Customer Churn Analysis

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OVERVIEW

Syria_ telecommunications provider in mobile serice ,internet services as well as mobile payment solutions, entertainment services, and customer support.

They cater to individual consumers, businesses, Government and public sector

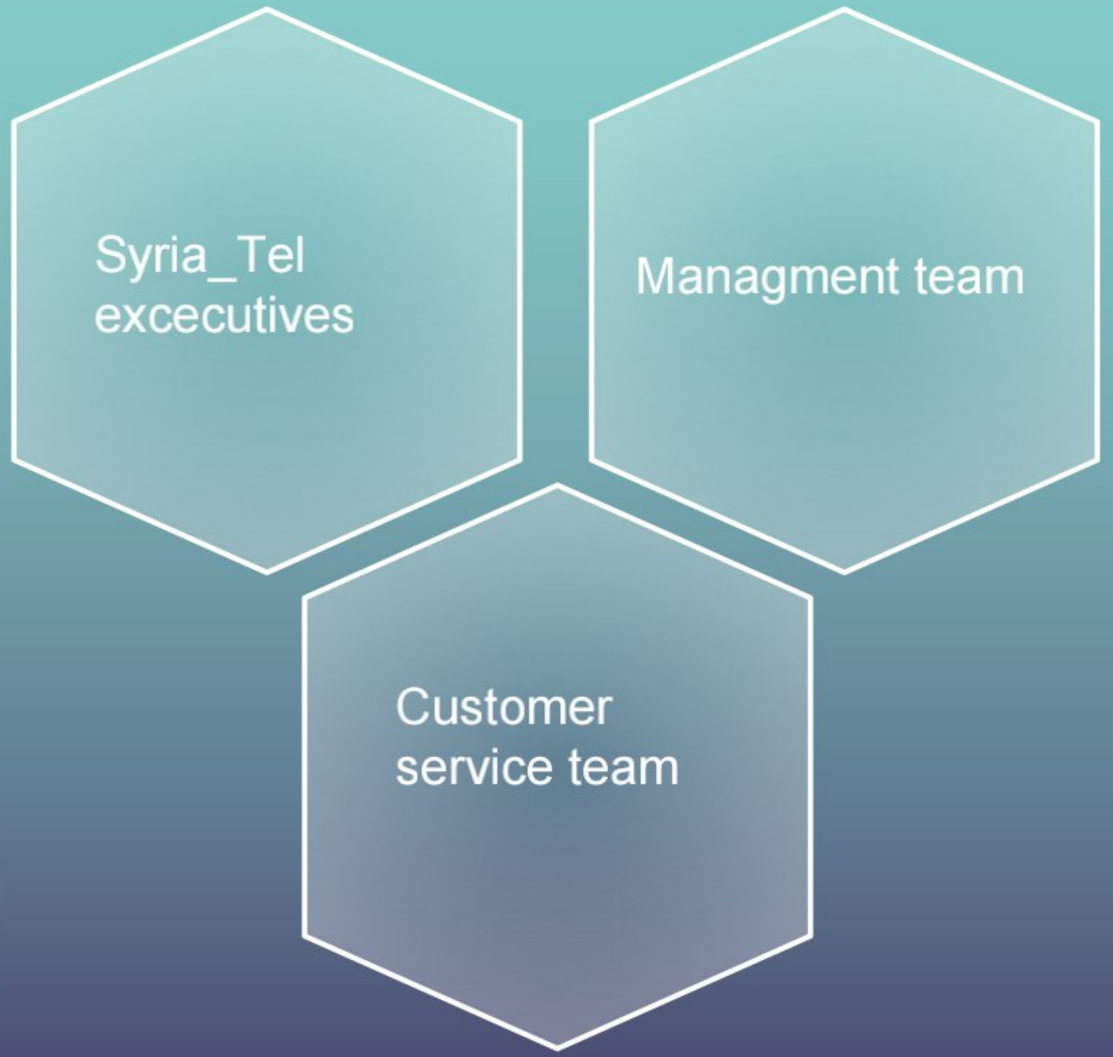
According to the models in our project we take a keen look at the key factors influencing customer churn and that will help increase customer retention

Business Understanding

PROBLEM STATEMENT

The goal of this project is to create a prediction model that can identify customers who are prone to churn. Our goal is to identify predictable patterns and key features linked with customer churn.

STAKEHOLDERS



OBJECTIVES

1.Create a machine learning model that can effectively anticipate customer attrition based on previous customer data and behavioral patterns.

2.Identify the essential attributes that contribute significantly to client attrition.This will allow for the development of insights into the fundamental reasons.

3.To achieve a high level of accuracy and recall in the churn prediction model in order to reduce both false negatives (customers who churn but were not forecasted) and false positives (customers who were expected to churn but did not).

4.Utilize the prediction model to develop mitigation strategies to assist reduce customer turnover.

5.To make advice to the company on how to retain clients, which will assist the company keep its market share.

DATA UNDERSTANDING

SUMMARY

The dataset, encompassing customer demographics, usage patterns, billing information, and customer service interactions.
The dataset consists of 3333 entries and 21 columns

FEATURE COLUMNS

state, account length, area code, phone number, international plan, voice mail plan, number vmail messages, total day minutes, total day calls, total day charge, total eve minutes, total eve calls, total eve charge, total night minutes, total night calls, total night charge, total intl minutes, total intl calls, total intl charge, customer service calls, churn

EDA

Subsequently, exploratory data analysis (EDA) is conducted to gain insights into the dataset's characteristics through visualizations and statistical measures.

MODELING

01

Random Forest

02

DecisionTreeClassifier

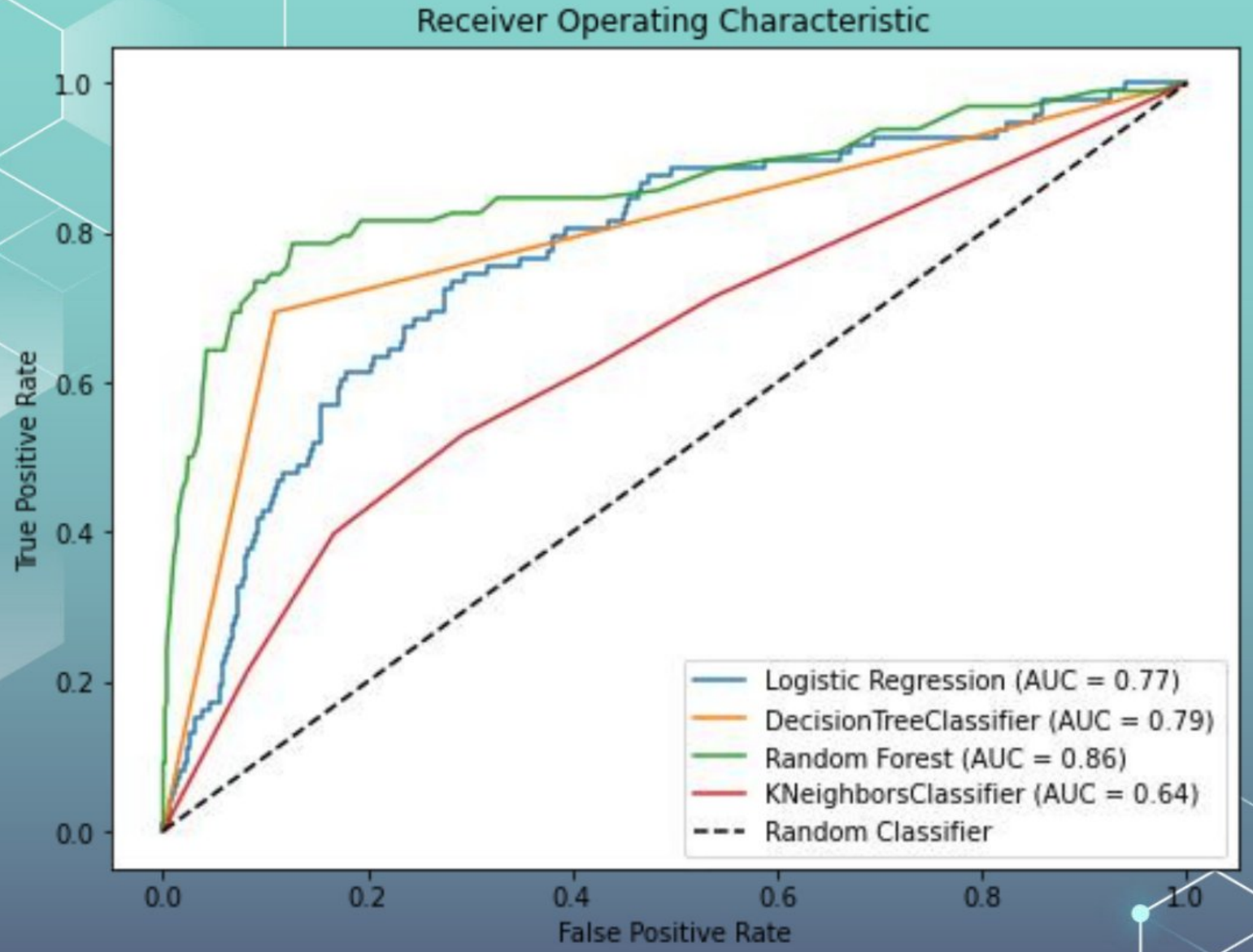
03

Logistic Regression

04

KNeighborsClassifier

We fitted this models, having the logistic regression as our baseline model and compared accuracy score to find the best perfoming model



ACCURACY SCORES

Random Forest

90.554723

DecisionTreeClassifier

86.20689

Logistic Regression

74.662669

KNeighborsClassifier

68.065967

EVALUATION

The best perfoming model was the Random forest classifier having the highets ROC and Accuracy

Important top features were;total day minutes, customer service calls, total intl calls, total eve minutes and total night minutes

RECOMMENDATIONS

1. Improve Customer Service Quality
2. Proactive Outreach
3. Customer Feedback
4. Evaluate International Plan Pricing
5. Targeted Promotions
6. Monitor Usage Patterns