Predicting Customer Churn: SyriaTel Telecommunications

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Overview

Context

- Current churn rate of nearly 15%
- Customers with the company less than 243 days

Purpose

- Based on the data being collected, predict which customers are churn candidates

Key Metric

- False negatives costly
- Optimize for Recall

FSM - Decision Tree Classifier

Highest Importance:

- Customer Service Calls

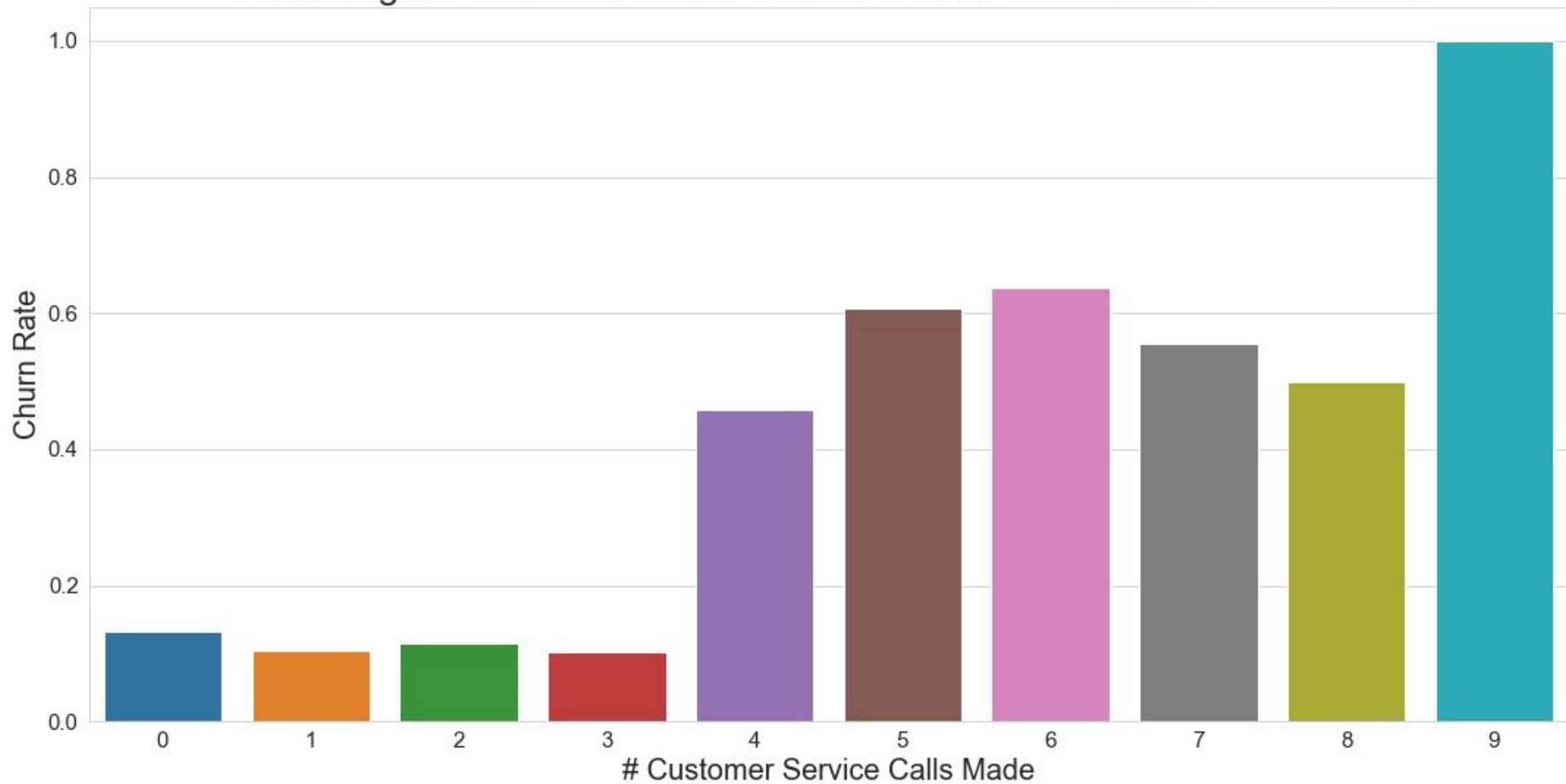- International Plan Holders

- Daily Minutes/Charge
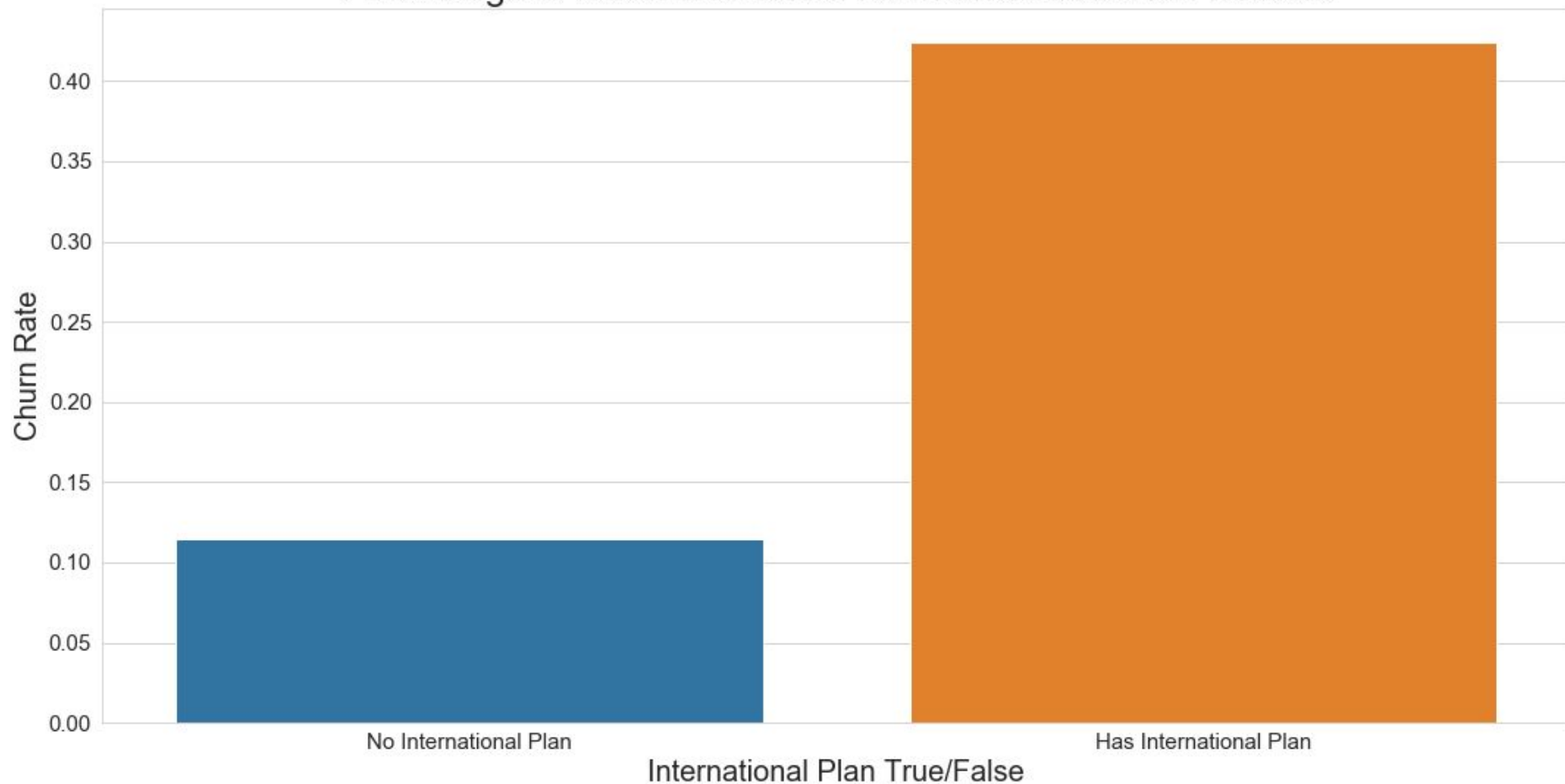
Little-No Weight:

- State

Recall Score: 0.64

Feature Visualization

Percentage of Customer Churn based on Num. of Customer Service calls

Percentage of Customer Churn for International Plan Holders

Distribution of Total Day Charge

Results and Application

Final Model: Gradient Boosting Classifier

Model Tuning:

- Dropped States

- Aggregated total charge features

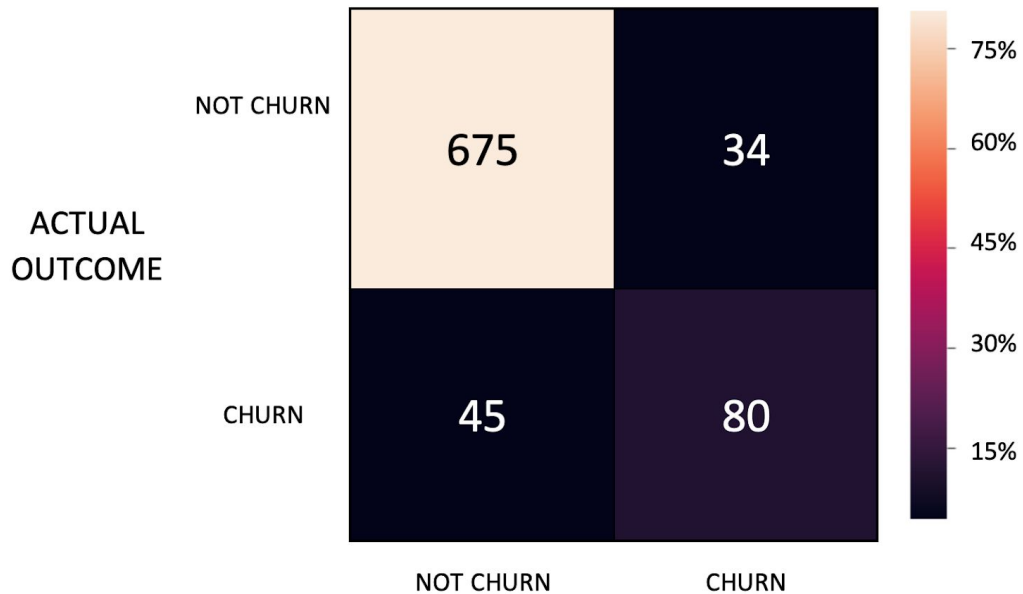- Balanced & Scaled Data

- Tuned to maximise recall

Highest Feature Importances:

- Total charge

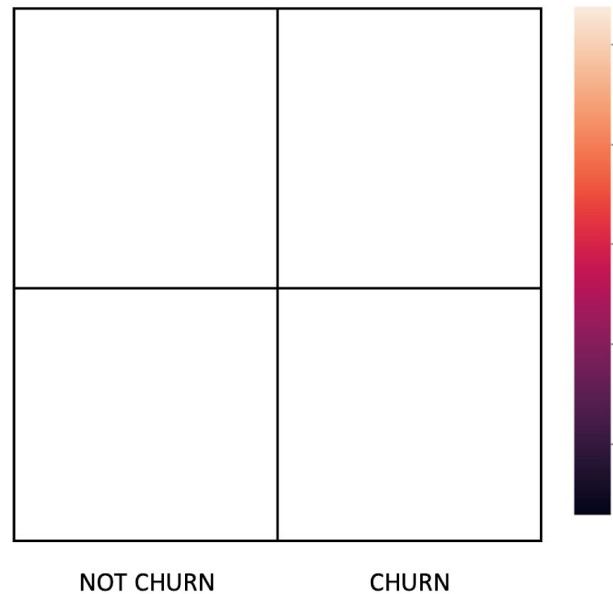- International plan holders

- Customer service calls

Recall Score: 0.888
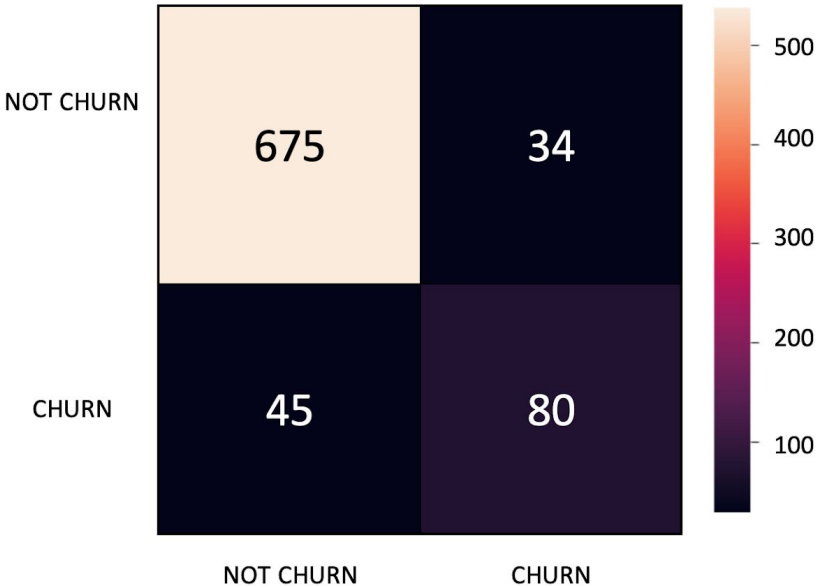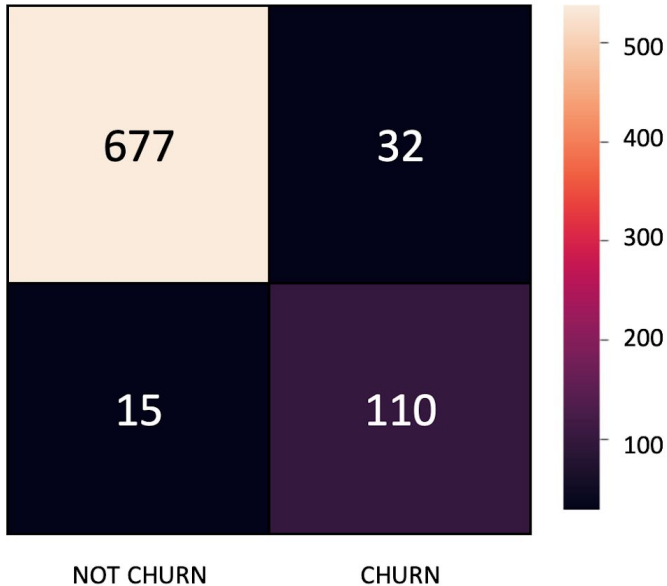
Modeling Results

INITIAL MODEL

FINAL MODEL

ACTUAL OUTCOME

NOT CHURN: 675 | 34

CHURN: 45 | 80

NOT CHURN | CHURN

MODEL PREDICTION

Confusion Matrices: FSM vs. Final
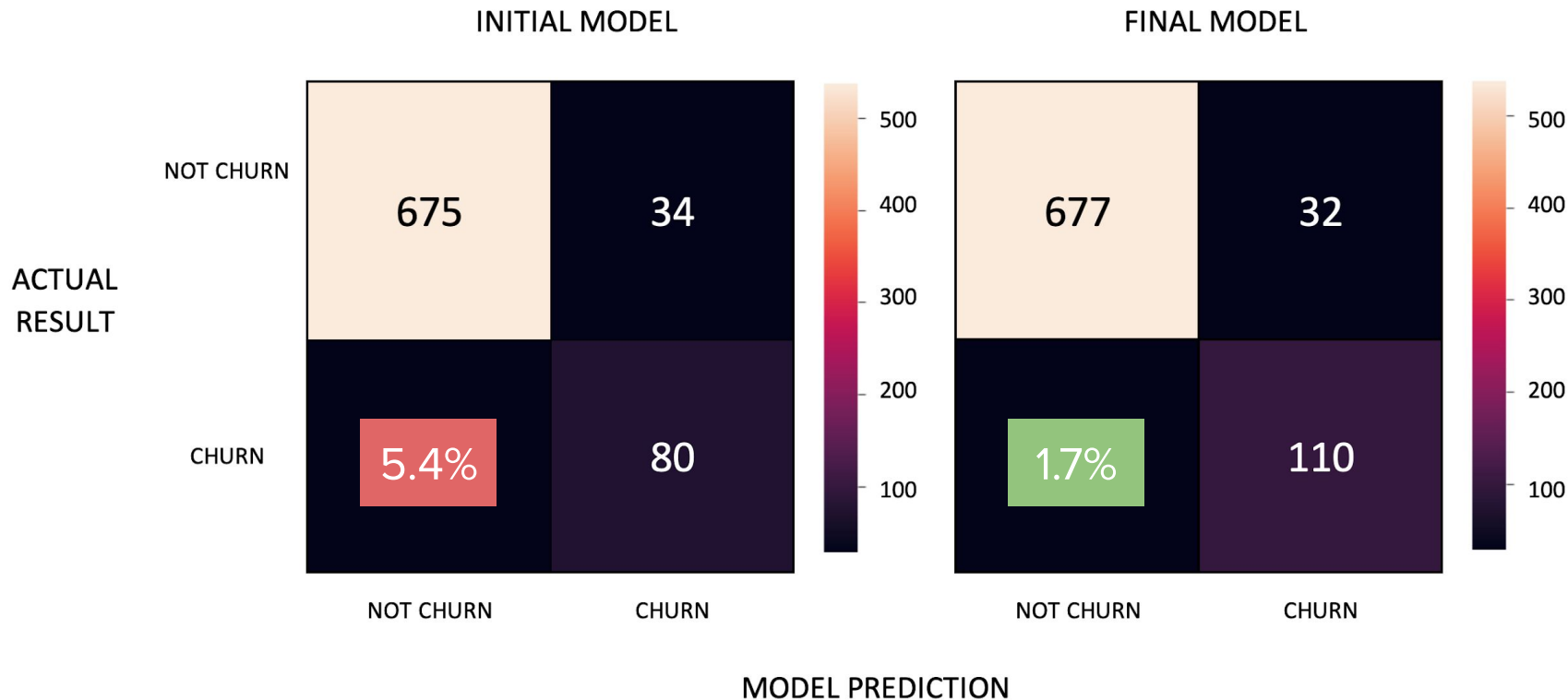
Next Steps

- Cost analysis of customer acquisition and retainment
- Investigation into how to better assist customers to reduce the need to call customer service
- Investigation into retention efforts for international plan holders (currently 42% churn)
- Investigate potential trends in high churn states
- Investigate ways to incentive customers with total day chargers over $55 (currently 100% churn)

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