

SyriaTel Communications

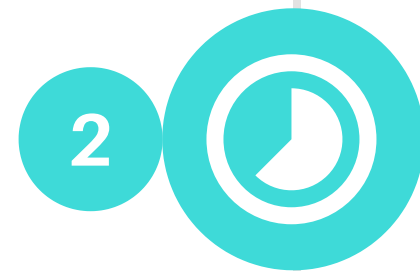
Predicting & Preventing Customer Churn

Outline



Customer Service Calls

Is this a sign of unhappiness or potential churn?



Plan Usage

How much are people using their plan?



Churn Across Different Locations

How does churn differ across the states?

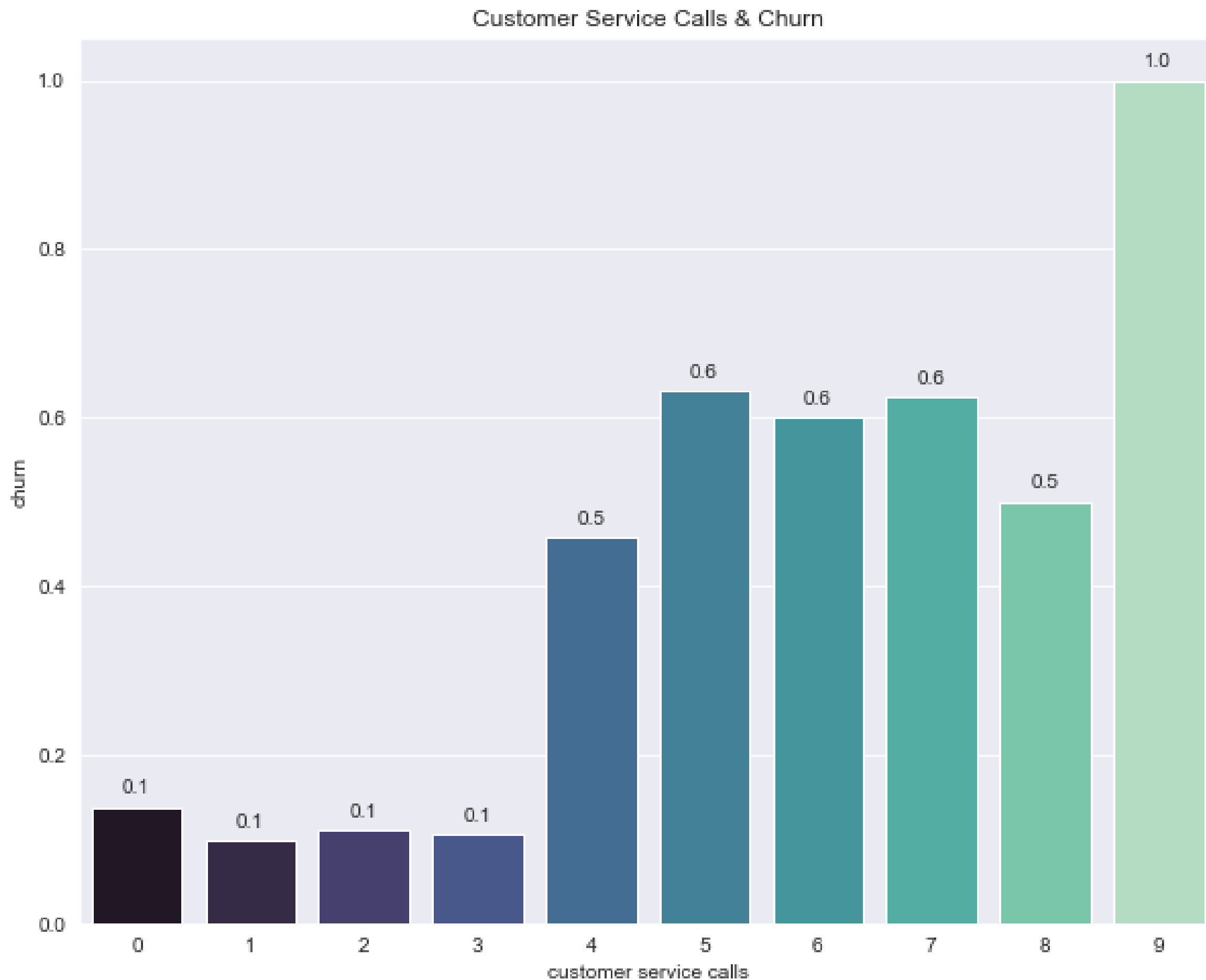


Predicting & Preventing Churn

Confusion Matrix and Cost Benefit Analysis

Calls to Customer Service

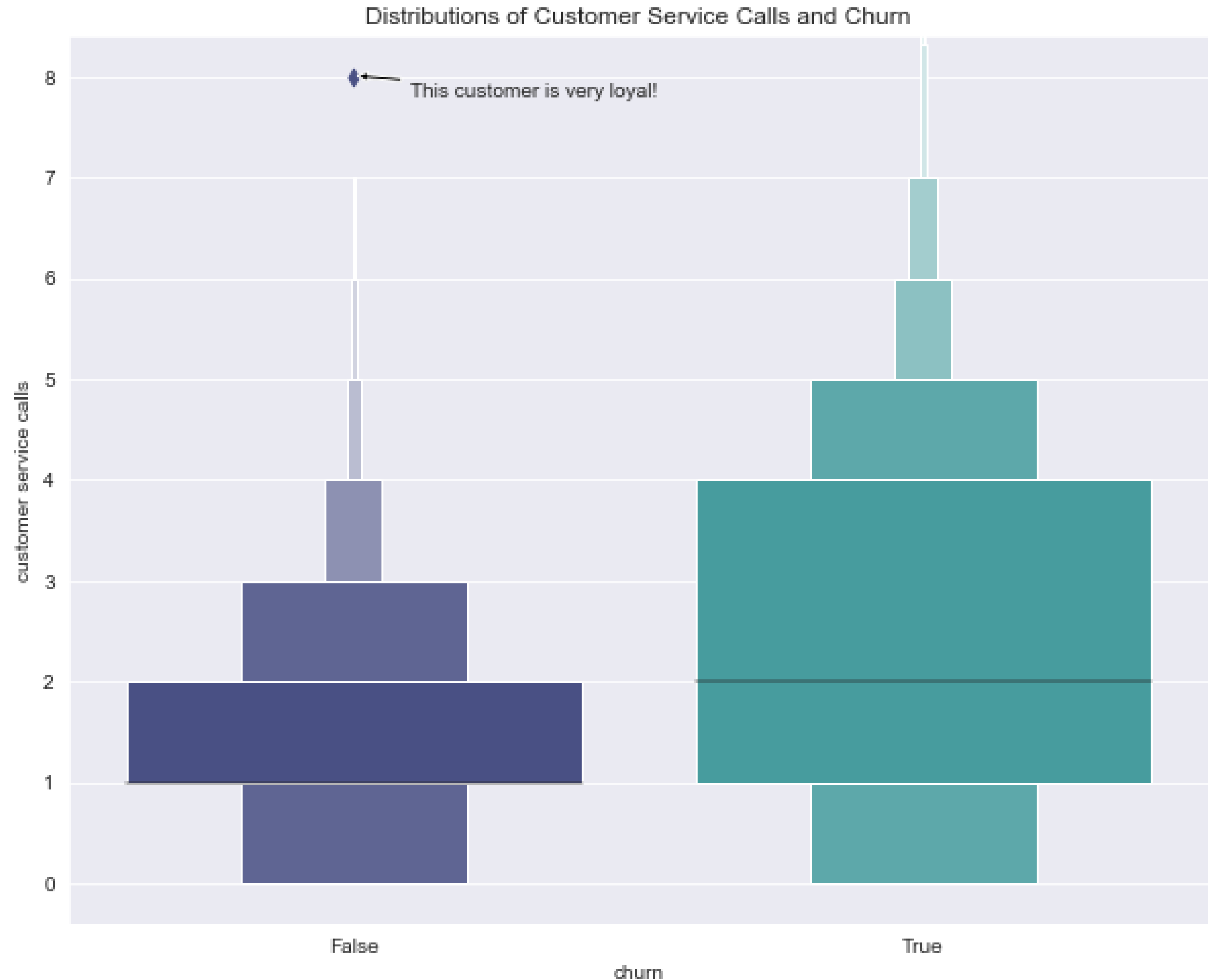
Big increase in churn after 3 calls to customer service



Calls to Customer Service

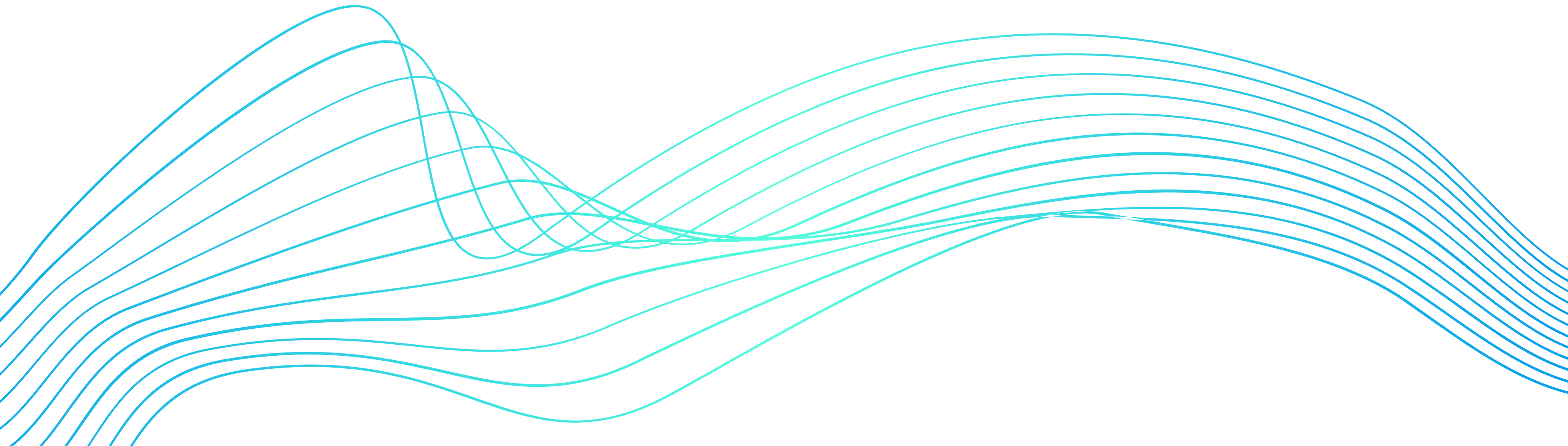
- The majority of customers who did not churn placed 1-2 calls

- The majority of customers who DID churn placed 1-4 calls



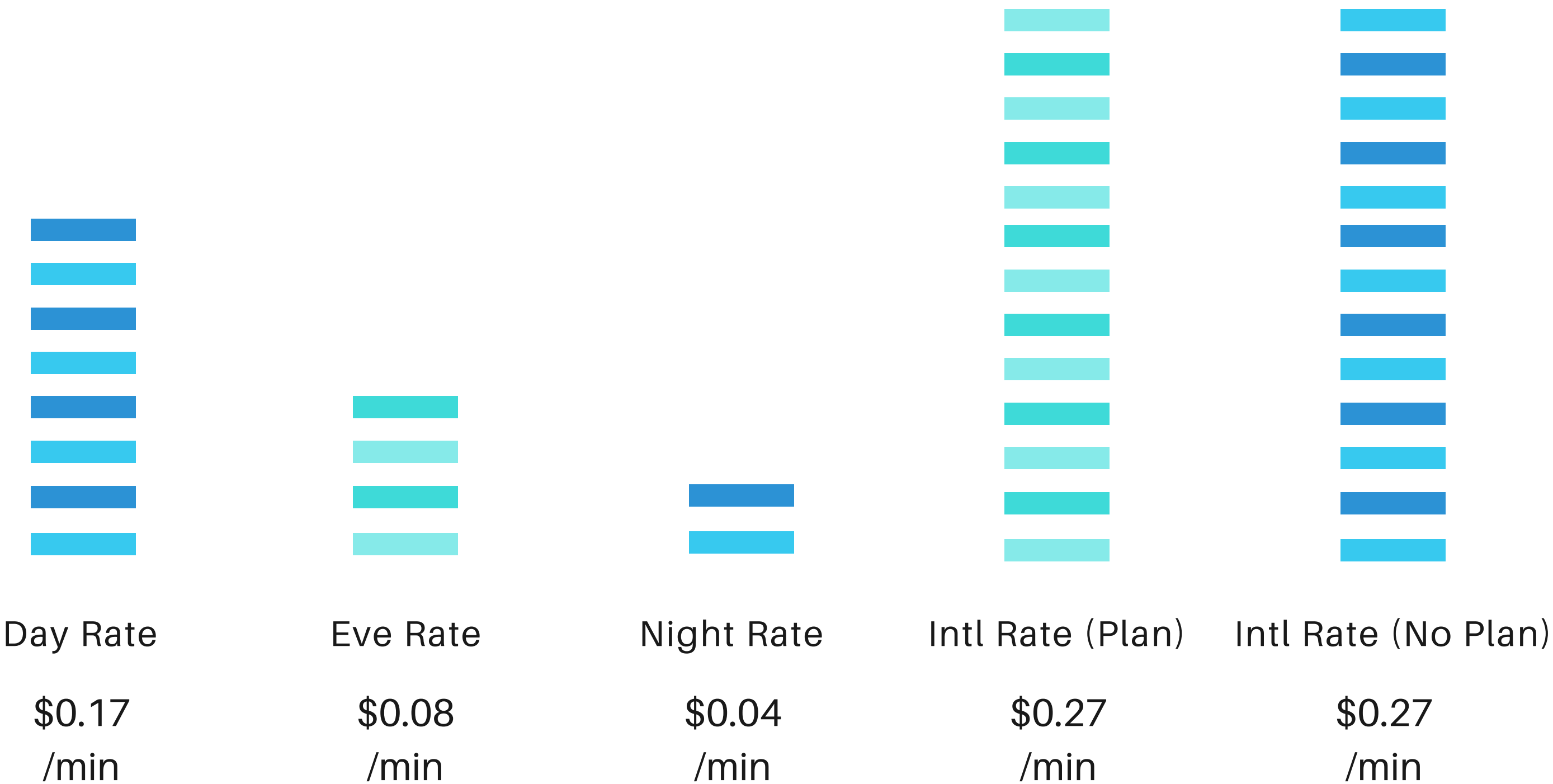
RECOMMENDATIONS

- Revisit customer service protocol
- Offer a larger incentive/discount to customers making more than 3 calls to customer service



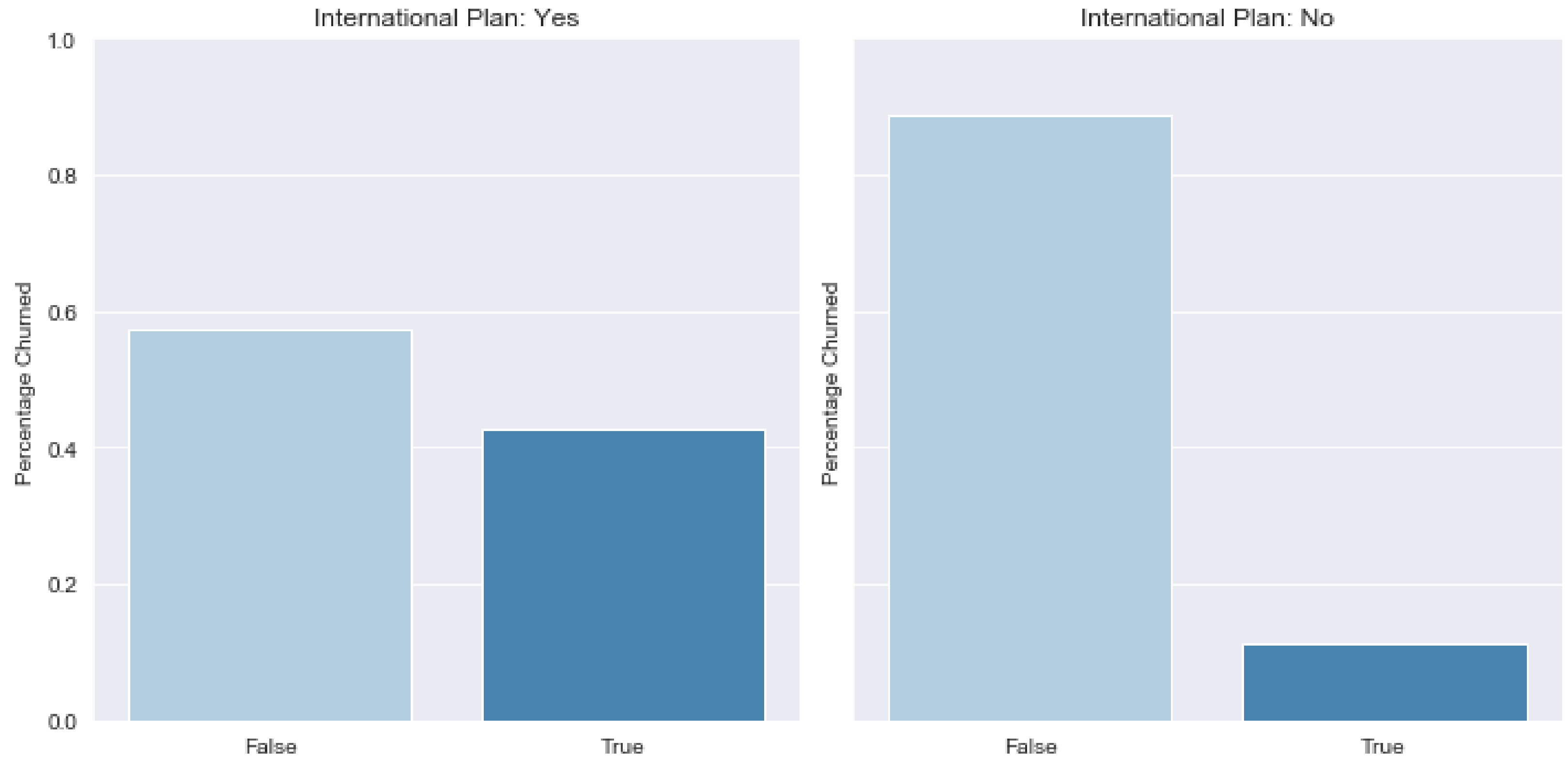
Plan Usage

Notice the international rate is the same with/without an international plan



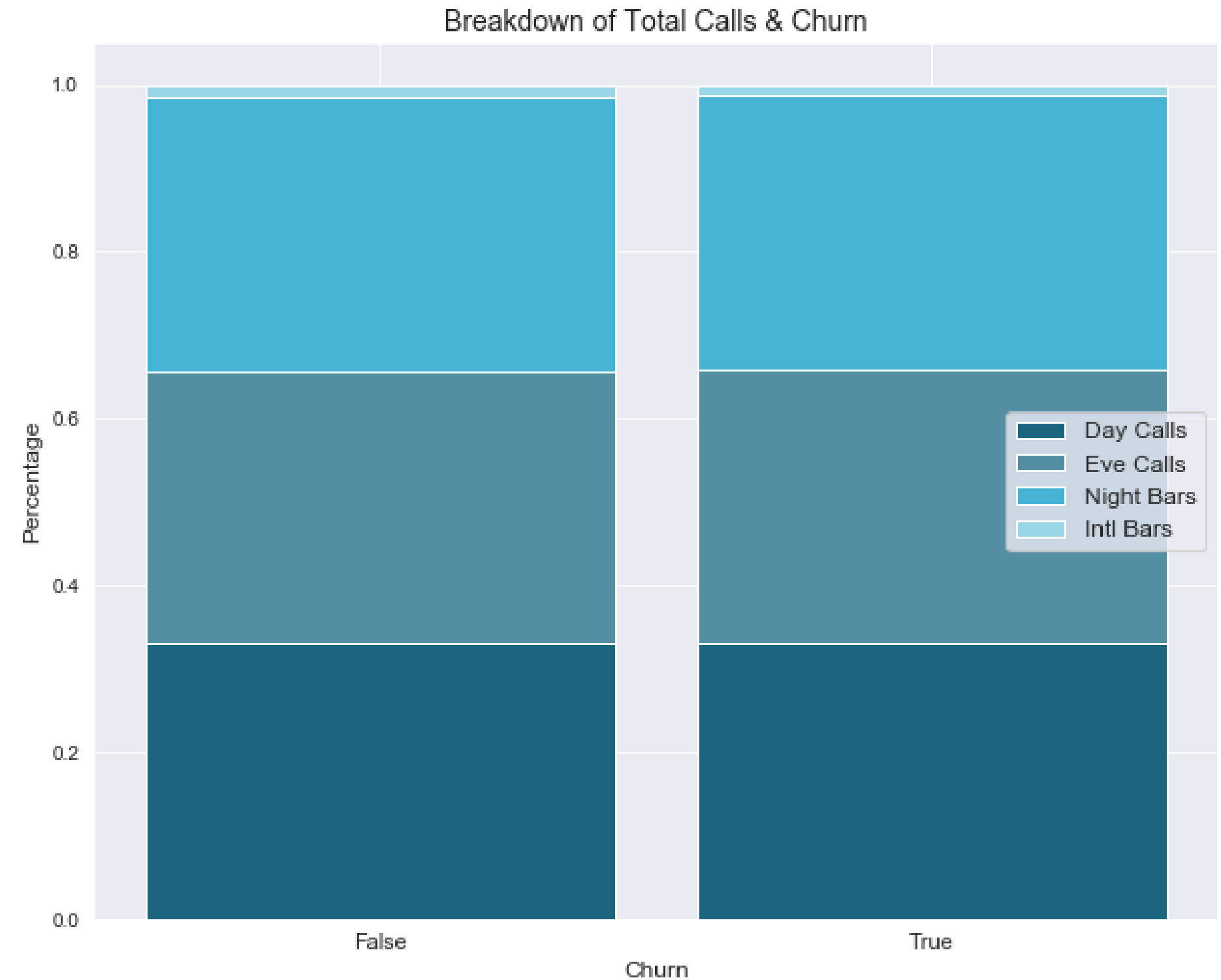
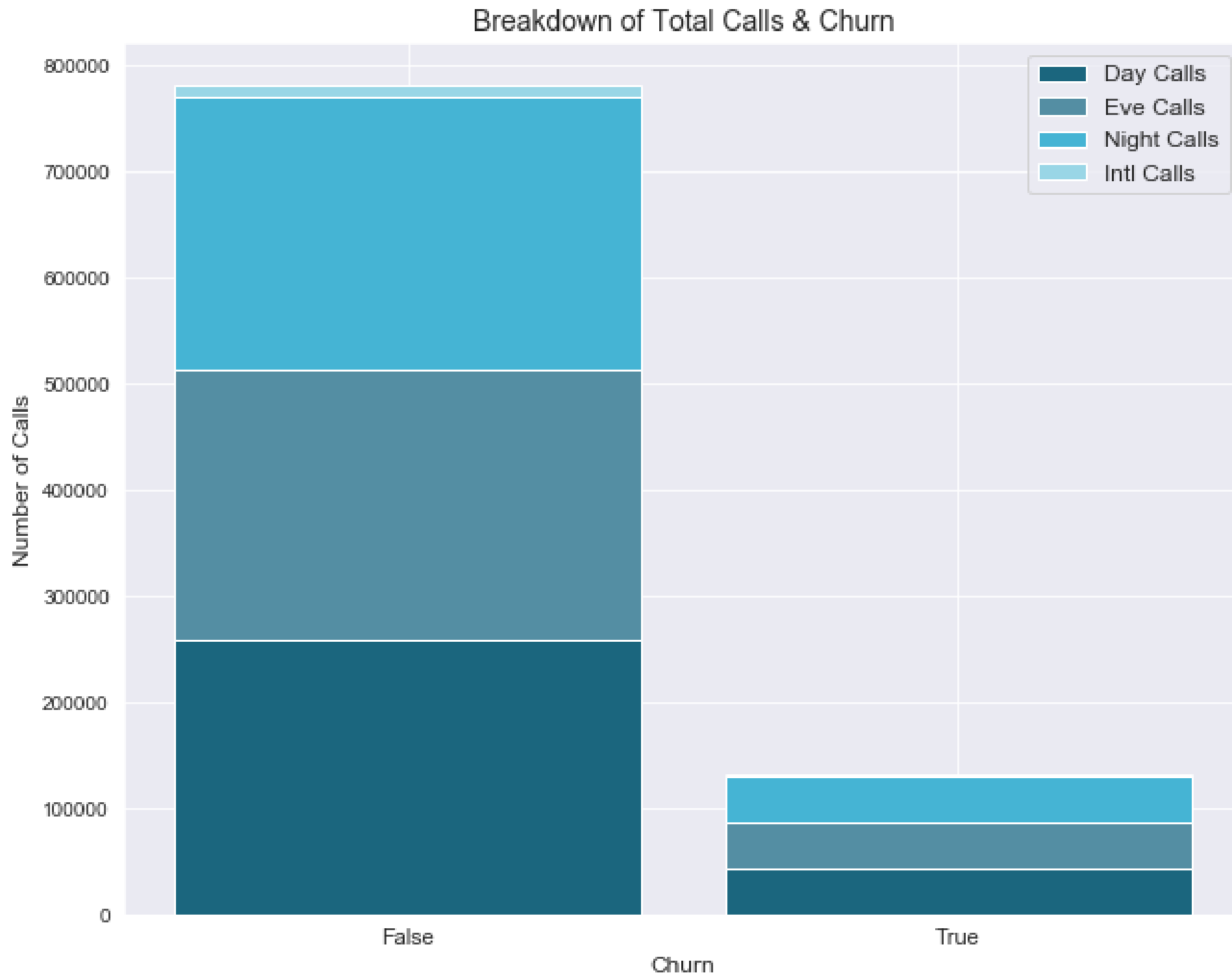
International Plan

Higher percentage of churn with international plan customers



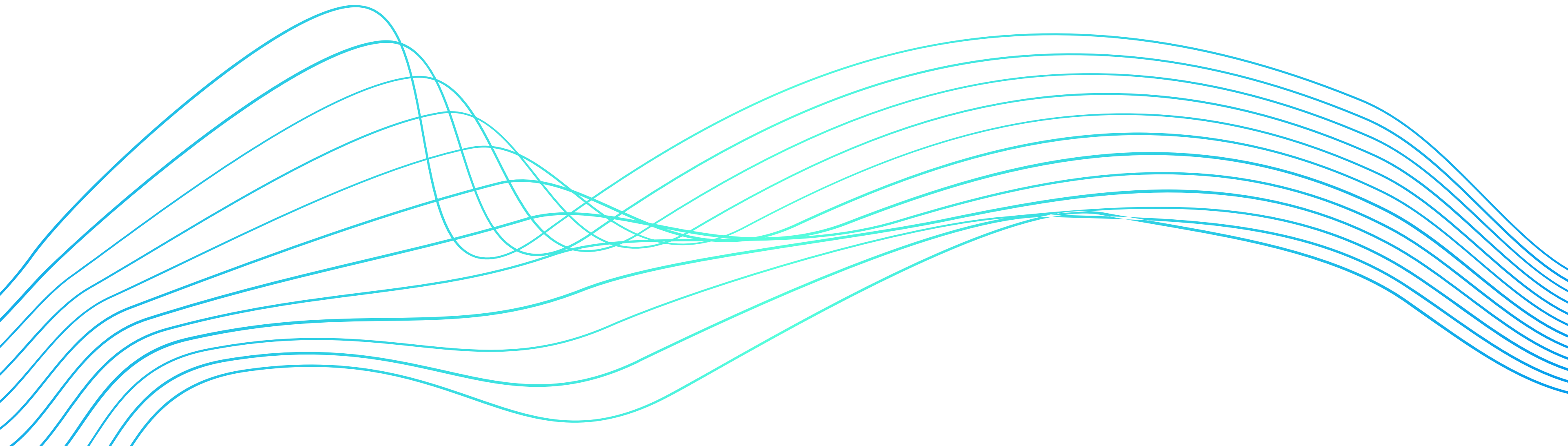
What kinds of calls are the churning customers making?

There is virtually no difference between churn and the percentage of day/eve/night/intl calls



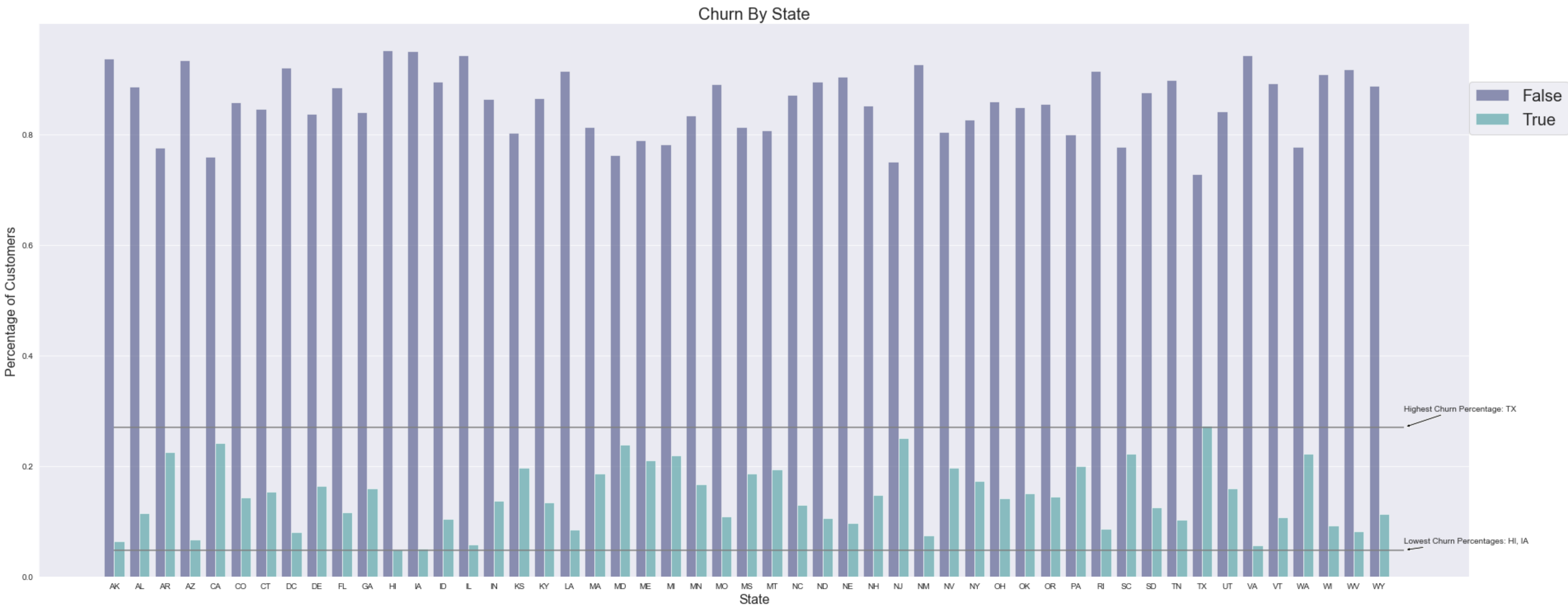
RECOMMENDATIONS

- Change the rates for international minutes.
 - If a customer has an international plan, they should have cheaper rates for international calls than a customer without an international plan



Churn & Customer Location

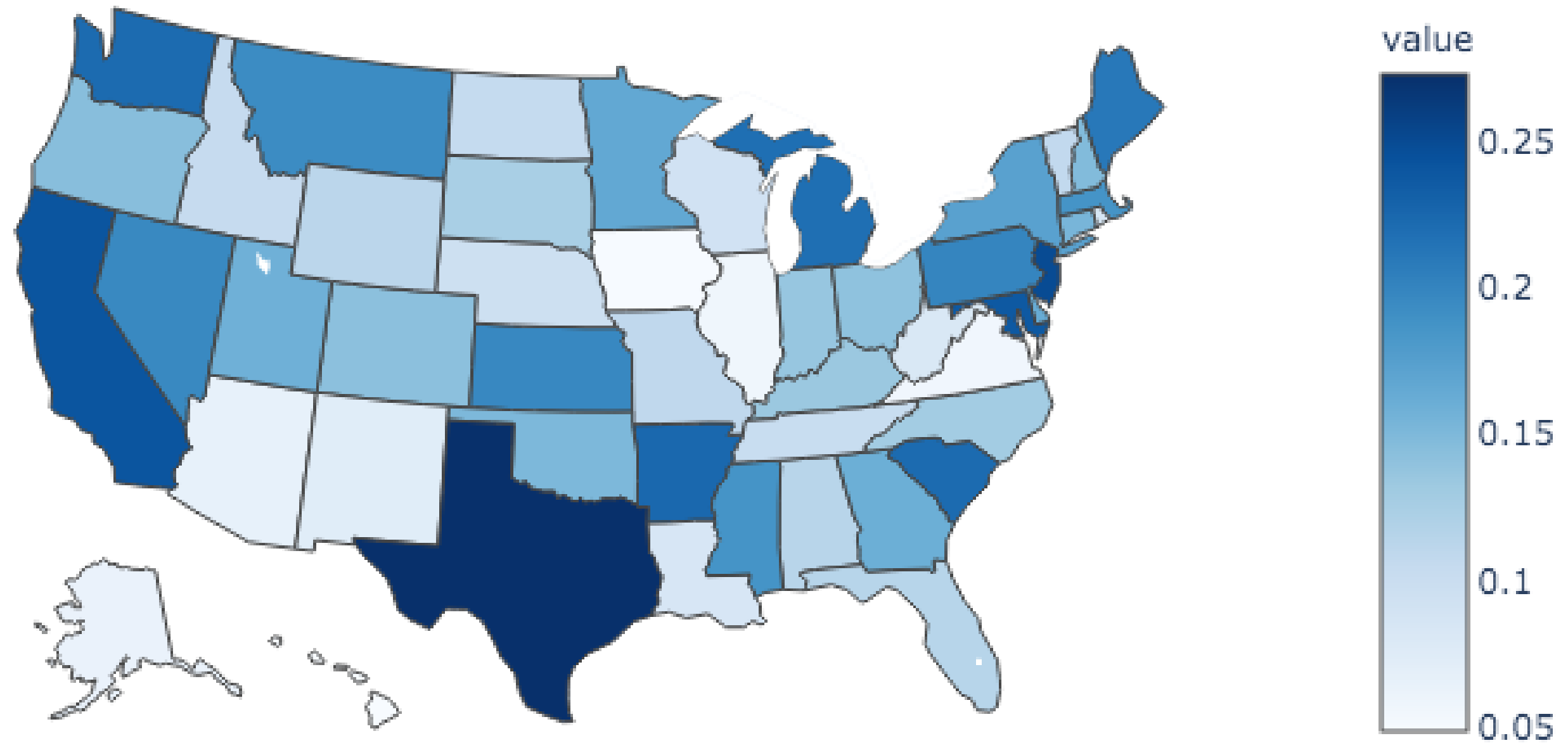
Highest churn in Texas | Lowest churn in Hawaii and Iowa



Churn & Customer Location

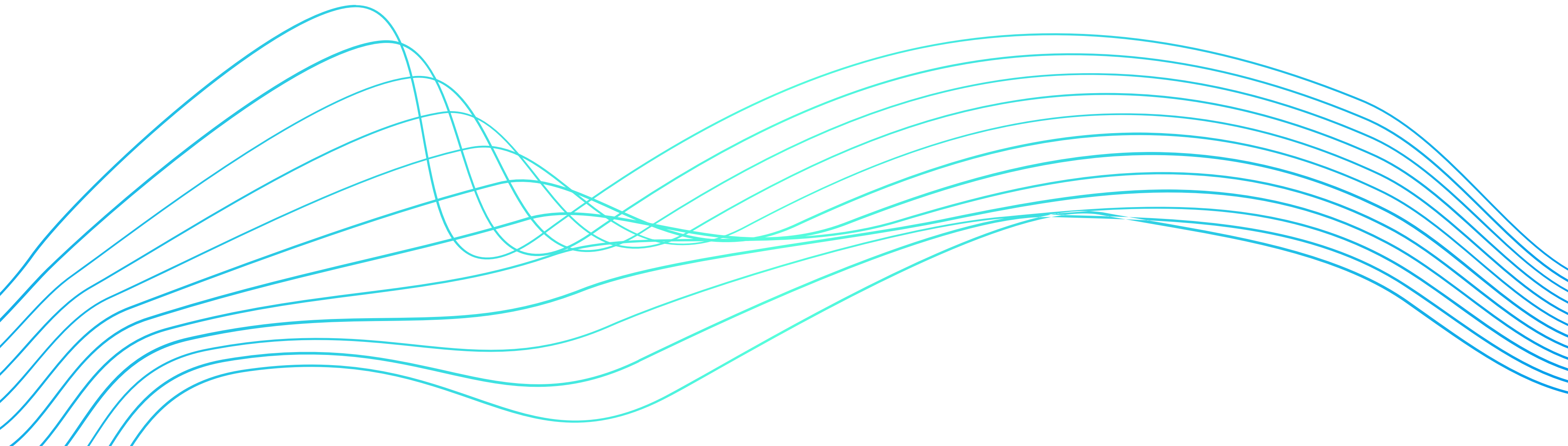
Highest churn in these states could indicate more competition

States with Highest Churn Percentage



RECOMMENDATIONS

- Look into competitors in states with high churn to see if they are offering introductory offers
- Look into the cell signal in these states to see if there are any dead zones contributing to the higher churn



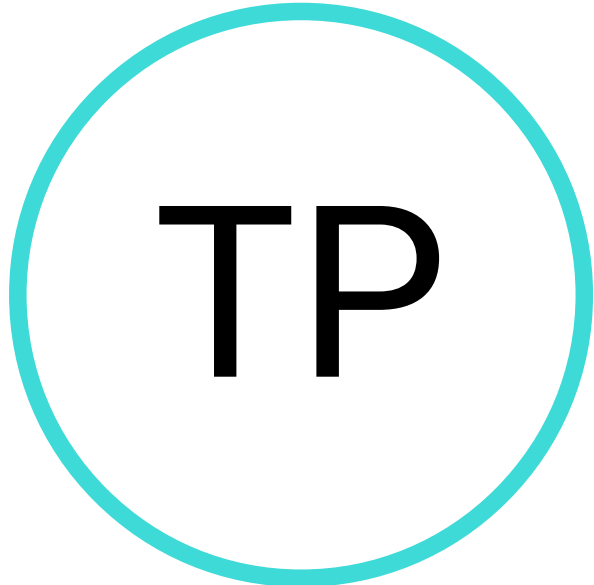
CONFUSION MATRIX ANALYSIS

FALSE NEGATIVE

We labeled them as 'not going to churn' when they actually churned.



FN



TP

TRUE POSITIVE

We labeled them as 'going to churn' and they did churn.

TRUE NEGATIVE

We labeled them as 'not going to churn' and they did not churn.



TN

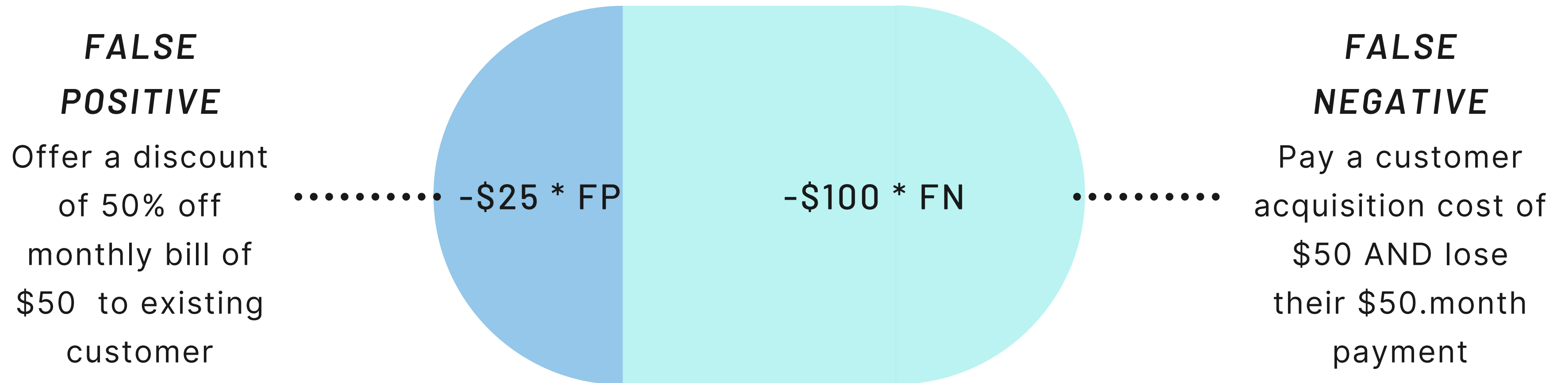


FP

FALSE POSITIVE

We labeled them as 'going to churn' but they actually stayed.

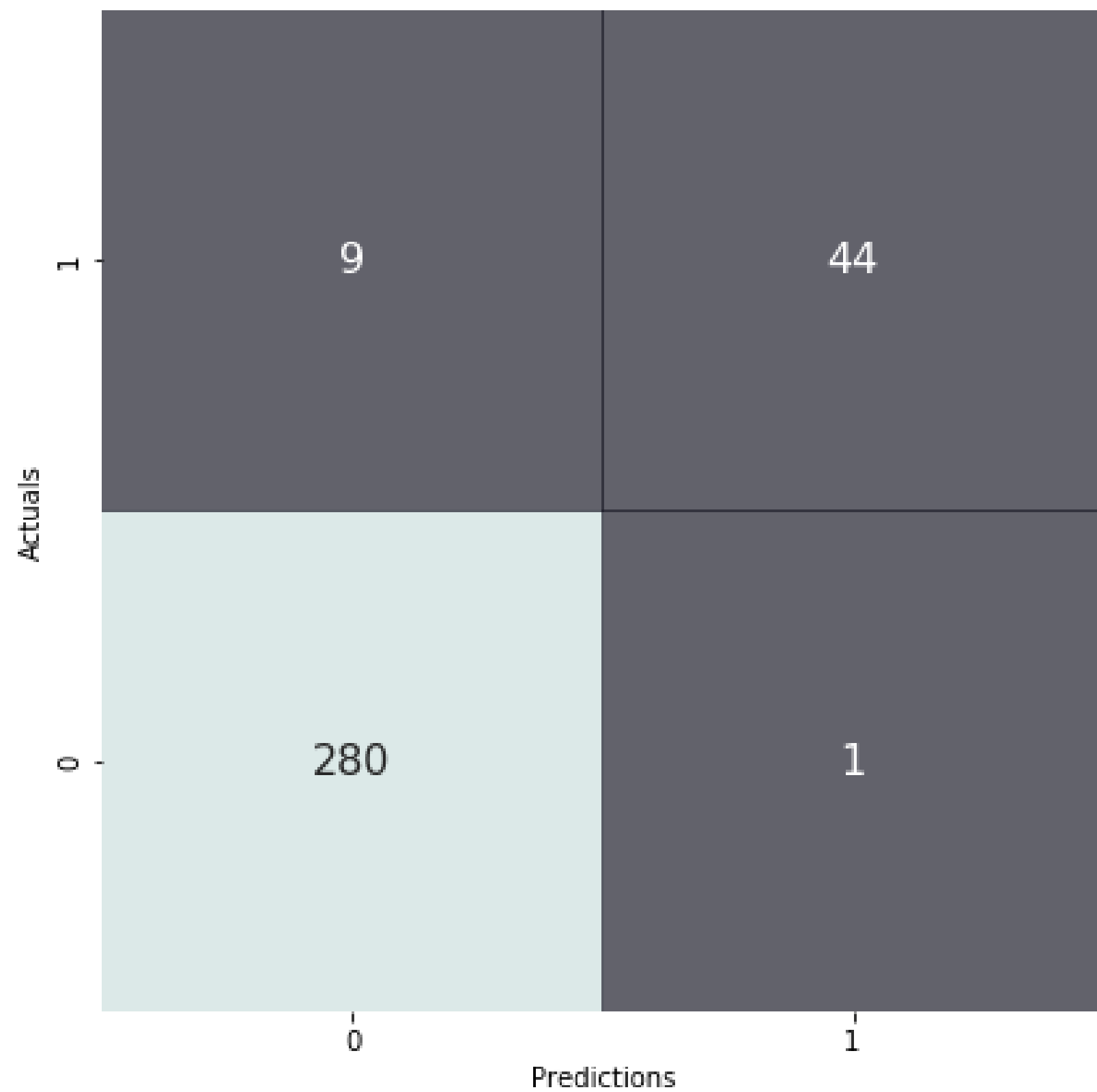
COST OF A FALSE POSITIVE VS FALSE NEGATIVE



BENEFIT OF A TRUE POSITIVE VS TRUE NEGATIVE

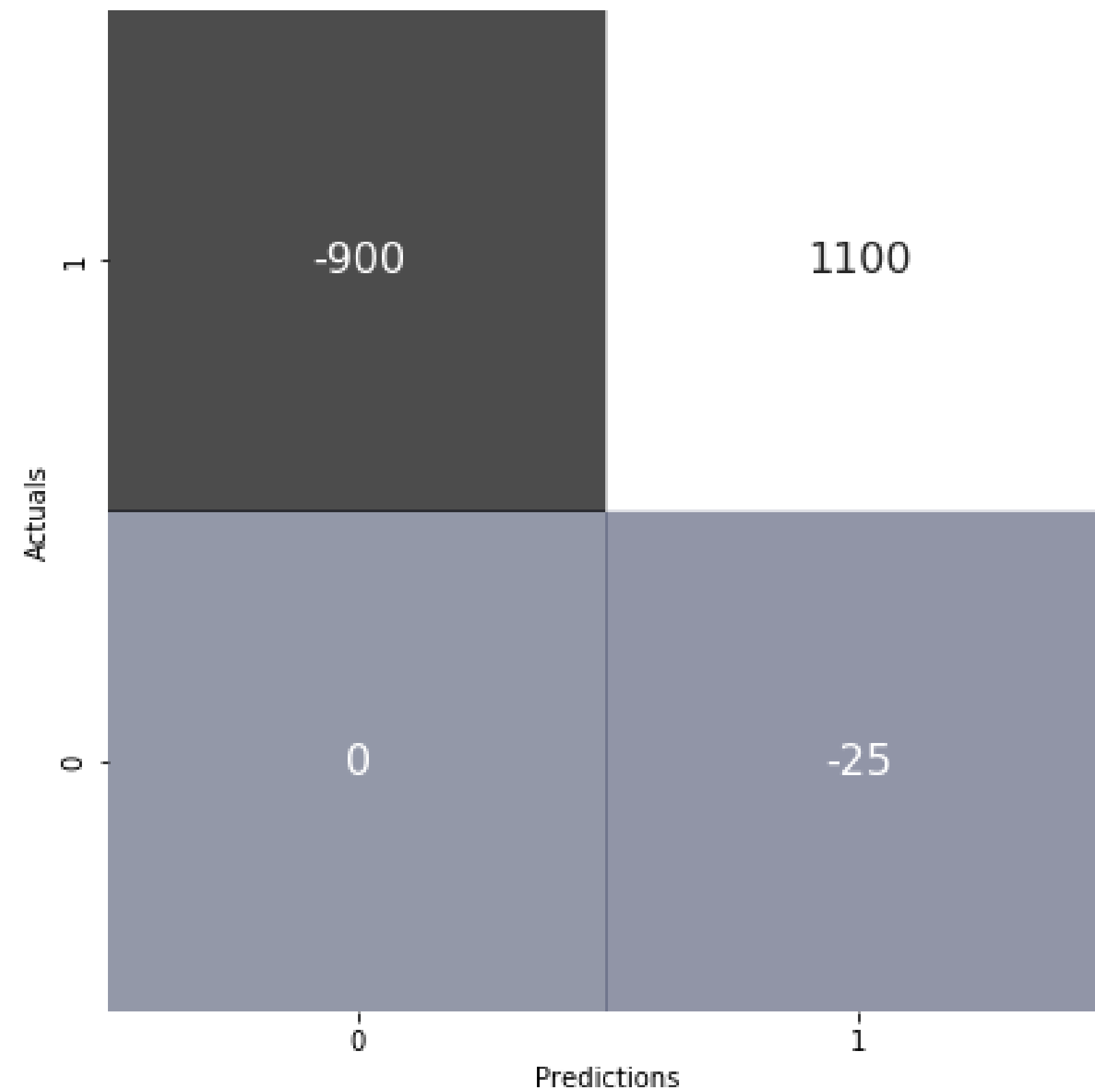


Validation Set Confusion Matrix



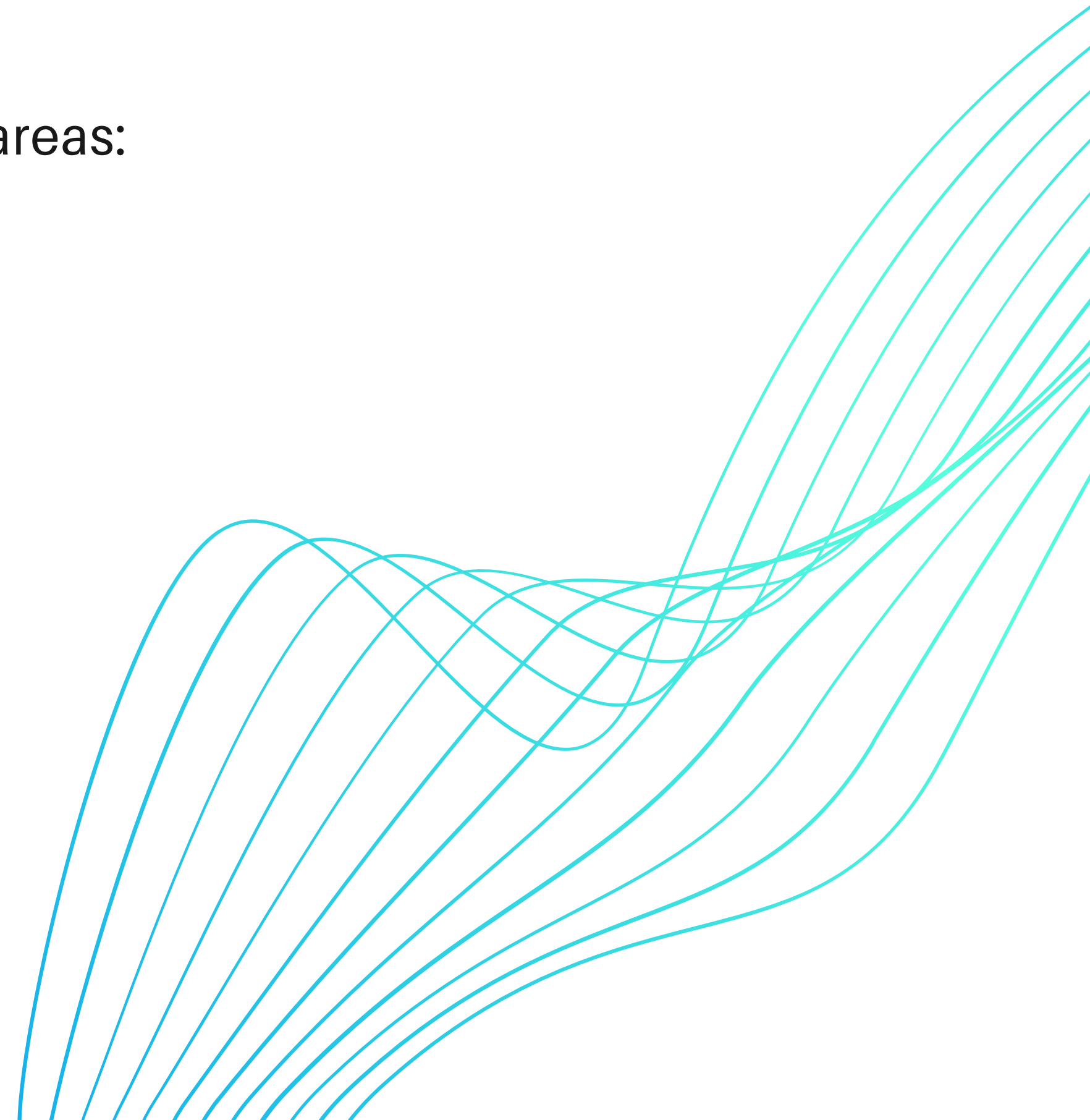
Validation Set Cost Benefit Analysis (\$)

Expected Value: \$0.52 per customer per month



CONCLUSION & FUTURE WORK

- In conclusion, we need to focus on 3 main areas:
 - customer service
 - international plan
 - competition
- Future Work
 - More data regarding competitors
 - More data on cell signal across the US
 - Look into voicemail data
 - Continue to improve model's recall



THANK YOU!

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github: <https://github.com/tiaplagata>

