Discern Your Churn:

Predicting Expected Customer Churn

Business Context

SyriaTel a telecommunication company interested in knowing:

- Expected customer lost
- What type of customers are most likely to leave?

Value:

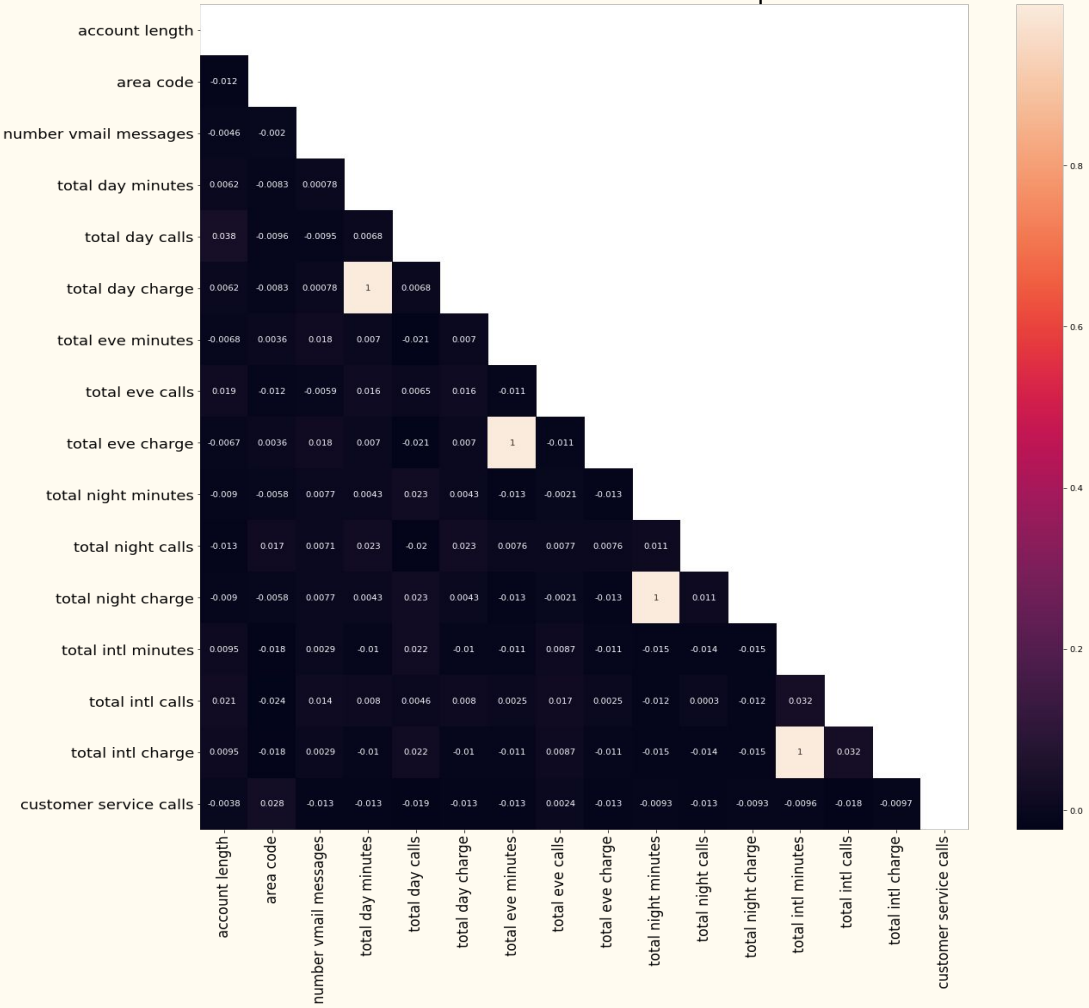
- Revenue expectations
- Changes to phone plan options to keep customers
- Improvements to certain departments/services
- Preemptively reach out to customers likely to leave

Data Understanding

- Data collected from SyriaTel Customer Churn data set from Kaggle
- Usage and plan information for each customer and if they had left (churn)

Features	Target
Total Call Minutes	Churn
Area Code, State of customer	
Account Length	
Customer Service Calls	
Voicemail Plan	
International Plan	

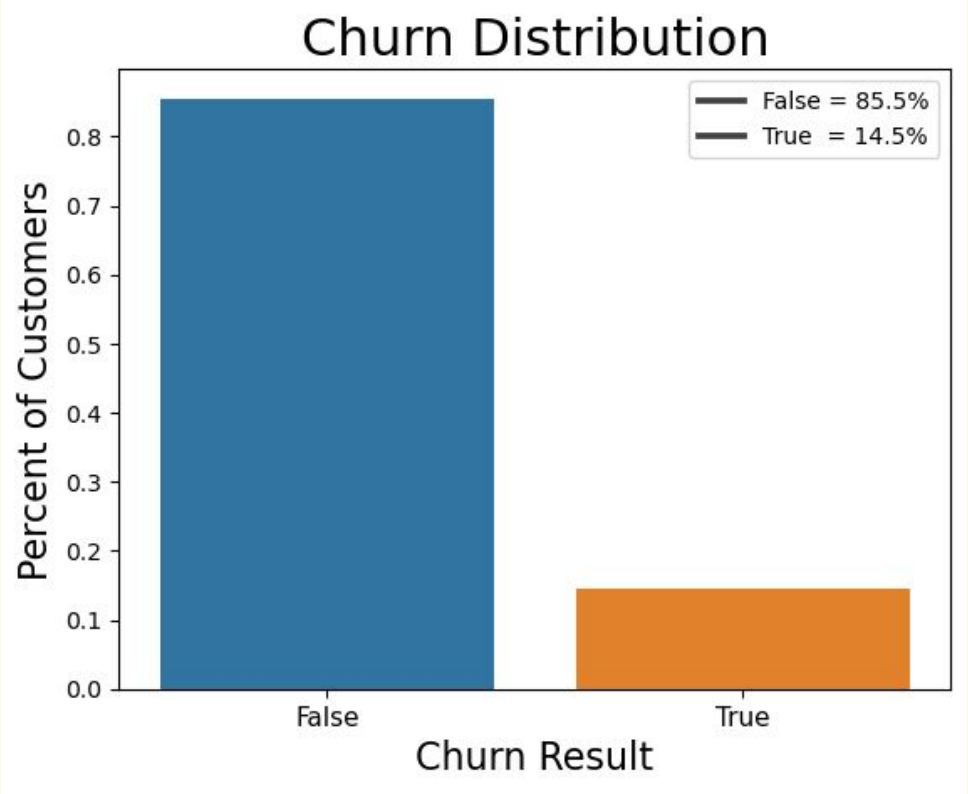
Numeric Predictors Heat Map



Class Imbalance... Oh No!

Vast majority customers are staying which is good for SyriaTel but more difficult for model prediction

There would be about an 85% of predicting the false class and 15% chance of predicting the true class.



Machine Learning Model

Tested several ML model types for optimal predictions

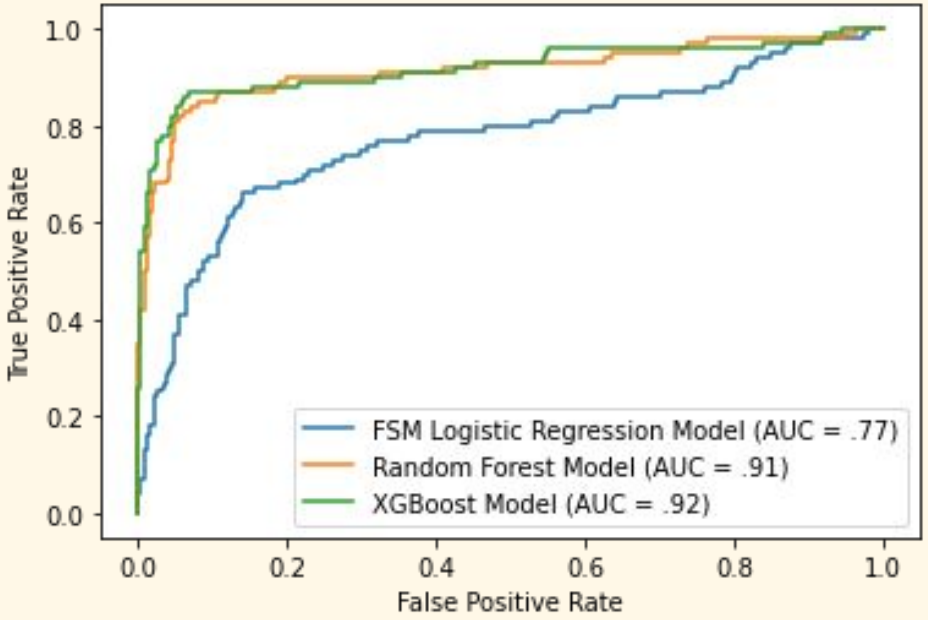
XGBoost Model yielded best results

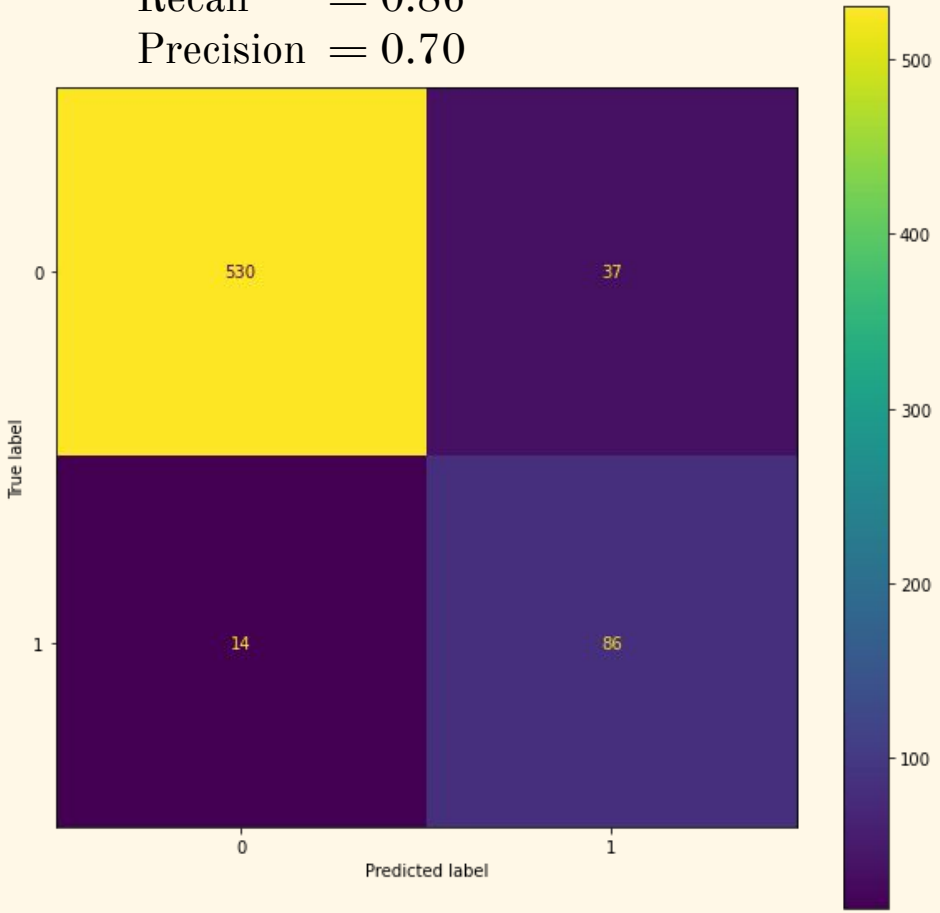
‘Recall’ was most valued metric

- Most concerned with who may be leaving
- Error on overestimating would lead to reaching out to more customers

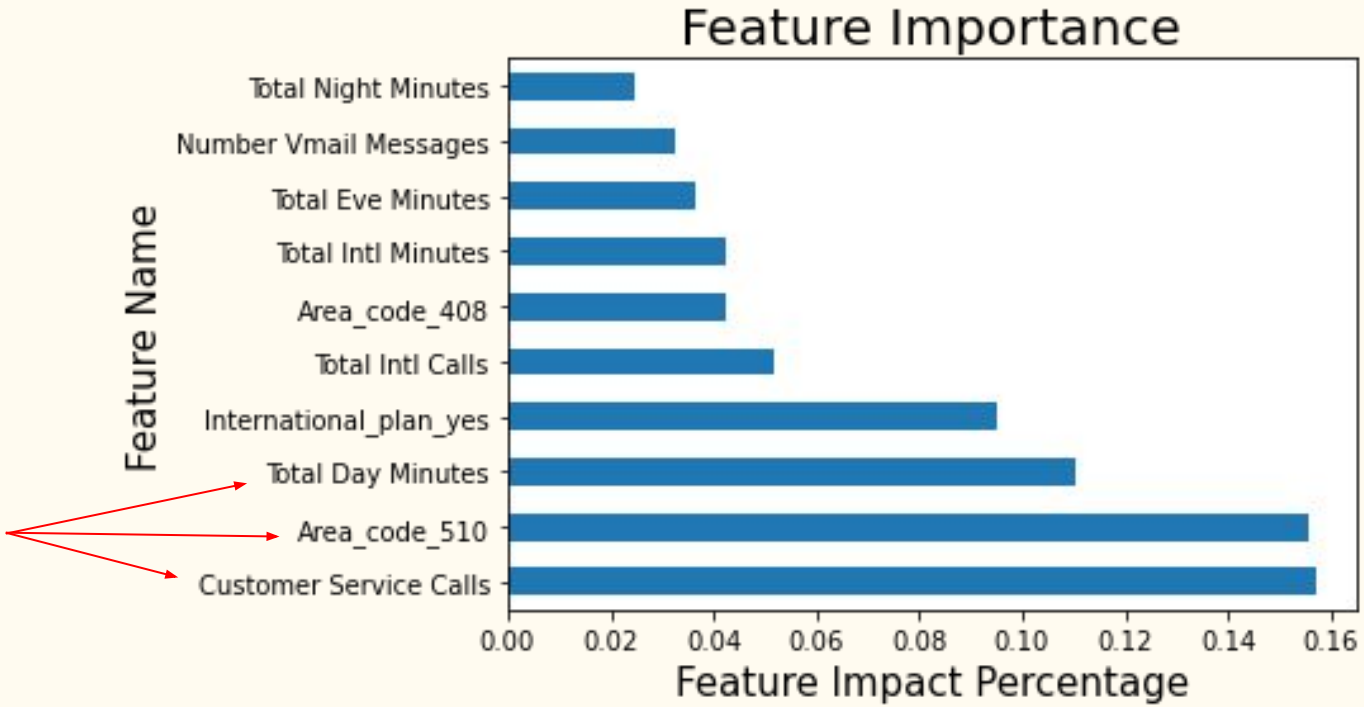
Visualizations

For “Class 1” (Churn)
Recall = 0.86
Precision = 0.70





Pay Attention for Retention: Impact of Data Inputs



Predictive Model Recommendations

- Churn Prediction -

  Can set expectations on upcoming revenue using our model

- Total Minutes Impact -

  Phone plan options to accommodate those with higher usage (package, unlimited)

- Total Day Minutes Impact-

  Higher charge rate for day minutes may be driving away customers (package options)

- Customer Service Calls Impact -

  Improve customer service experience

- Area Code 510 Impact -

  Look into specialize service to this region