



SYRIATEL CUSTOMER CHURN

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OVERVIEW





USE PREDICTIVE MODELING TO HELP SYRIATEL RETAIN CUSTOMERS

We'll sift through
customer data,
analyze trends, and
deliver a final
prediction



BUSINESS PROBLEM



SYRIATEL IS LOSING MONEY BECAUSE OF CHURN

Losing 15% of customers



A steady loss of customers is causing SyriaTel to suffer financially

Deploy predictive modeling



Our client needs us to build a machine learning model to be able to predict which clients are going to churn

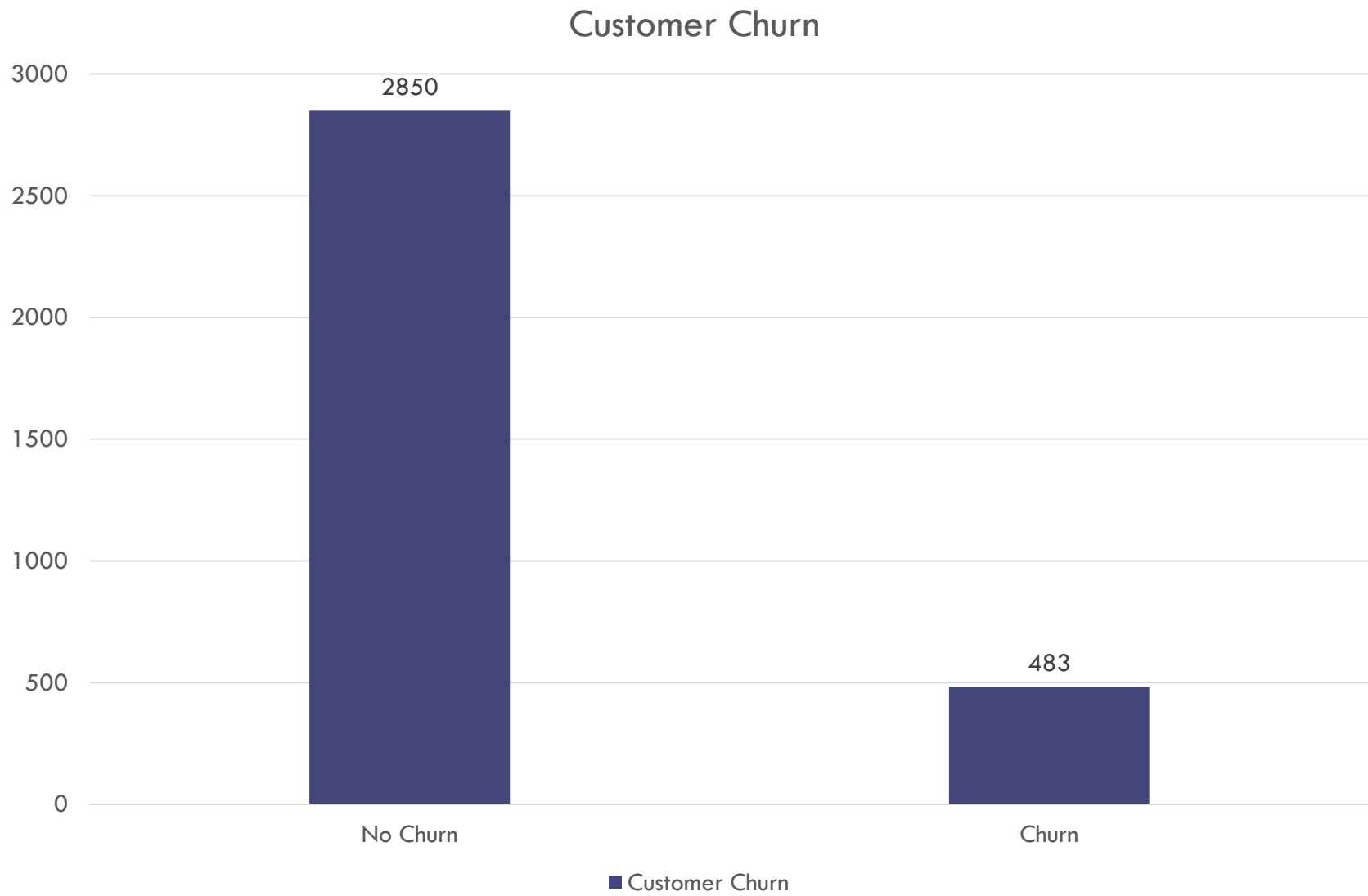
Identify and remedy



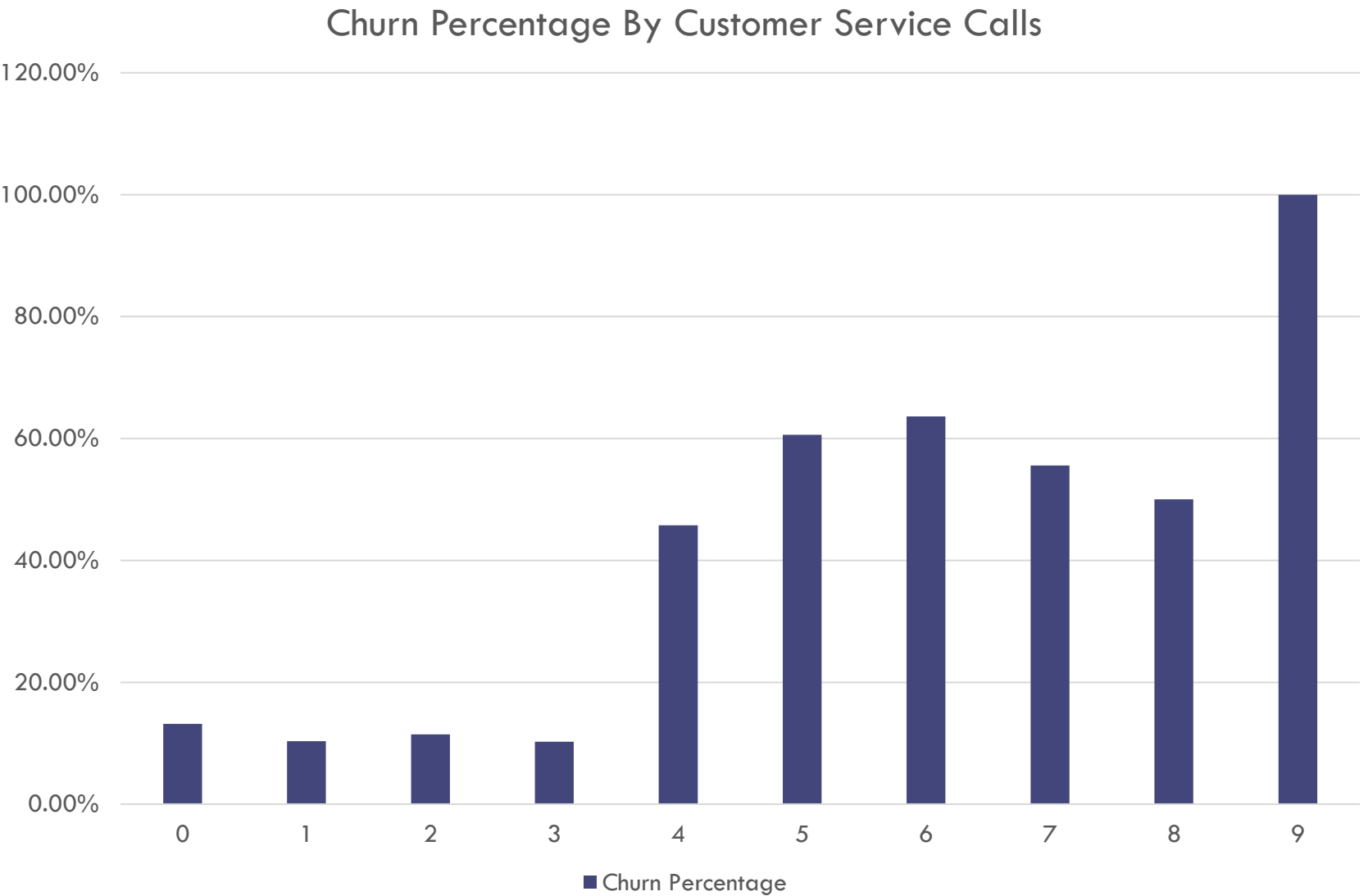
After identifying which customers are prone to churning, the client will then reach out to them, remedy the relationship, and retain the business

EXPLORATORY DATA ANALYSIS

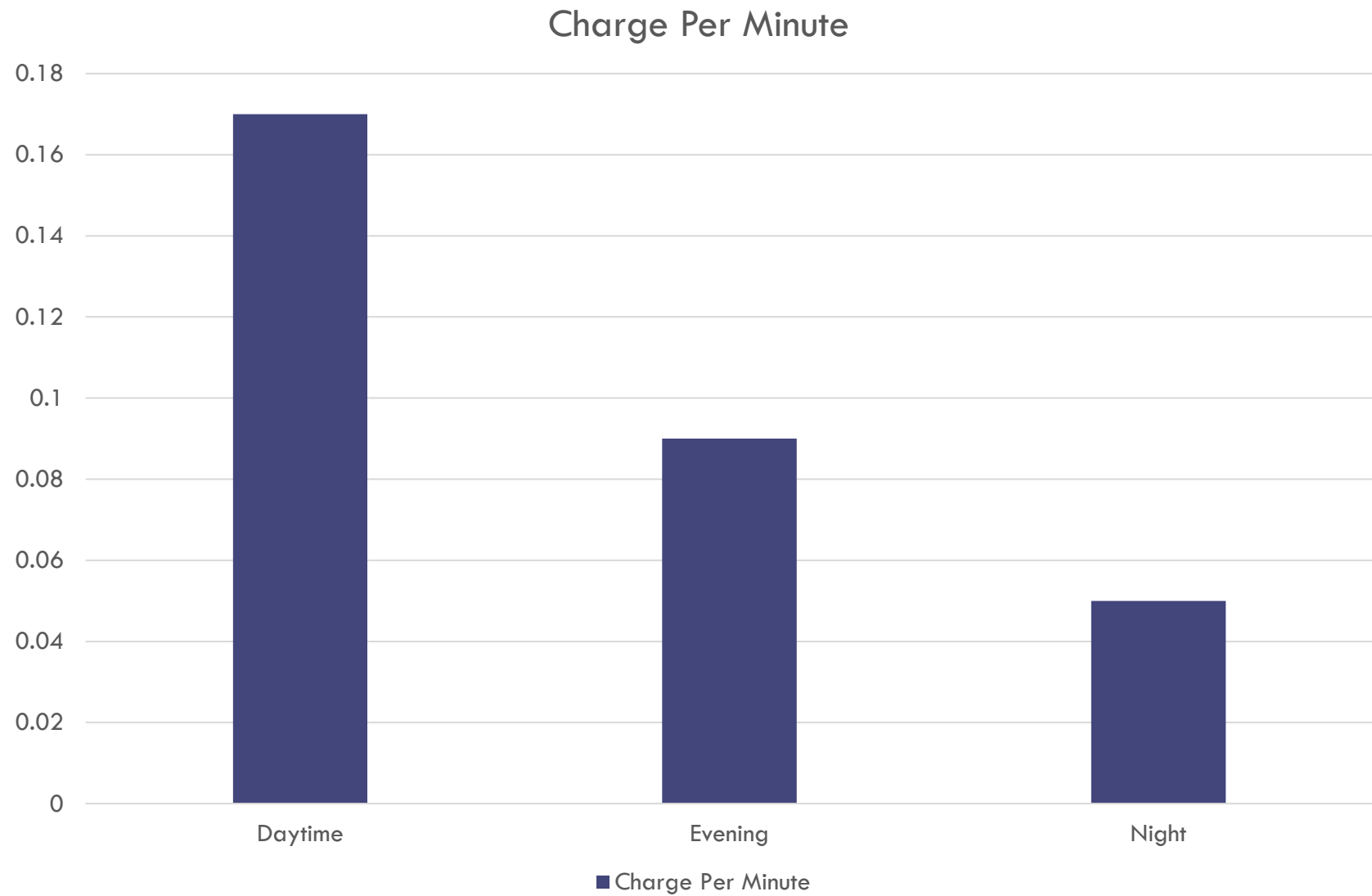
IMBALANCED DATA SET



MORE CUSTOMER SERVICE CALLS, MORE CHURN

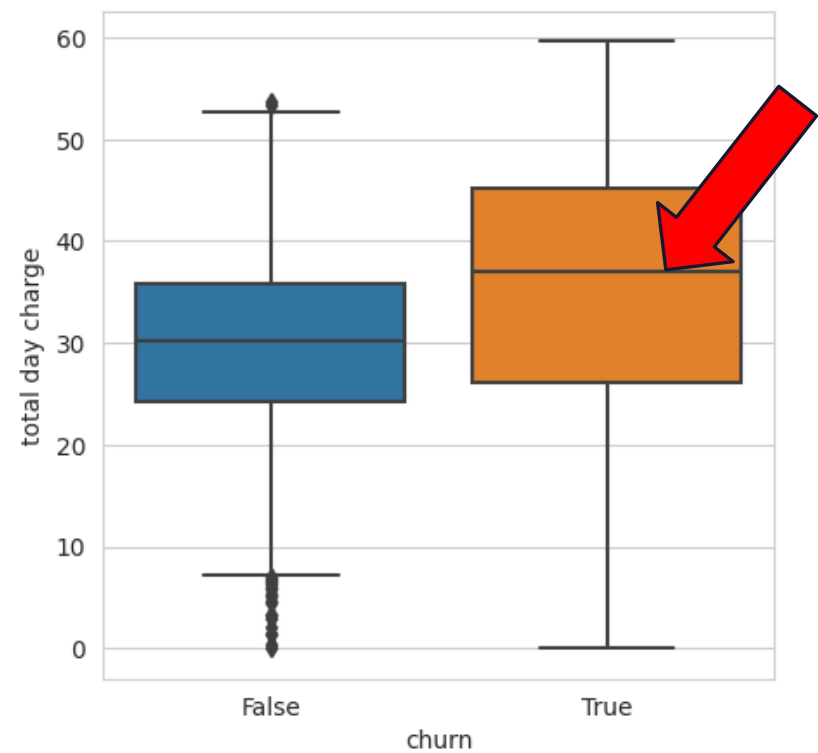


HIGHER CHARGES LEADS TO MORE CHURNING

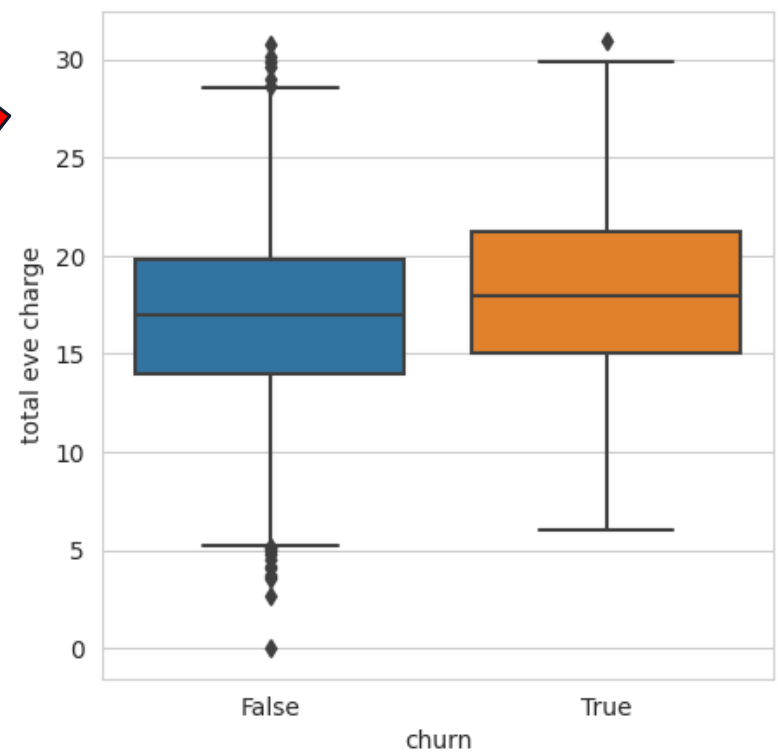


DAYTIME CHARGES THE CULPRIT

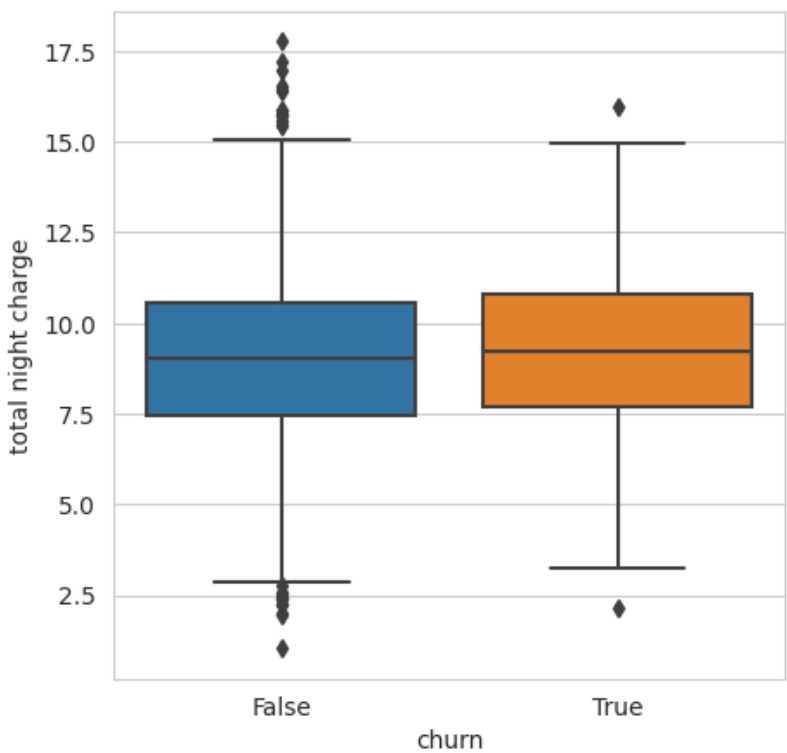
Day Charges and Churn



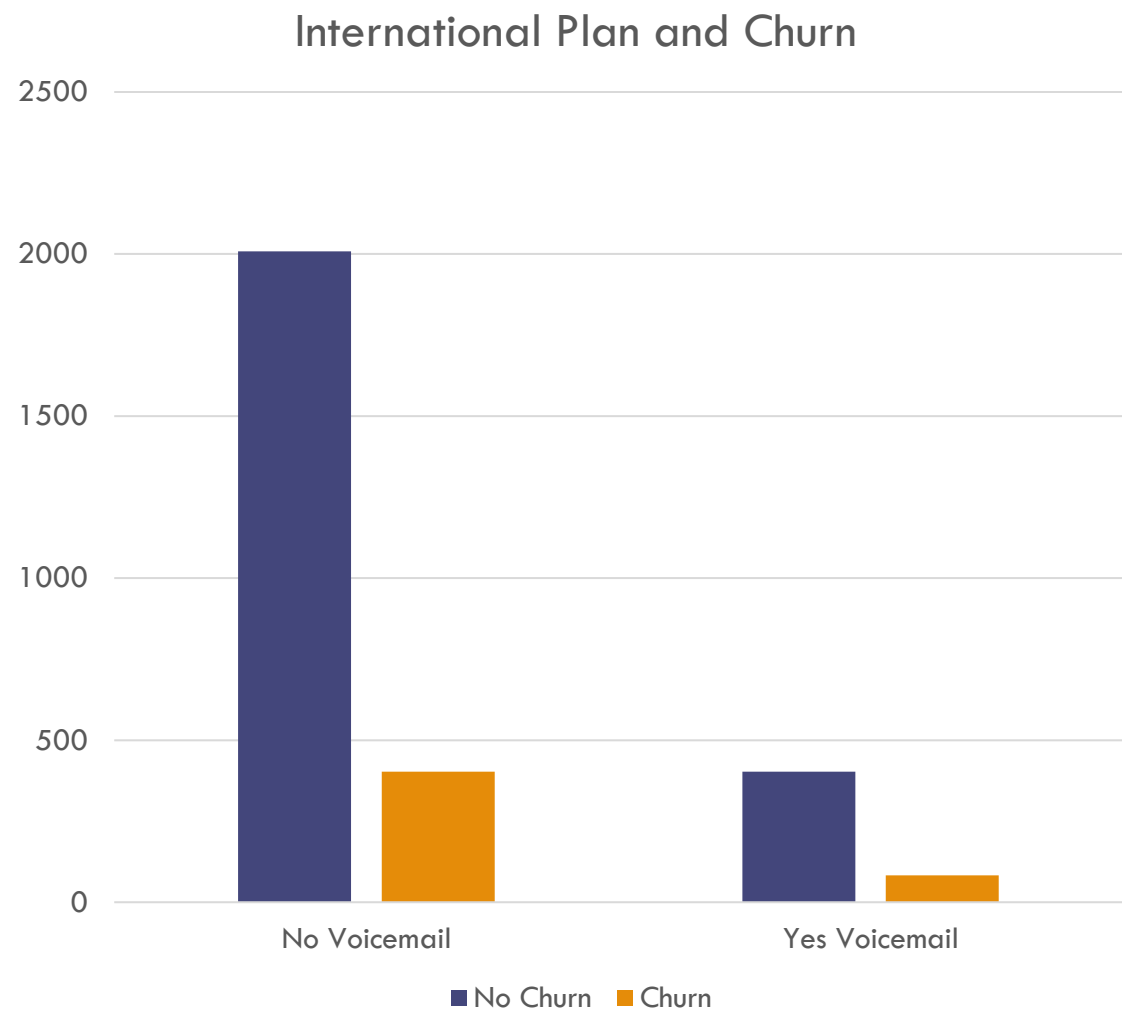
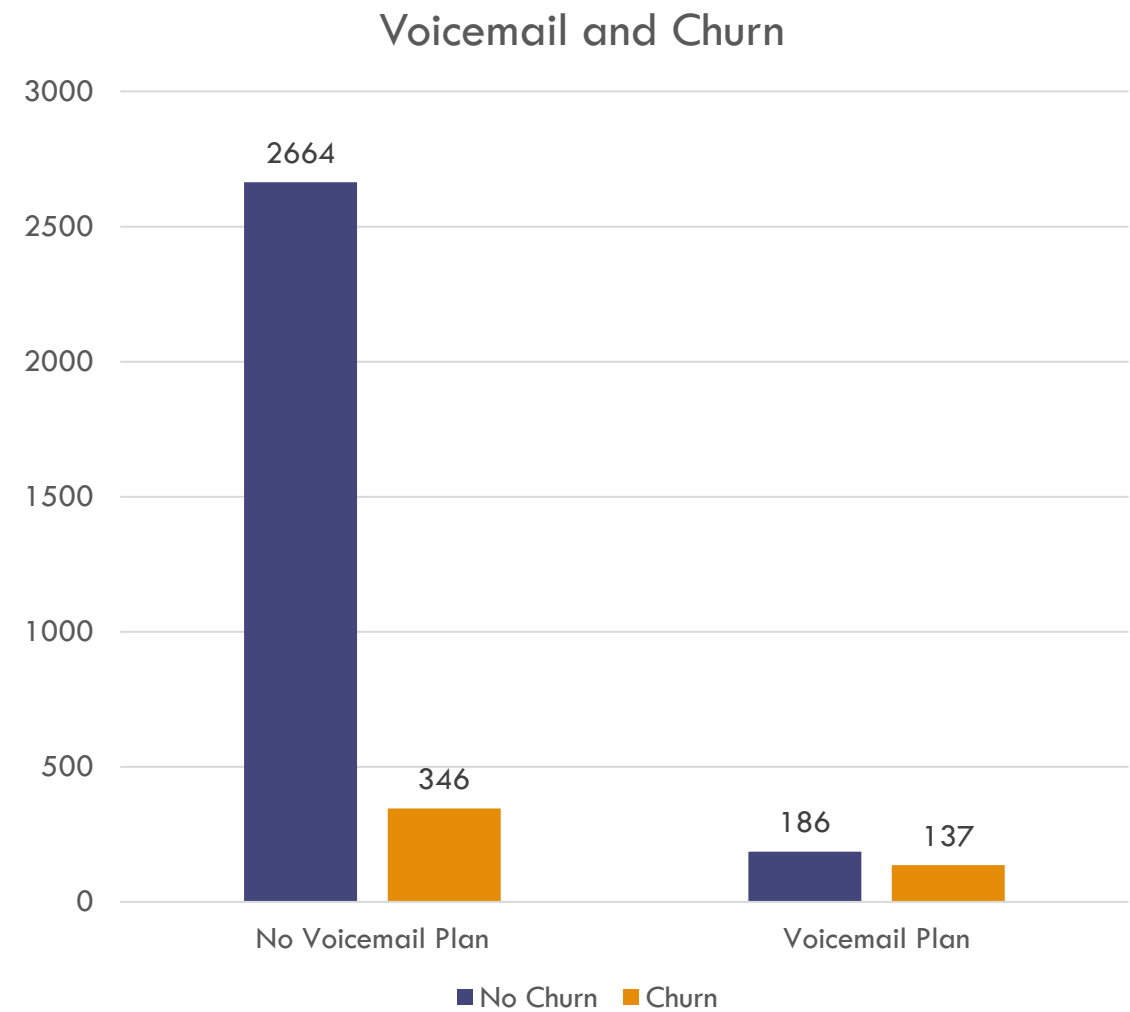
Evening Charges and Churn



Nighttime Charges and Churn



INTERNATIONAL PLAN AND VOICEMAIL PLAN



MODELING

RECALL: TOTAL AMOUNT OF TRUE POSITIVES TO TOTAL POSITIVES

True Positive Our model correctly predicts that a customer churned	False Positive Our model predicts that a customer churned, but really the customer did not churn
False Negative Our model predicts that a customer did not churned, but really the customer churned	True Negative Our model correctly predicts that a customer did not churn

RECALL: TOTAL AMOUNT OF TRUE POSITIVES TO TOTAL POSITIVES

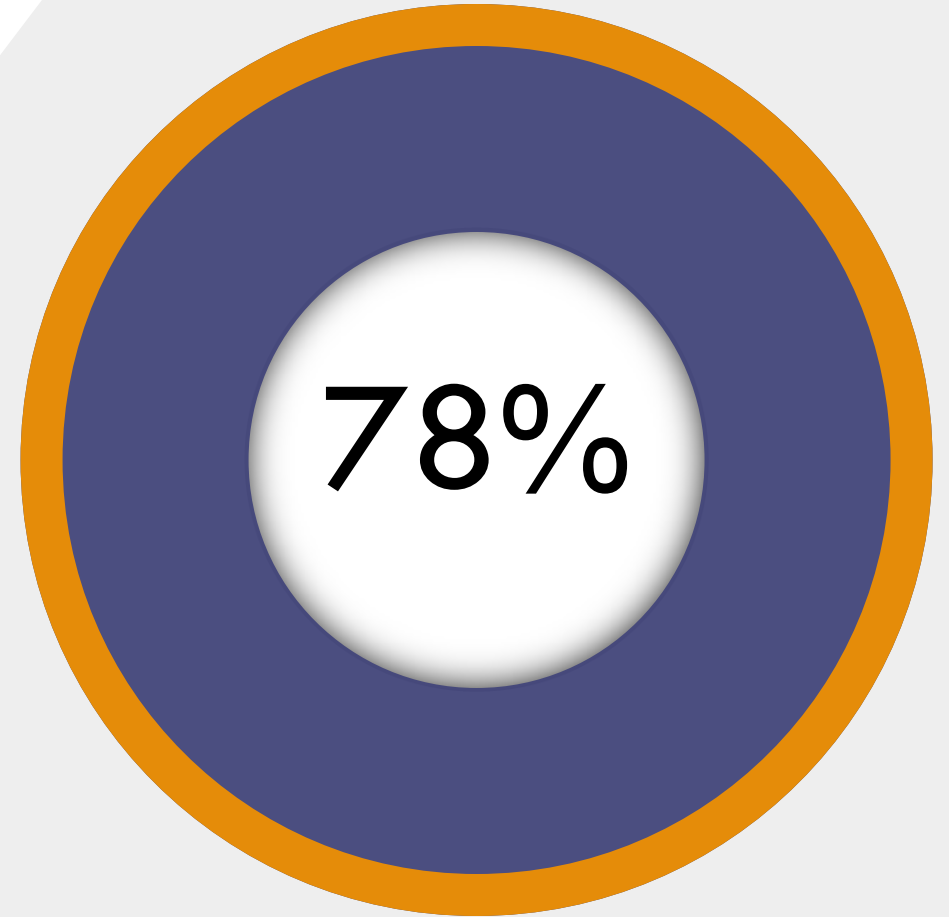
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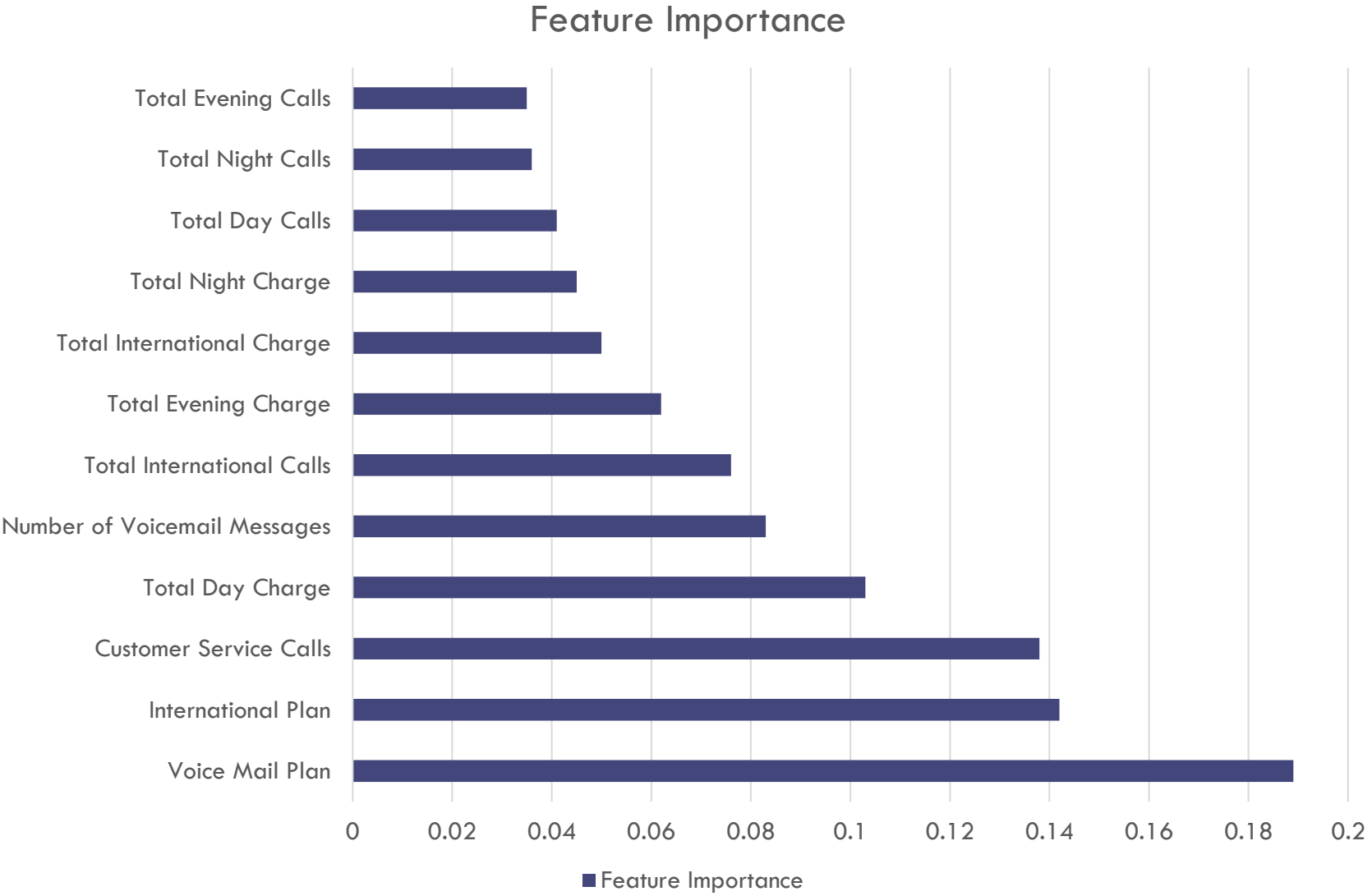
$$\textit{Recall} = \frac{\textit{True Positives}}{\textit{True Positives} + \textit{False Negatives}}$$

MODEL SCORE

Our model had a recall score of 78% and was tested on totally unseen data



FEATURE IMPORTANCE



CONCLUSION

USE THE MODEL TO PREDICT CHURN

Model can identify who will churn



Our model was able to predict which customers will churn with a recall score of 78%

International and voicemail discounts



Our EDA and feature importance both revealed that international plans and voicemail plans are drivers of churn; SyriaTel should offer discounts in these areas

Offer daytime charge discount



Daytime charge with the highest charge/minute was also a big driver; SyriaTel should try to offer discounts to those predicted to churn



THE END

