

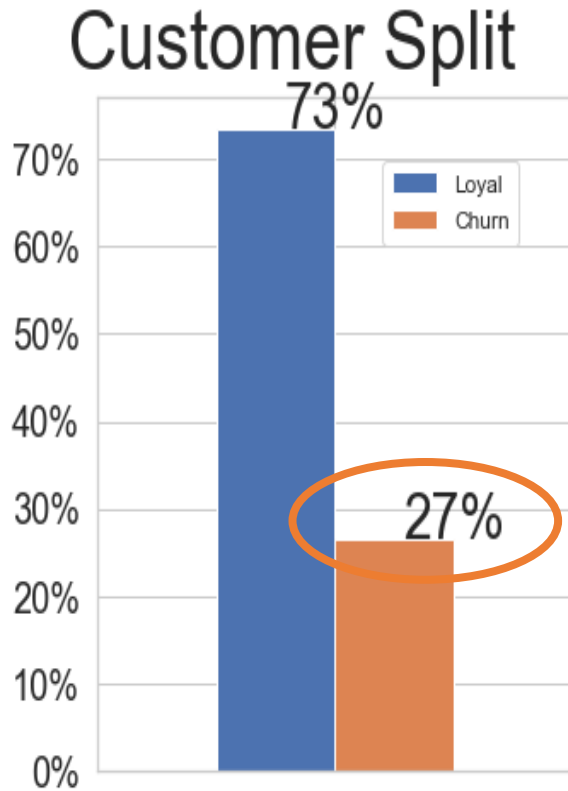


Telco

PREDICTING
CHURN

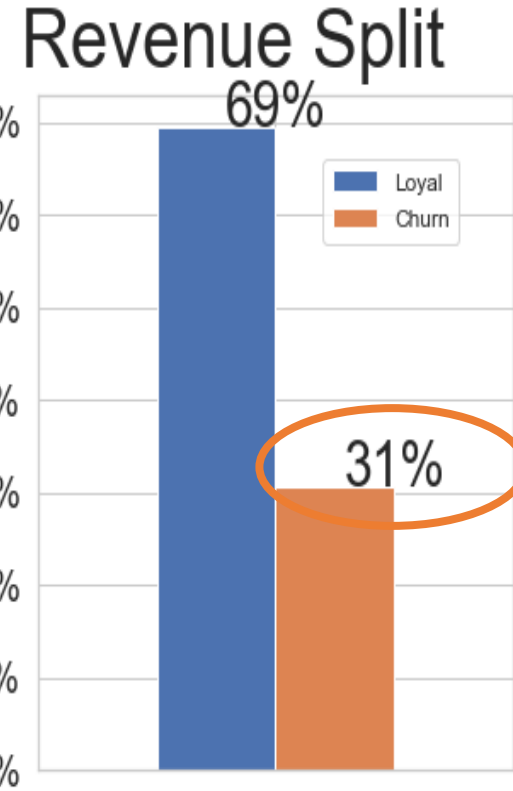


Telco CEO Frustrated By Customer Churn!



1% Churn

=



1.15%
in Lost Revenue



Areas of Interest/ Business Questions

Goal: Prediction → Prevention

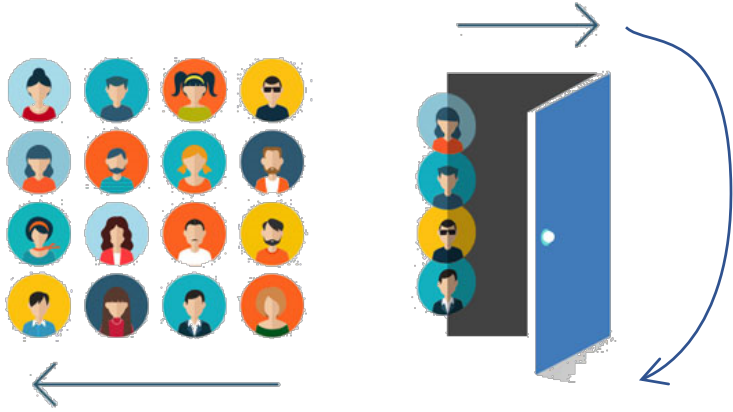
#1
Identify attributes
most predictive of
Churn!

#2
Evaluate current
offering's ability to
prevent Churn!

#3
Recommendations
for innovation to
prevent Churn!



Business Value

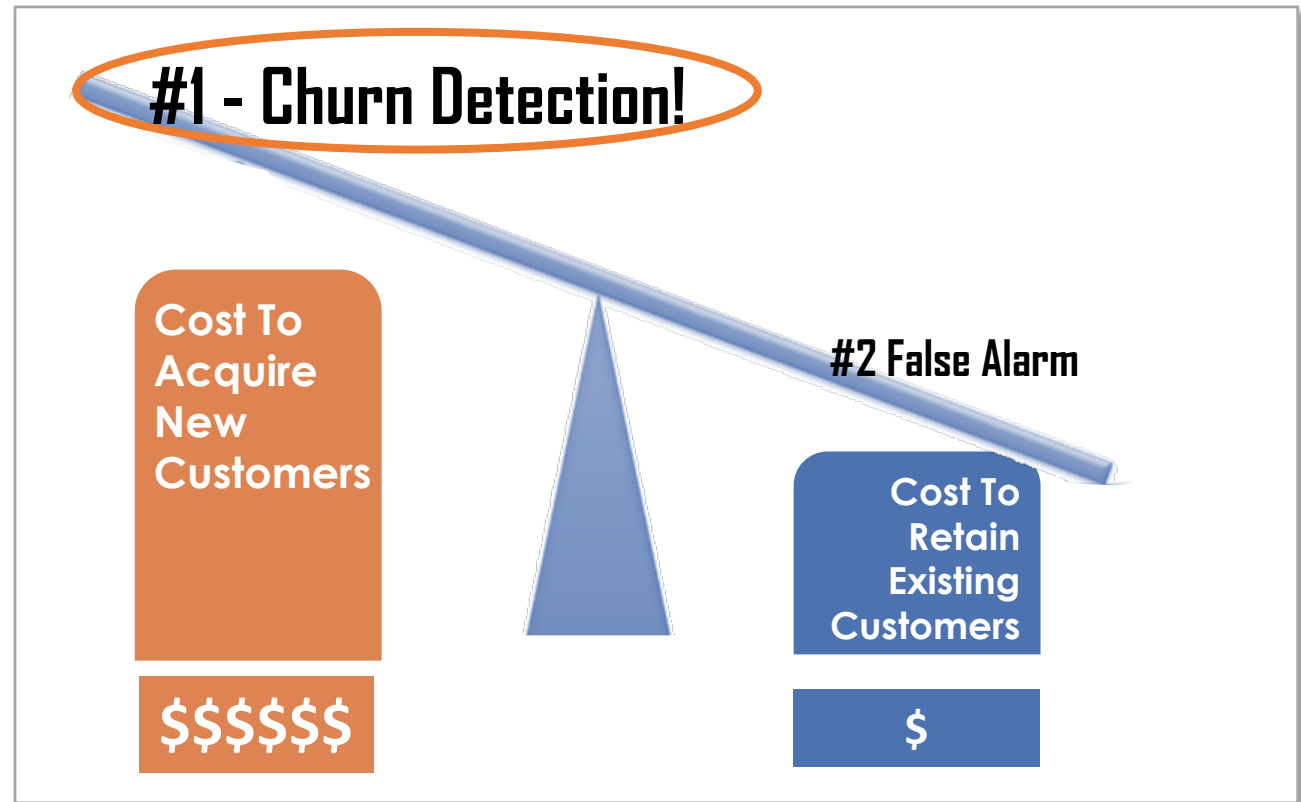
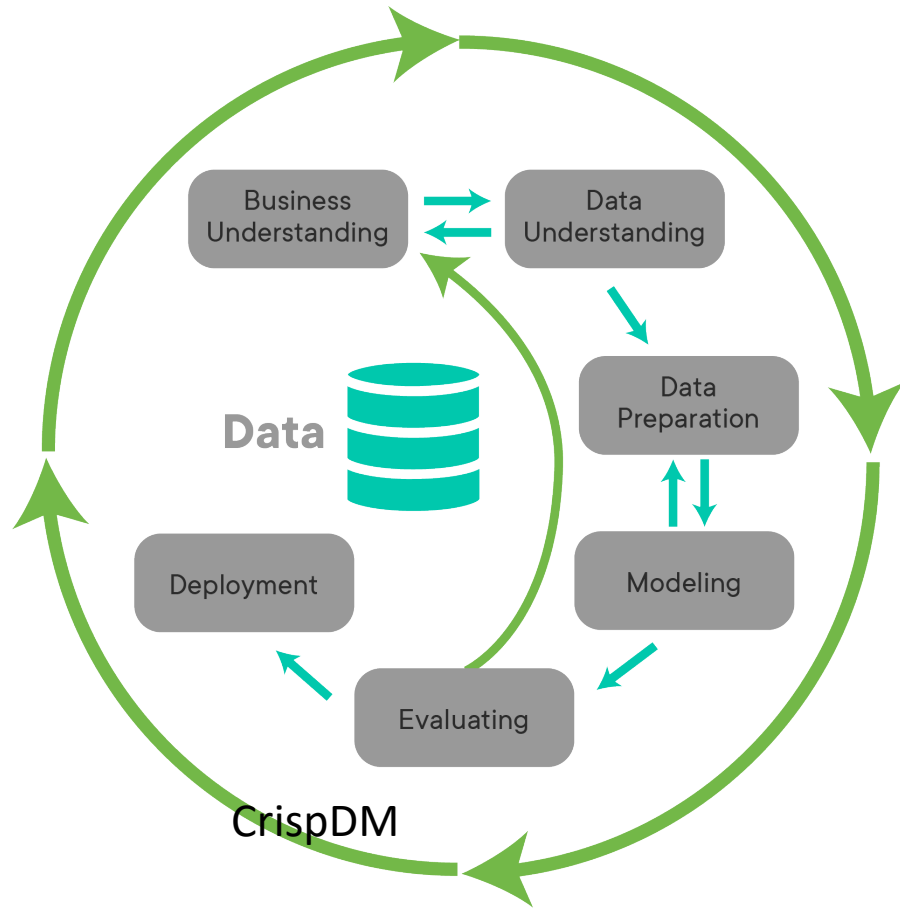


- Increase Retention



- Increase Revenue

Methodology



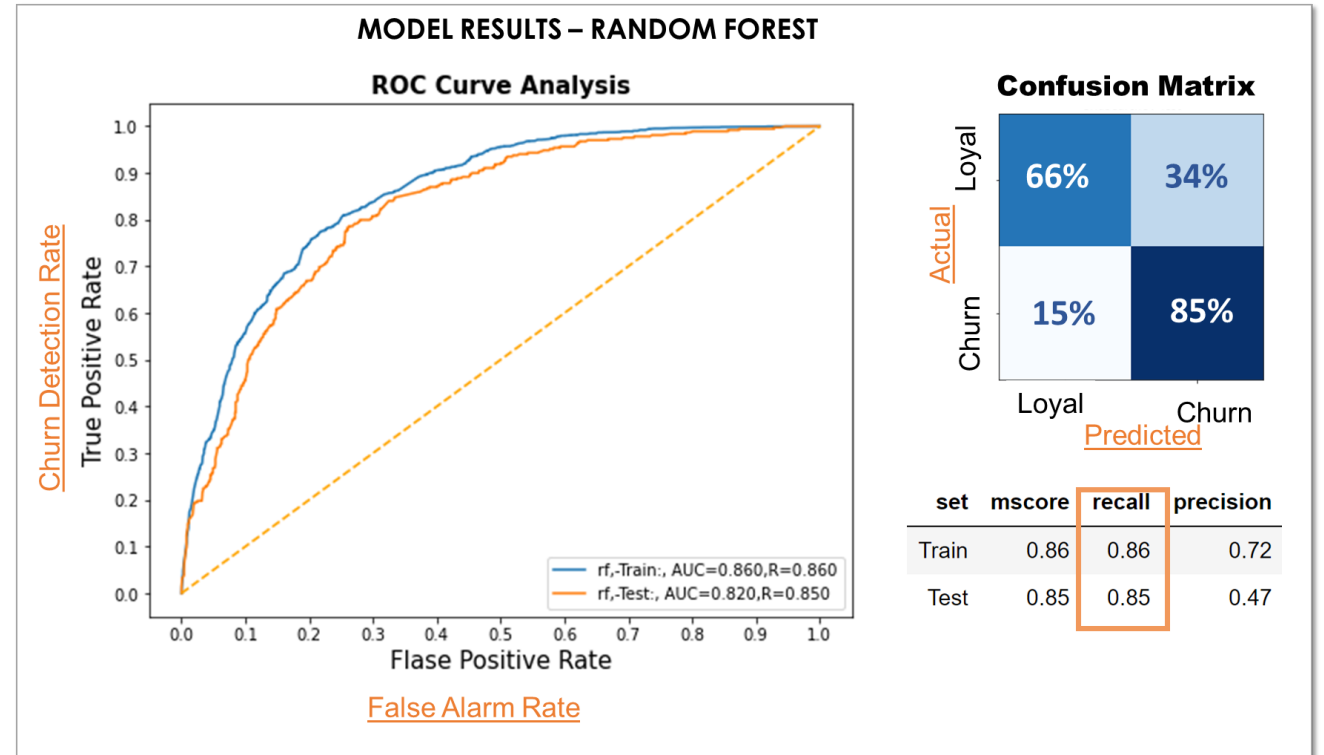
Model Results

85%

Churn Detection

34%

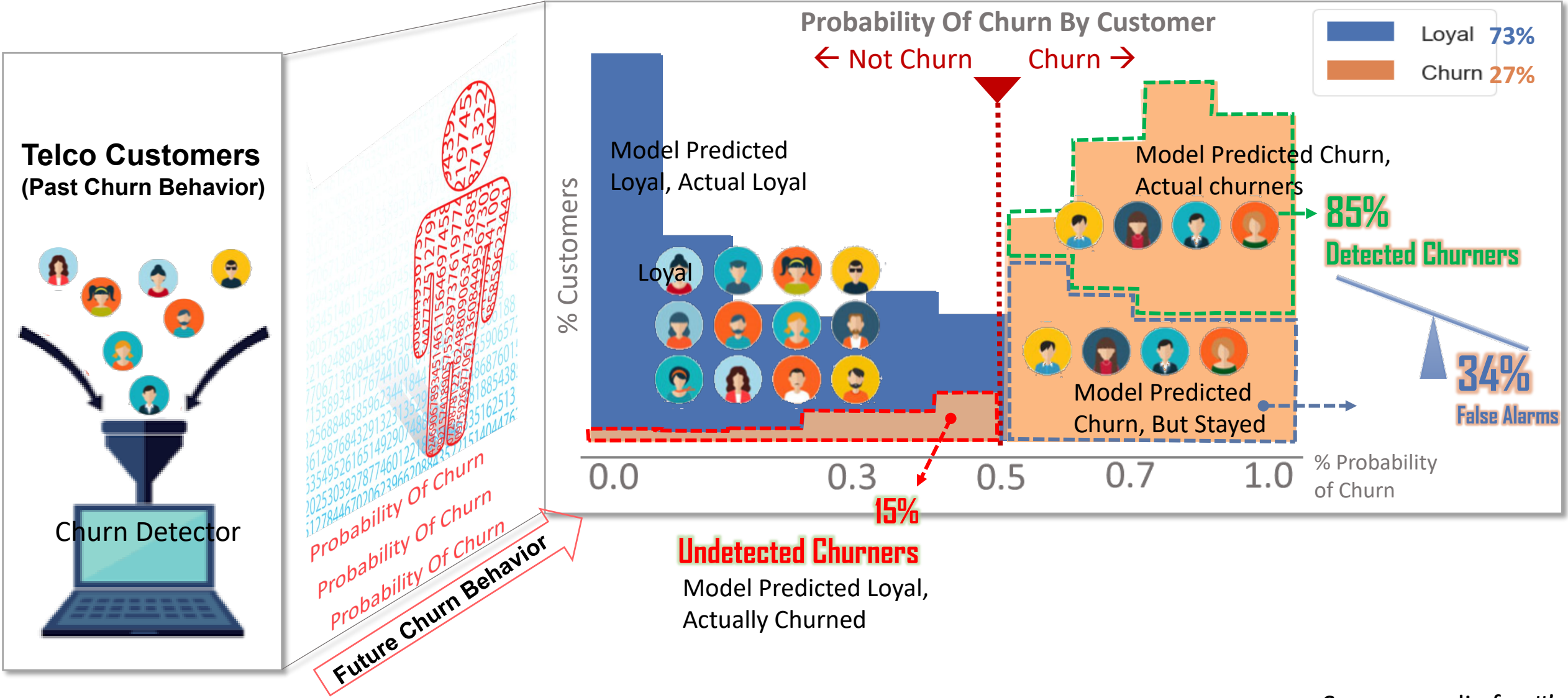
False Alarms



So...What Does This Mean?

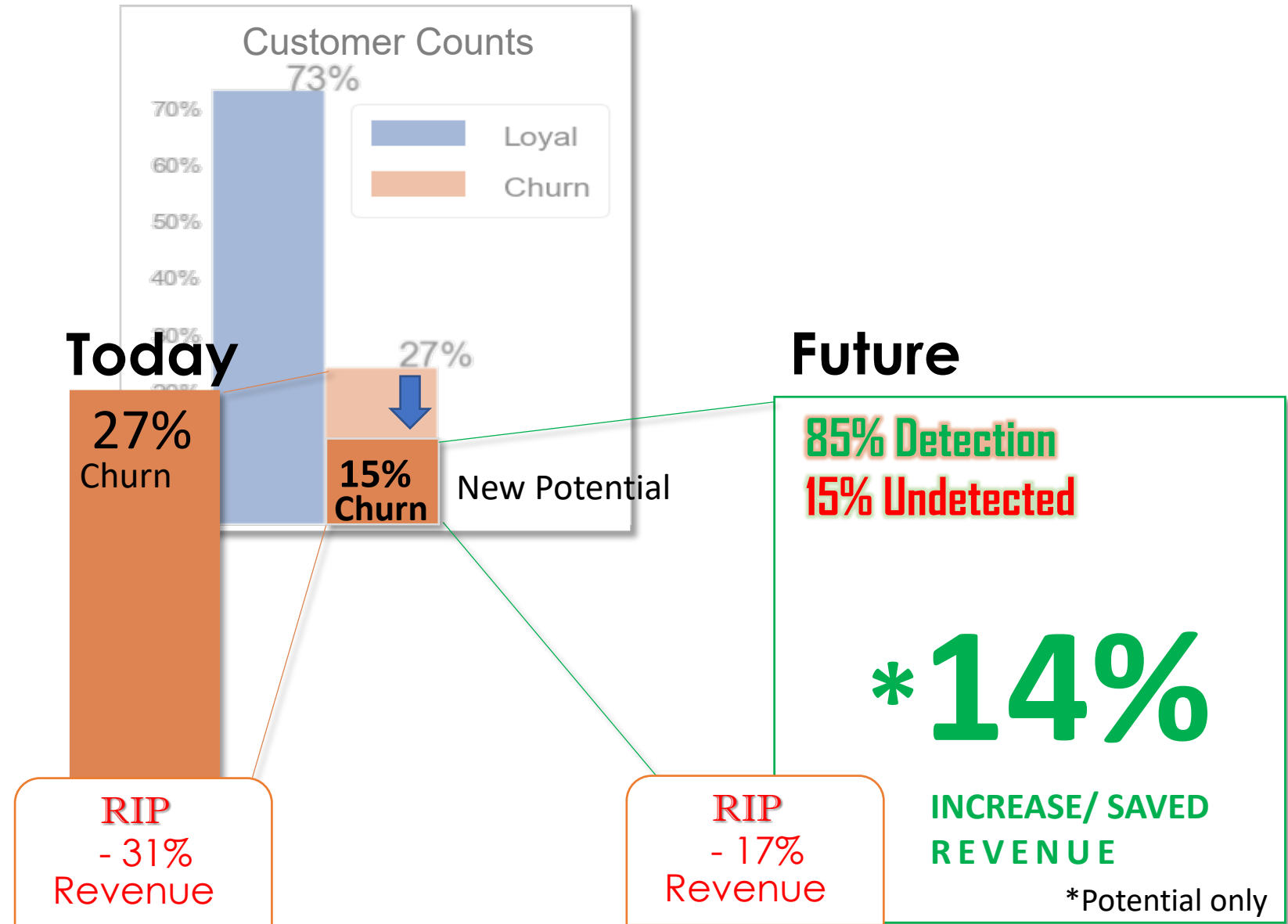
Example....

Example: Detected : False Alarms : Undetected



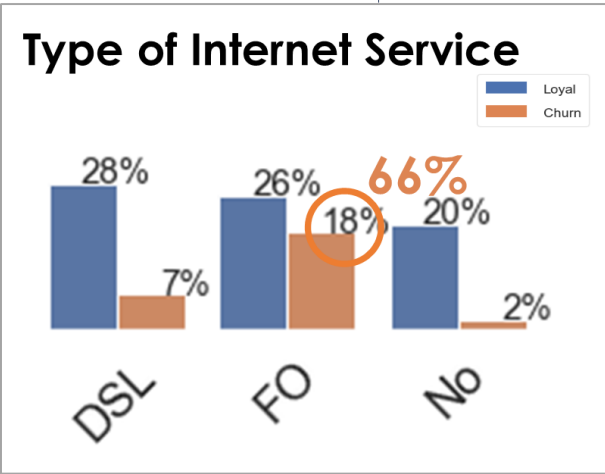
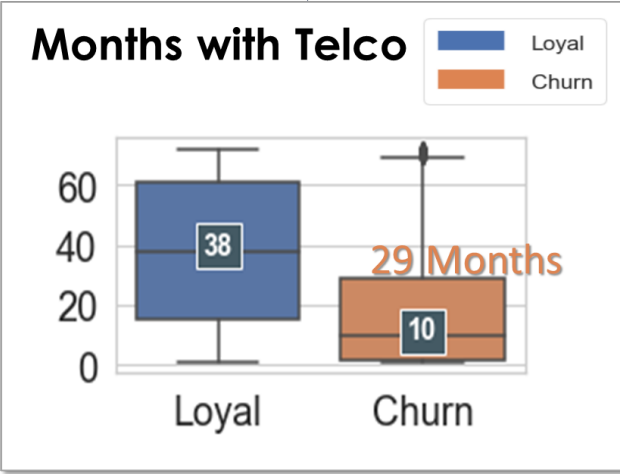
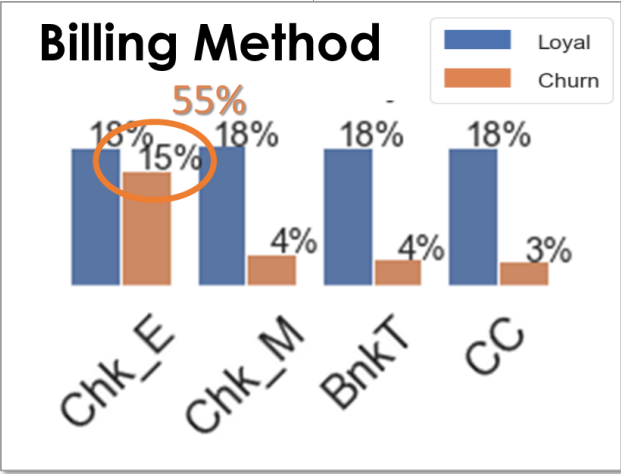
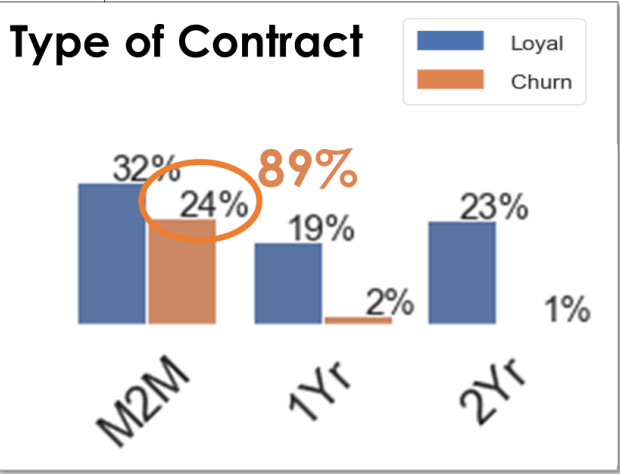
See appendix for #'s

*Revenue Ramifications (Reducing Churn by 81%)

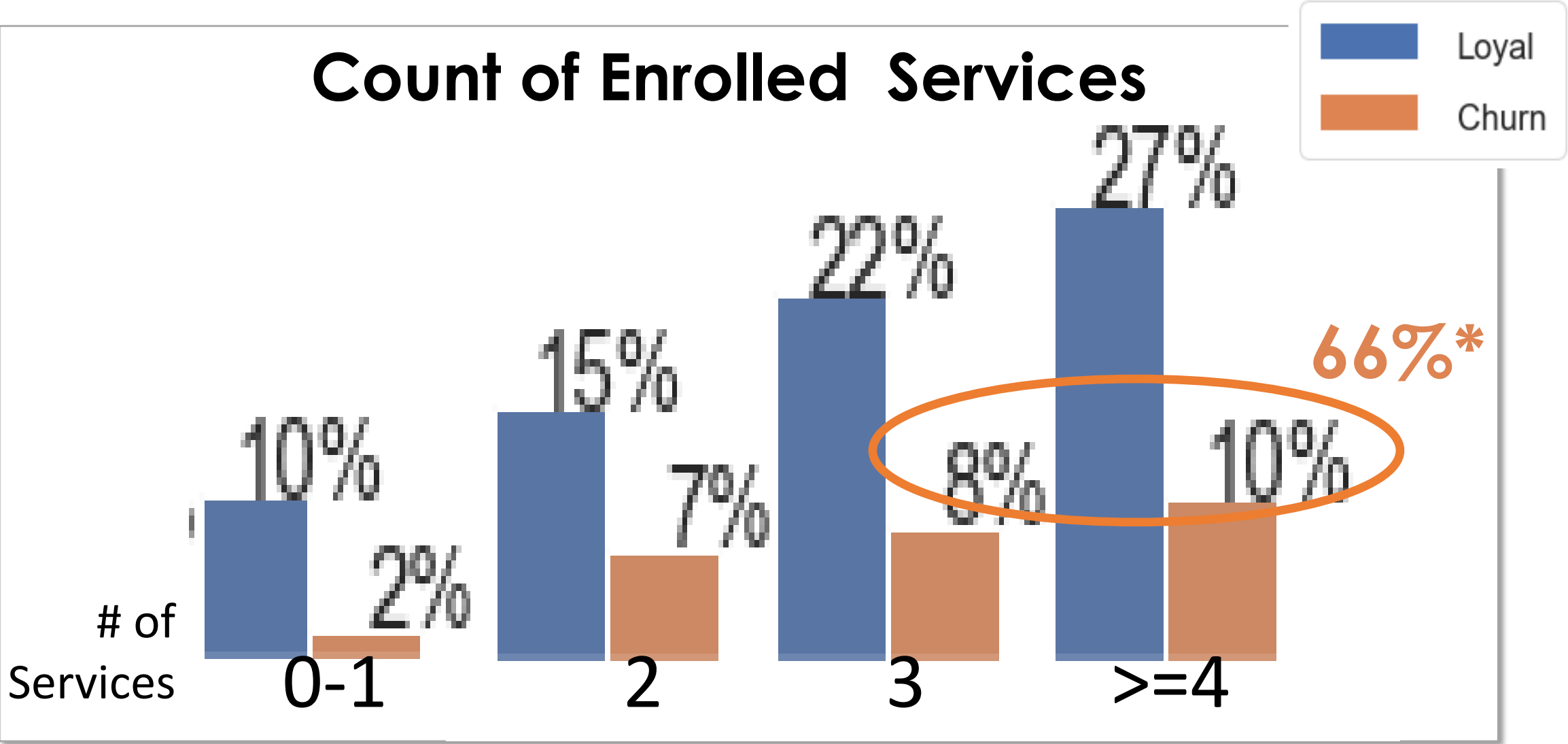


Area of Interest #1 :Most Significant Attributes Associated with Churn

5 Most Significant Features



Area of Interest #2 : Effectiveness of Current Services



Area of Interest #3 : Opportunities For Innovation

Focus On Features Most Predictive of Churn

5 Most Significant Features

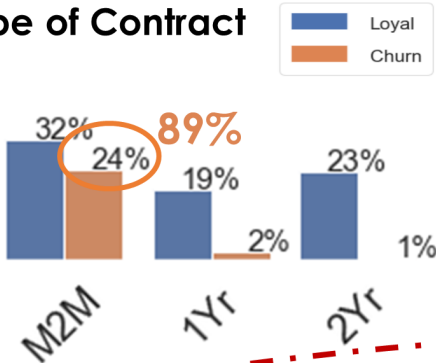
Contract: (Month 2 Month)

Billing (Elec Check)

Tenure (Months w Telco)

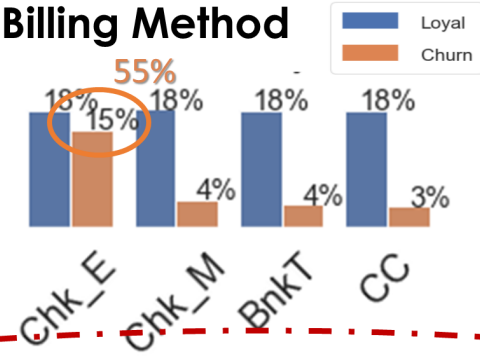
Internet Type: (Fiber Optics)

Type of Contract



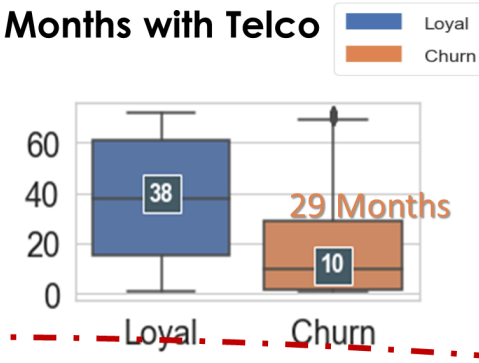
Induce Trial
Short Term Contracts

Billing Method



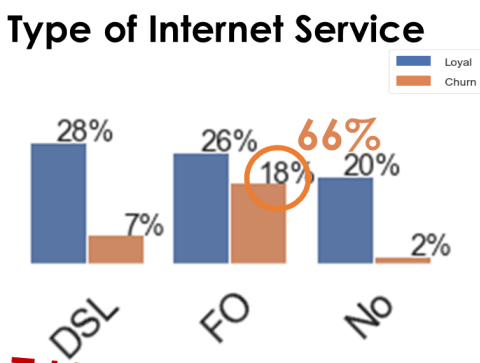
Review Quality
Increase Ease

Months with Telco



Loyalty Programs
Increase Tenure

Type of Internet Service



Review Competition
Perform analysis

Future Work/ Next Steps

- a) Optimize Current Model(s)
 - 1. Further Examine/ Look To Reduce Any Overfitting
- b) Establish Hard Numbers for the Cost of False Alarms
- c) Develop Threshold Evaluation Formula
- d) Reexamine Detection vs. False Alarm Tradeoffs/ Thresholds
- e) Examine Additional Classifiers
- f) Put Model(s) Into Productions

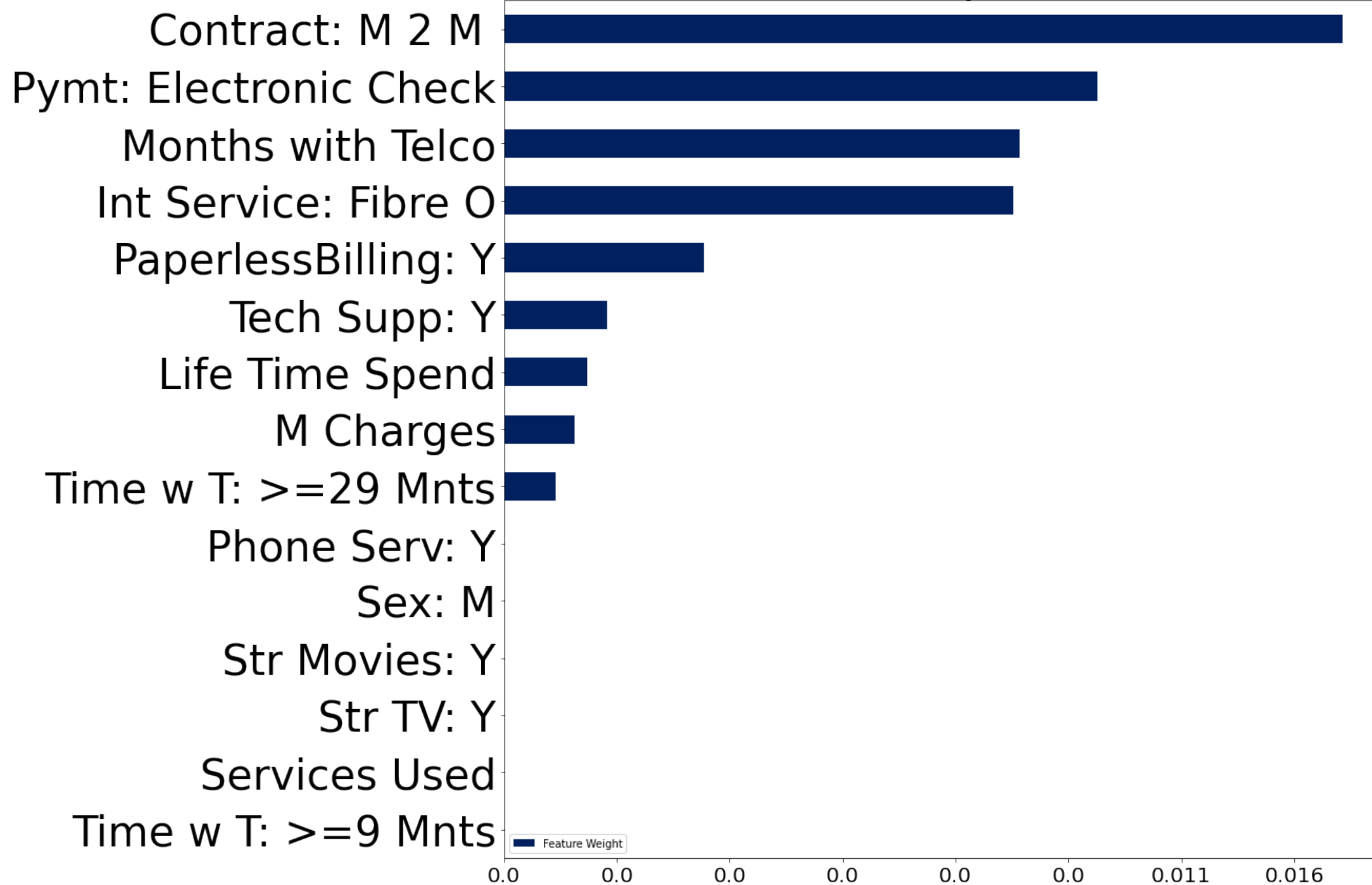


Thanks For Your Time and
Consideration!



Appendix

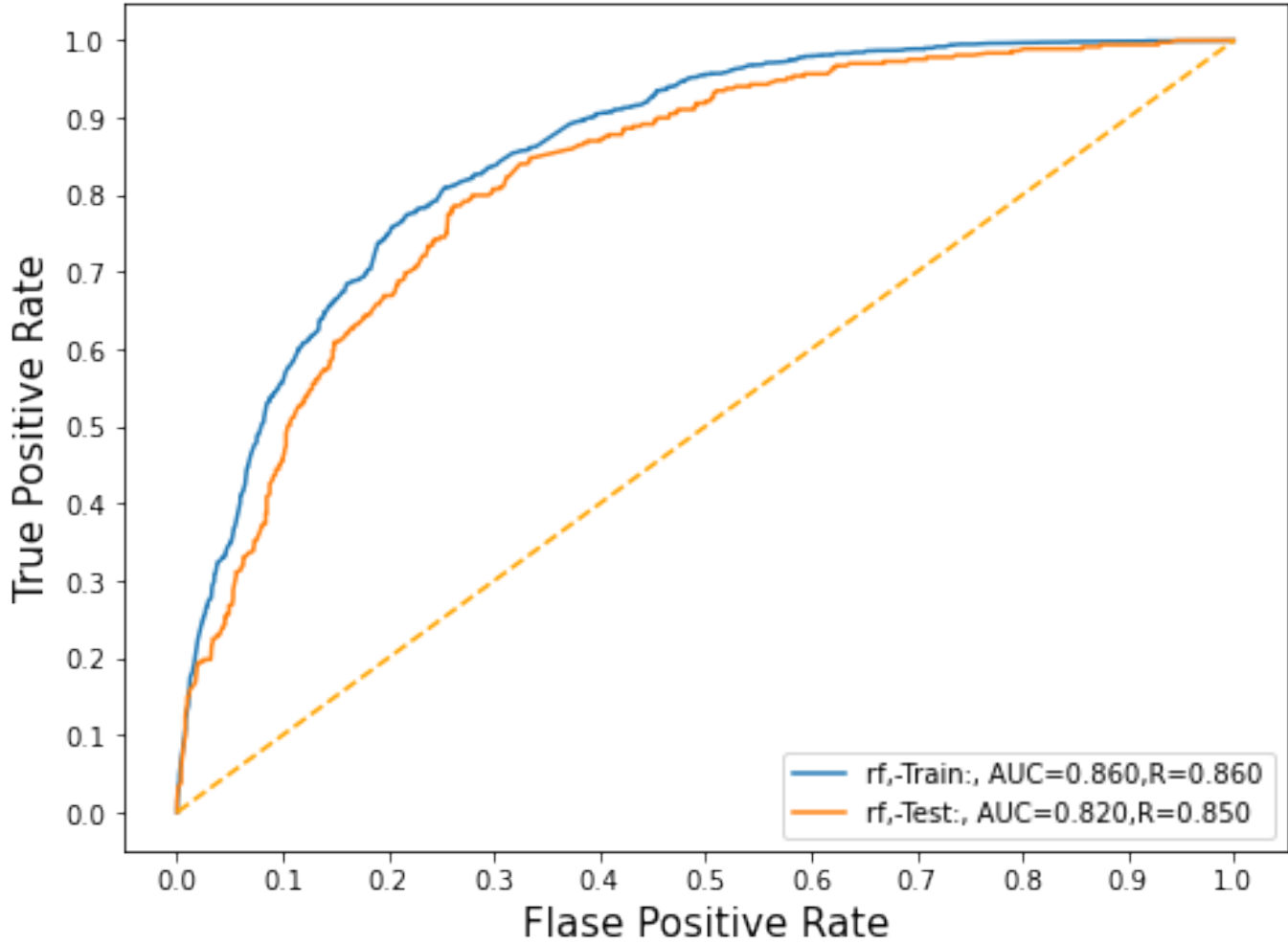
Feature importance



MODEL RESULTS – RANDOM FOREST

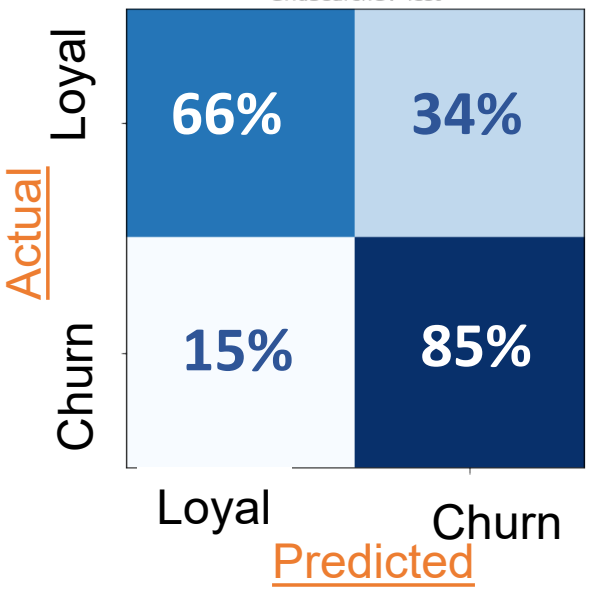
ROC Curve Analysis

Churn Detection Rate



False Alarm Rate

Confusion Matrix



set	mscore	recall	precision
Train	0.86	0.86	0.72
Test	0.85	0.85	0.47