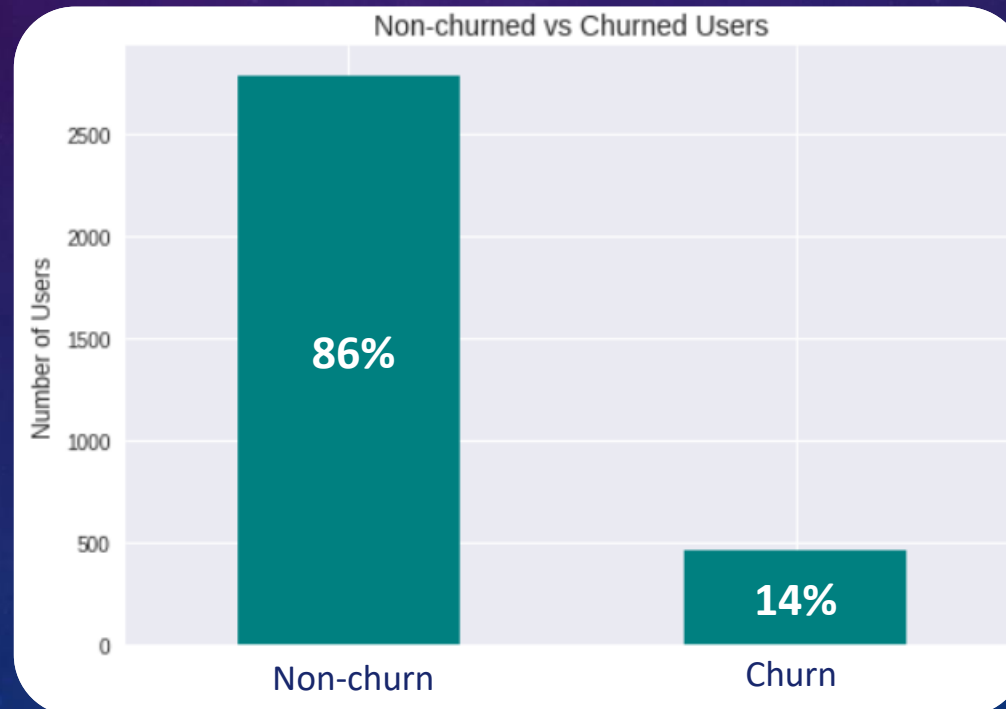# TELECOM CUSTOMER ATTRITION

JULY 16TH, 2020

PRESENTED BY LINH MAI

OBJECTIVES

★ **SyriaTel needs to make the correct strategic decisions**

★ **Improve customer retention rate by 5%**
→ Increase the profit by 25%-95%

★ **Acquiring new customers is more expensive than retaining existing customers**

OVERVIEW

★ **Raw data**: more than 3,300 entries with 20 features

★ **Cleaned data**: About 3,200 entries with 19 features:

Eliminated: area code, phone number

Added: '*total charge*': total day/eve/night/international charges

Non-churned vs Churned Users

TOP 3 MODELS' PERFORMANCE

	XGBoost	Random Forest	Decision Tree
F1 SCORE	**93%**	**93%**	**88%**

Receiver Operating Characteristic (ROC) Curve

RandomForest (AUC = 0.938)
DecisionTree (AUC = 0.899)
XGBoost (AUC = 0.938)
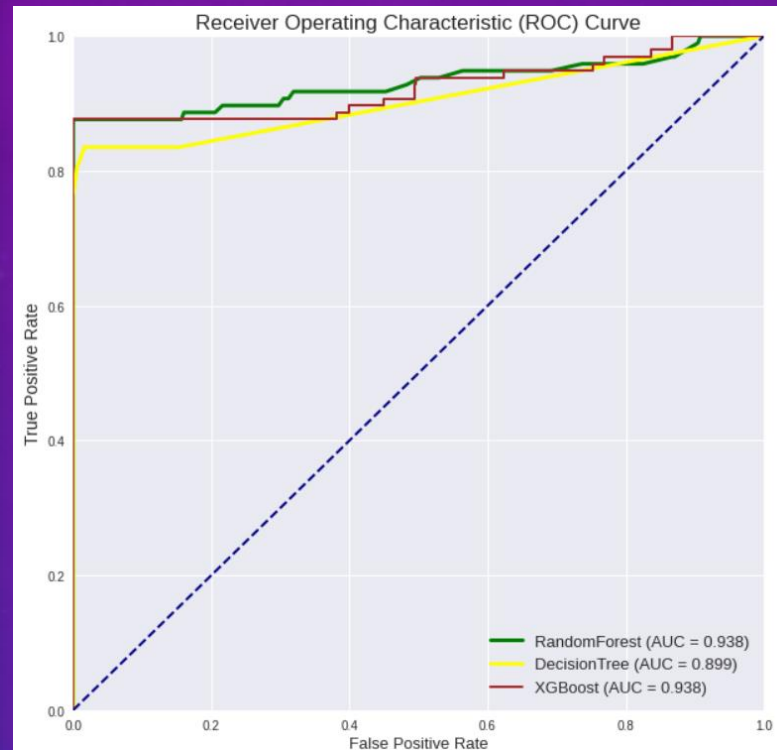
Much better than randomly guessing with 50% of correct results

TOP FEATURES FROM XGBOOST MODEL

Top Features by XGBoost
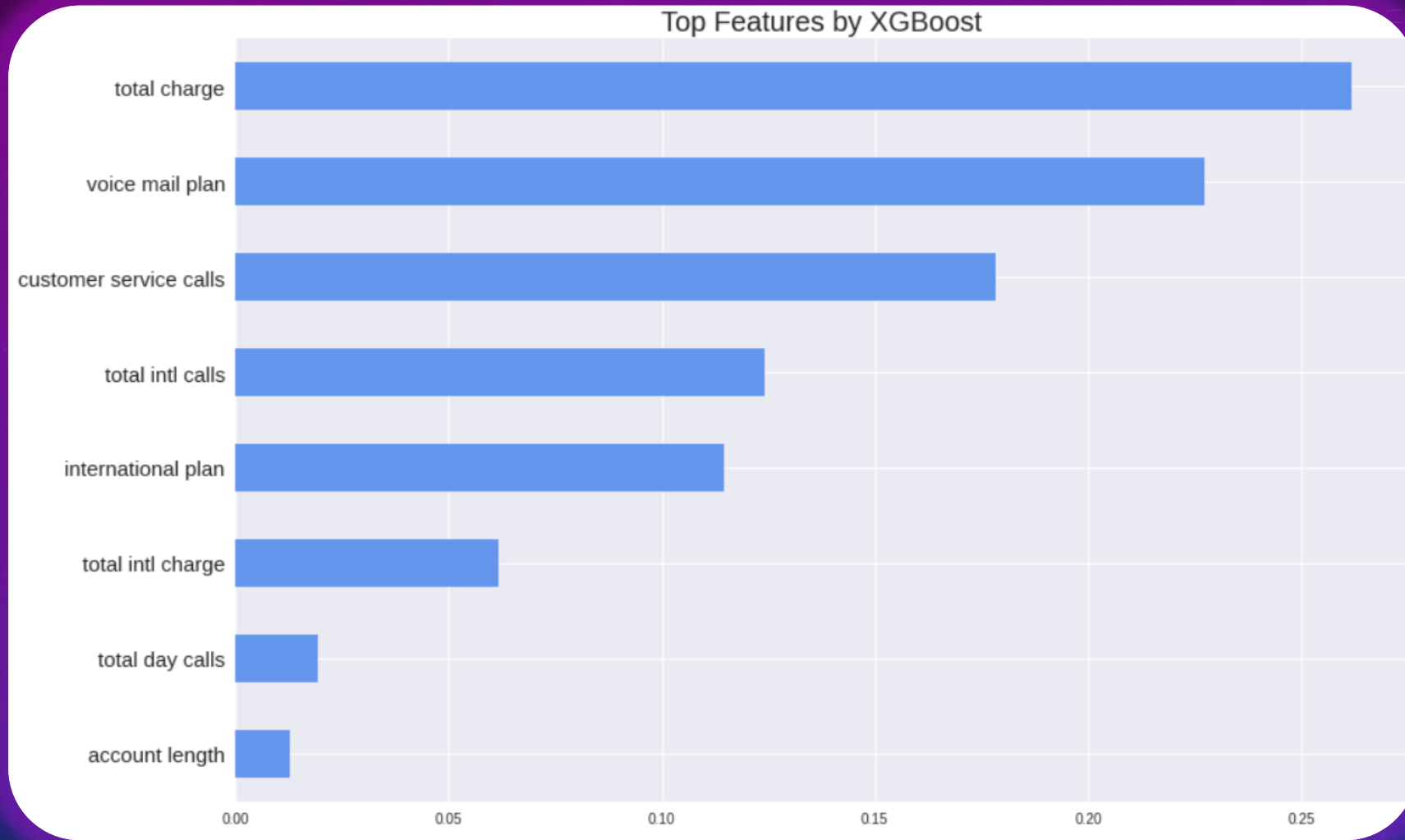
RECOMMENDATIONS

Total Charge
Total amount a customer has to pay per month

1

2

Voicemail Plan
Weather a customer has a voicemail feature

Customer Service Calls
How many times a customer call Customer Service per month

3

4

Total International Calls
Total number of international calls per month

5

International Plan
Weather a customer has a plan for calling internationally

6

Total International Charge
Total amount a customer has to pay monthly for international calls

FUTURE CONSIDERATIONS

More data points

In-depth research on each of top features

Other types of classification models
(Deep Learning models: Boltzmann Machines, etc.)

THANK YOU