Data Upload (JN)
Data Cleaning (PY)
Data Storage (AWS)

Visualizations (PY, EX, BI)
Validation (SQL)

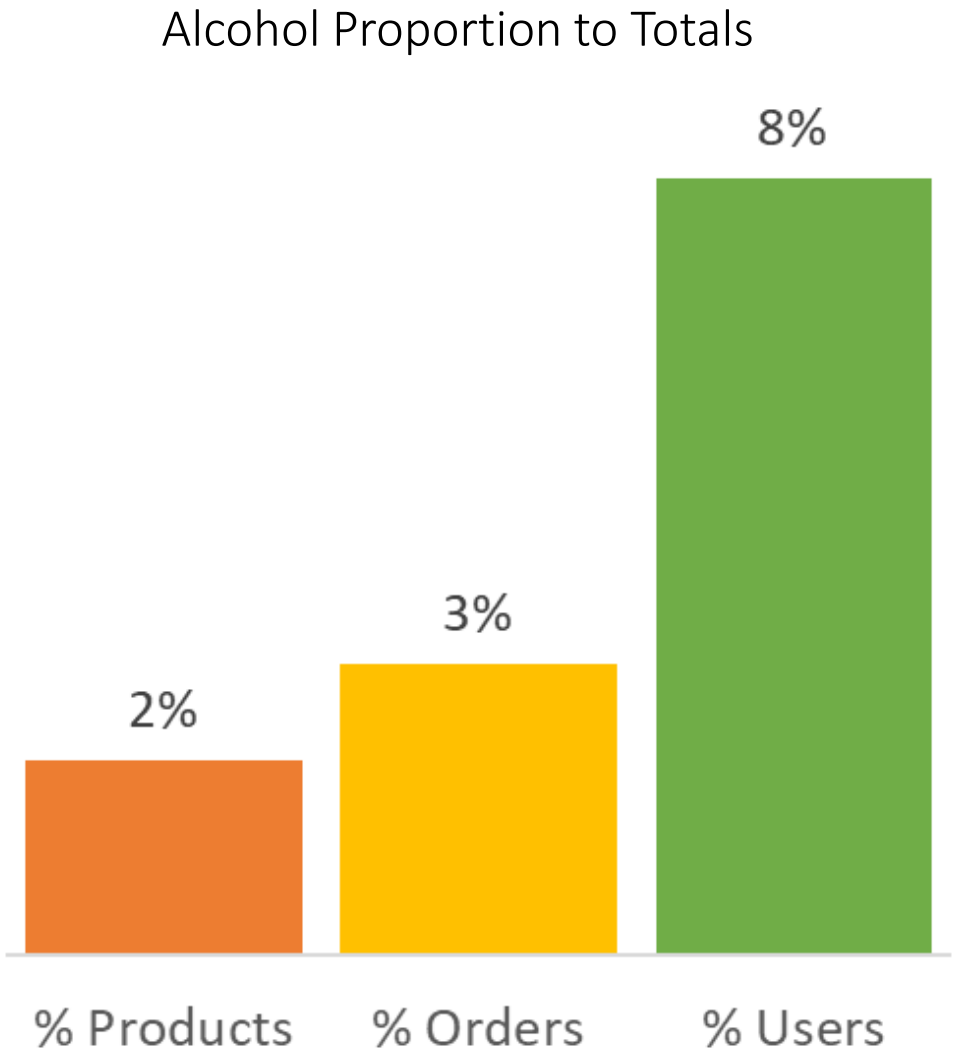
Recommender Model (PY & STAT)

Tools:

Structured Query Learning (SQL), Jupyter Notebook (JN), Python (PY), Amazon Web Services (AWS), Microsoft Excel (EX), PowerBI (BI), Statistics (STAT)

How is alcohol segment performing?

High Demand



Despite 2% Inventory

8%

Users buy Alcohol

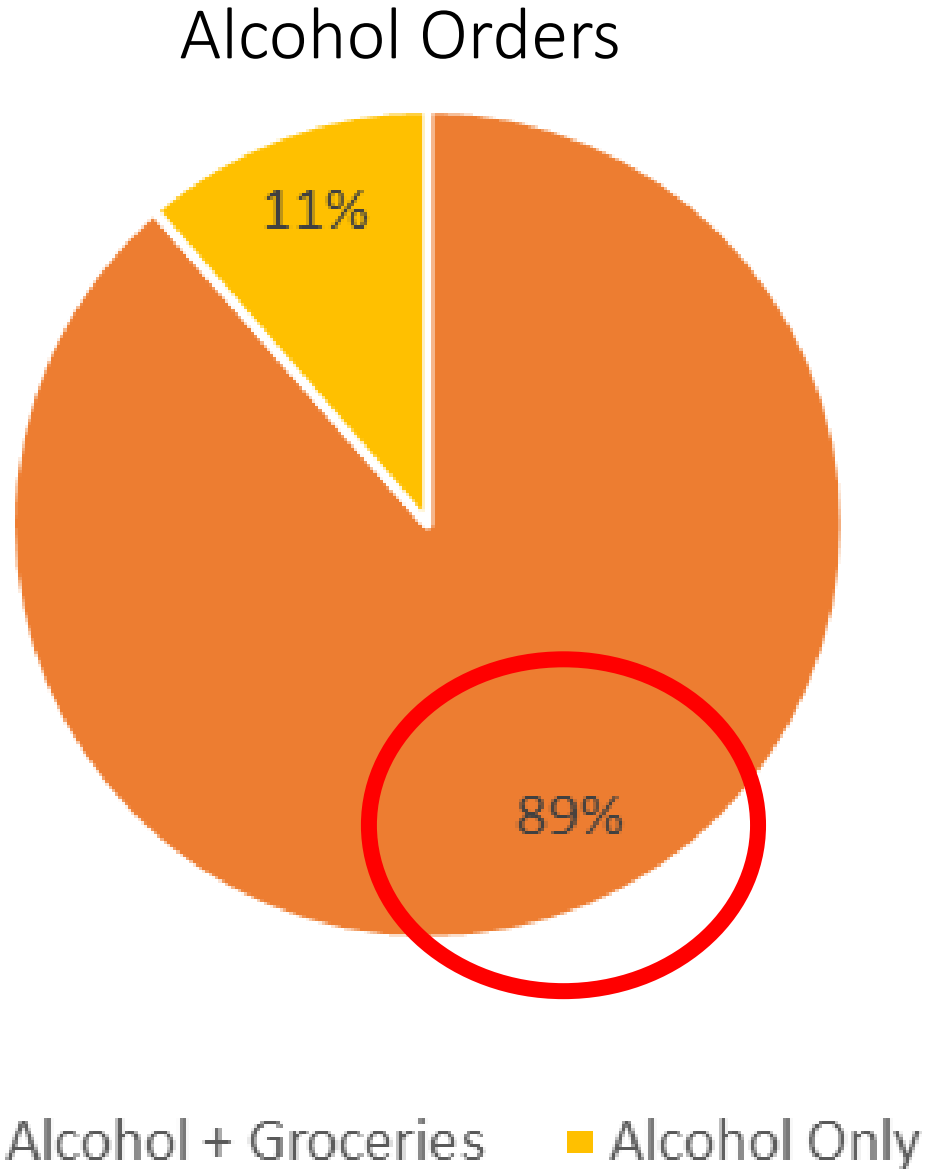
Low Supply
HIGH Demand

Cross-Selling

89%

of orders with alcohol, also have groceries

HIGH **Cross-Selling** between alcohol & non-alcohol products



Up-Selling

25%

Orders where user chose alcohol first and then added groceries.

145,889

grocery units gained

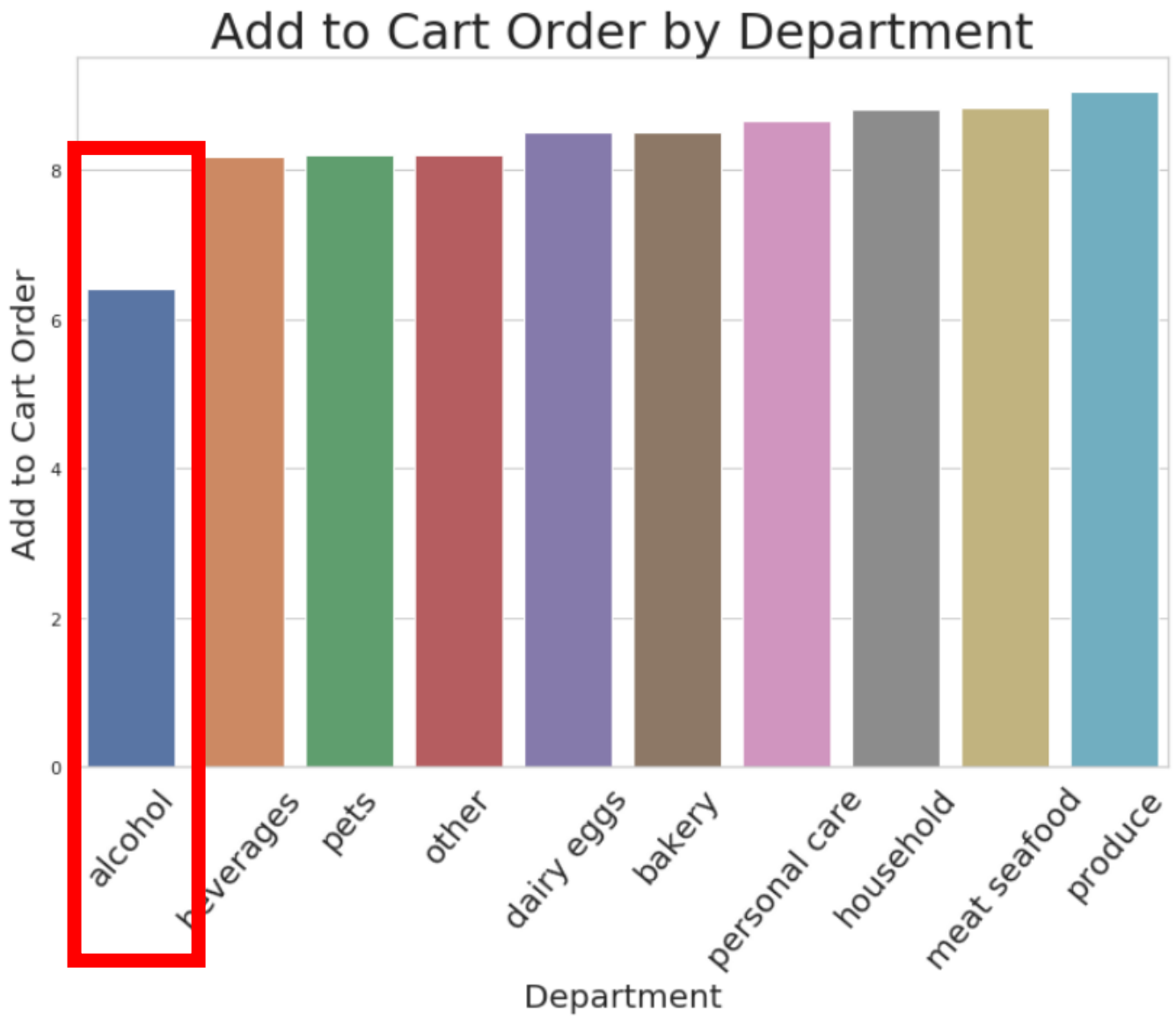
HIGH **Up-Selling Potential**

Position in Cart

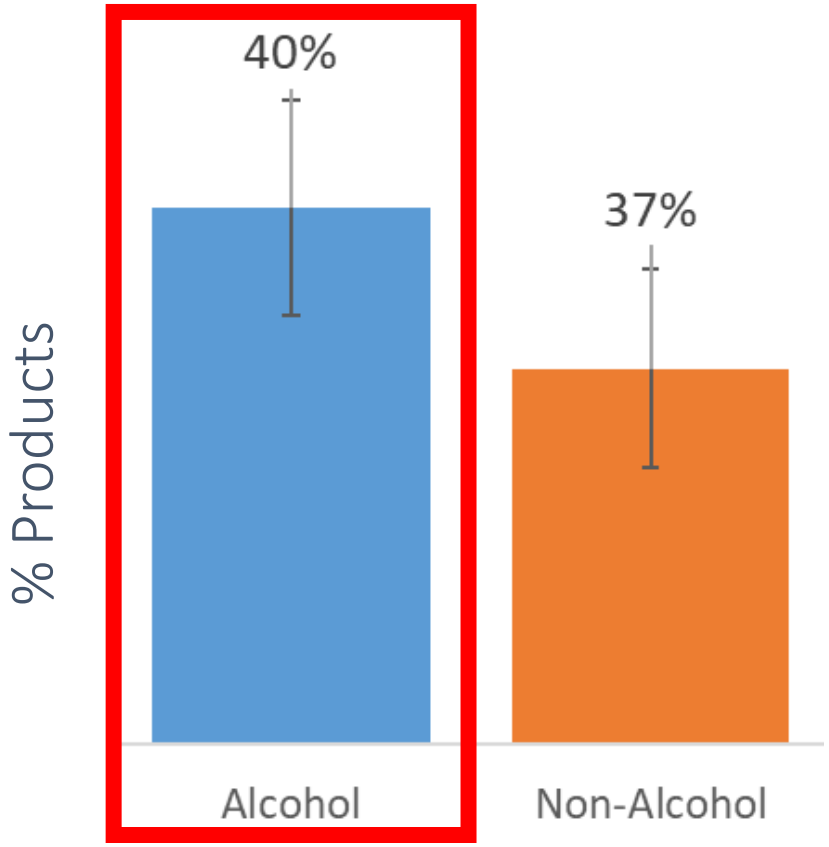
LOWEST

"add to cart order"

Alcohol is one of the first items in cart

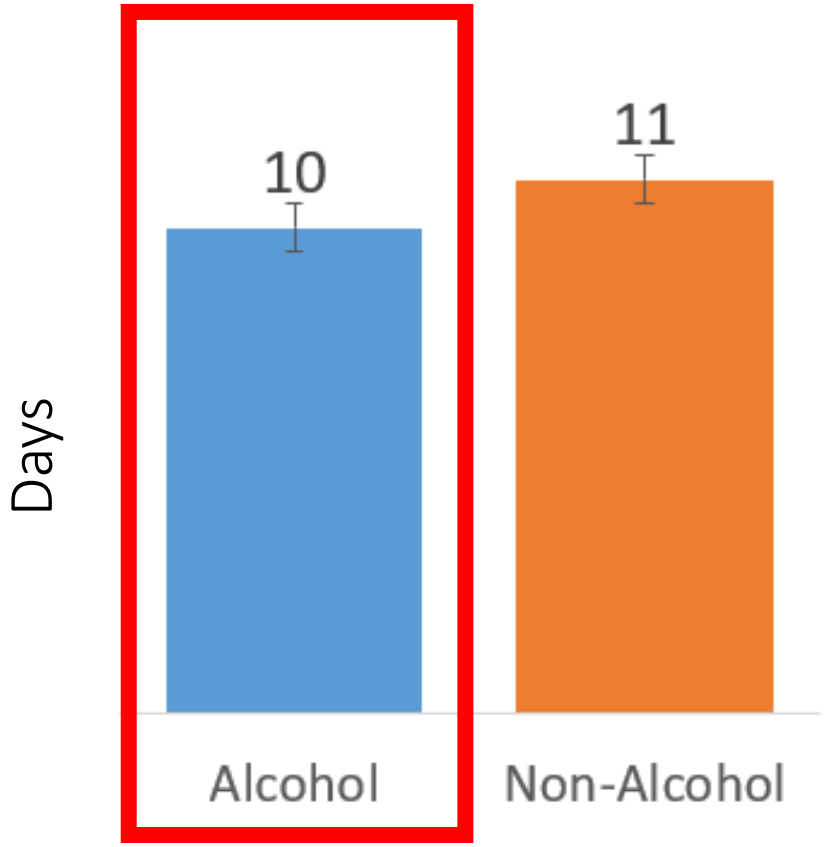


Reordered Ratio



Alcohol products **3% higher** reordered ratio

Order Gap



Alcohol orders made **1 day earlier**

Does our data support the alcohol expansion?

YES!

- ✔ Demand (8% Users)
- ✔ Cross-Selling
- ✔ Up-Selling
- ✔ Position in Cart
- ✔ Reordered Ratio
- ✔ Order Gap

Any marketing insights / opportunities discovered?

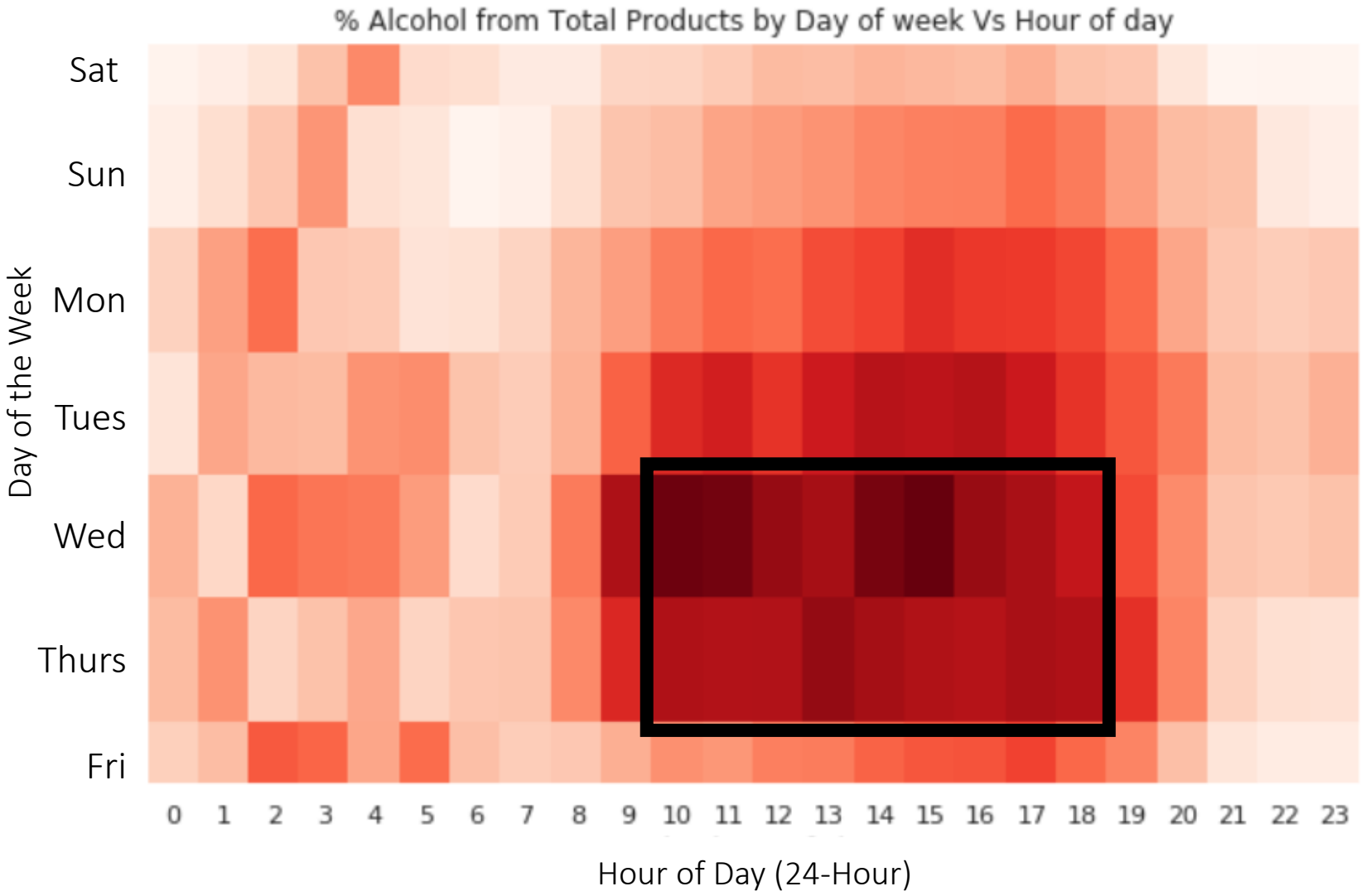
Timing

General Order Peak:
Weekends AM

Alcohol Peak:
Wednesday – Thursday PM

Marketing :
Outreach Timing

Retailer:
Offpeak hours?

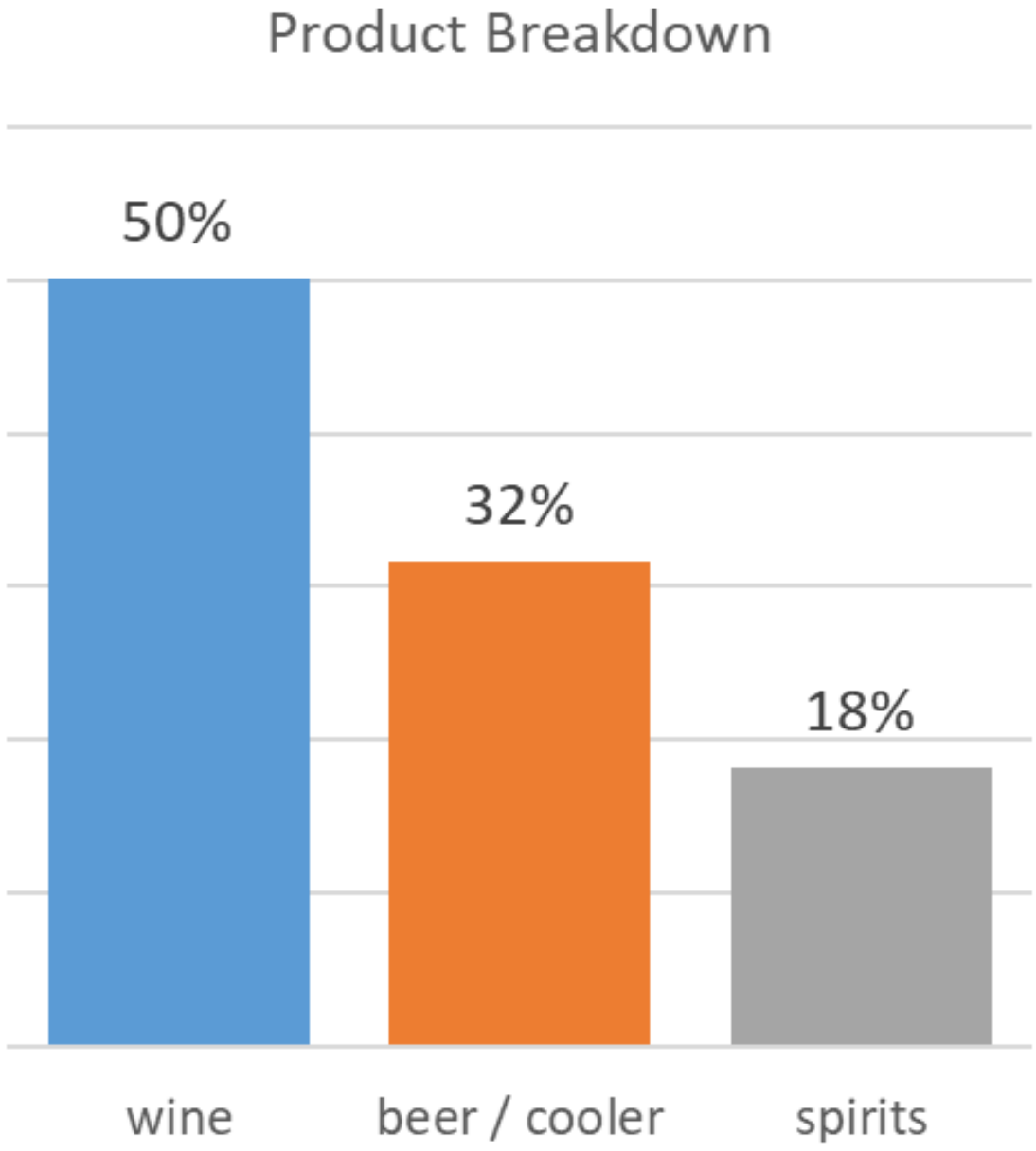


Best Sellers

 # 1 Wine
2 Beer & Coolers
3 Spirits

Marketing:
Wine & Food Pairings

Retailer:
Inventory



Alcohol + Grocery Pairings (Recommender Model)

- Tool Used: **Machine Learning** Method (Association Rule Learning)
- Output: Product pairs by correlation within an order (sample below)

WINE	BEER	SPIRITS
Watermelon	**Ice Bag**	Mixers
Cheese	Soda	**Lemons**
Salami	Tortilla Chips	**Paper Towel**
Avocado	Hummus	Sour Cream
Carrots	Bread	Avocado

- User behavior supports vision (Competitive advantage)
- Marketing
  - Customer Segmentation
  - Advertising Ideas (Romantic Dinners, Parties, Recipes) >> Potential Partnerships

Let’s wrap things up

Conclusion

Does our data support the alcohol expansion?

YES!

- ✔ Demand (8% Users)
- ✔ Cross-Selling
- ✔ Up-Selling
- ✔ Position in Cart
- ✔ Reordered Ratio
- ✔ Order Gap

If YES, what marketing insights can we collect from data?

Timing
Best Sellers
Alcohol & Grocery Pairs (Recommendation Model)

Recommendations & Next Steps

- [With user data] **Personalized Recommendation Model** incorporating User Features
- [With full product names] **Inventory Analysis** using regular expressions
- [With date data] Look into seasonal buying patterns

More info on project

https://github.com/rachelleperez

THANKS!

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