



PROJECT

Syria Telecommunication
Project Presentation.



CONTENTS

The slides below contains my summarized project analysis as well as the recommendations to SyriaTel company.



Overview



Modeling



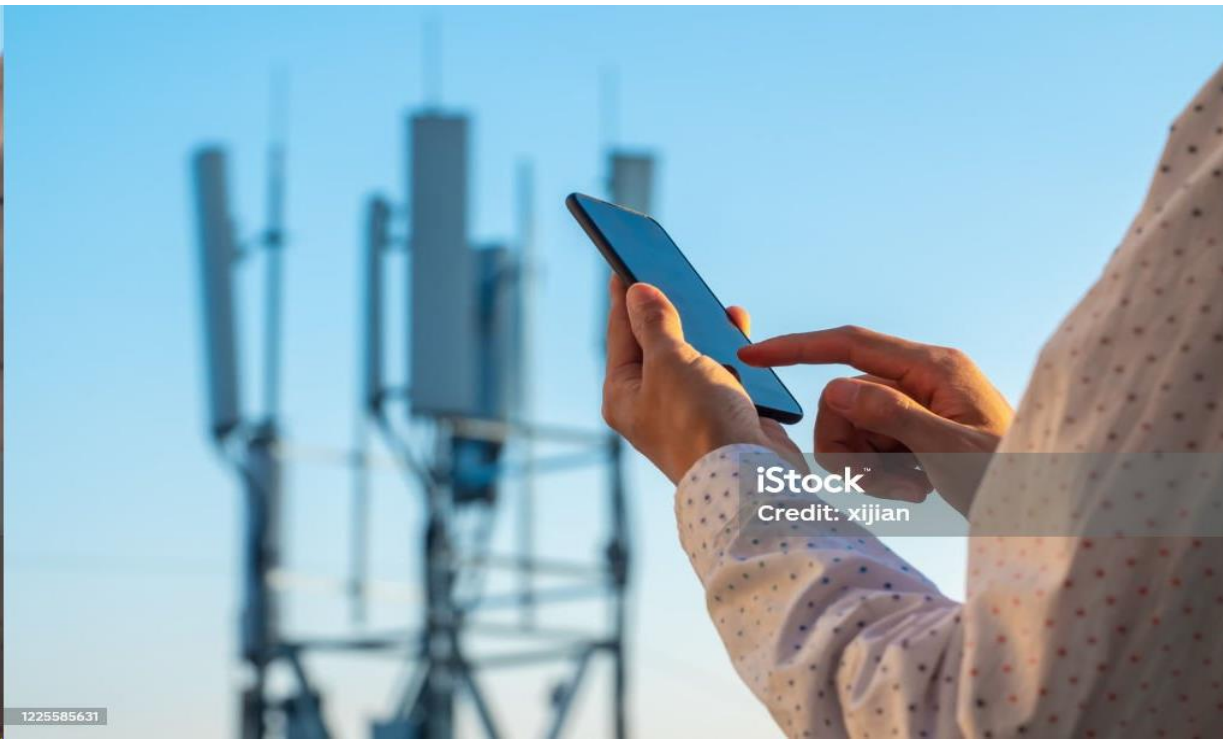
**Business
Problem**



Recommendations



Project Introduction **OVERVIEW**



iStock™
Credit: xijian



OVERVIEW



With me is the data from the Syrian Telecommunication Network 'SyrianTel_Customer_Churn.csv' that aims to predict whether a customer will ("soon") stop doing business with SyriaTel, a telecommunications company.

The Problem

The Task

I was tasked to explore the probability or the likelihood of customers leaving SyriaTel company or not and translate the findings into actionable insights.



2

Project Introduction

Business Problem



DATA

I worked with the following dataset;

SyriaTel_Customer_Churn



iStock™
Credit: nickylarson974



DATA PREPARATION



Check on Missing data.

Data Encoding

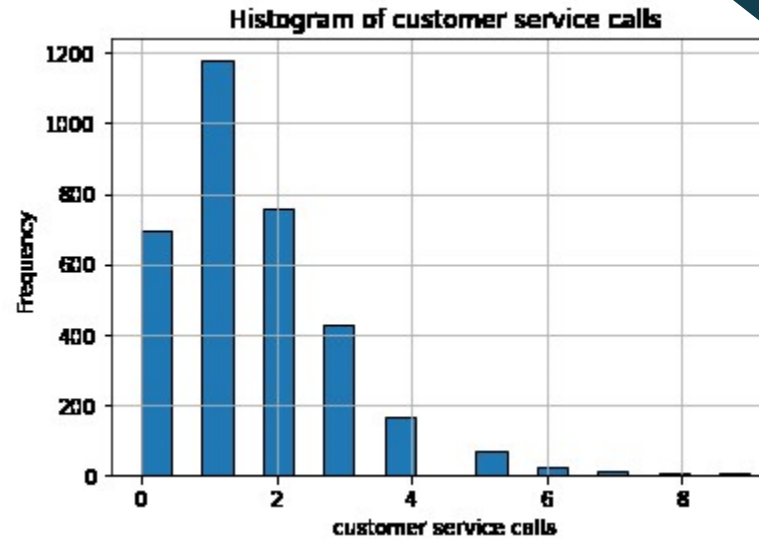
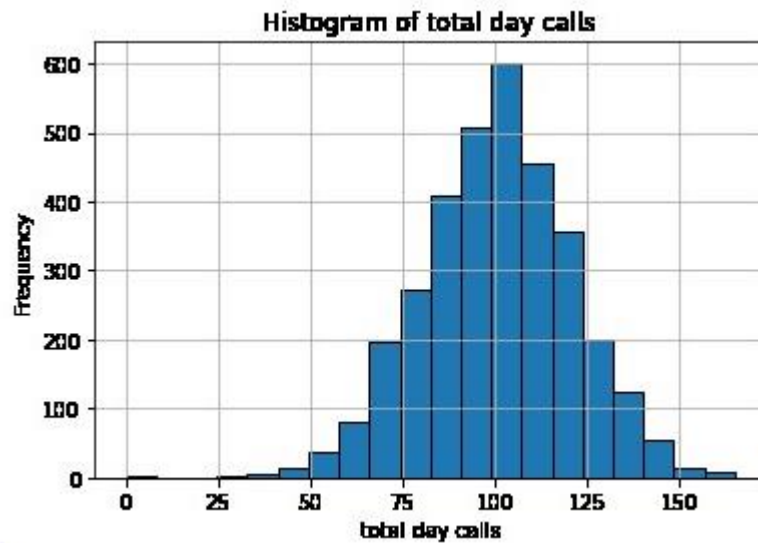
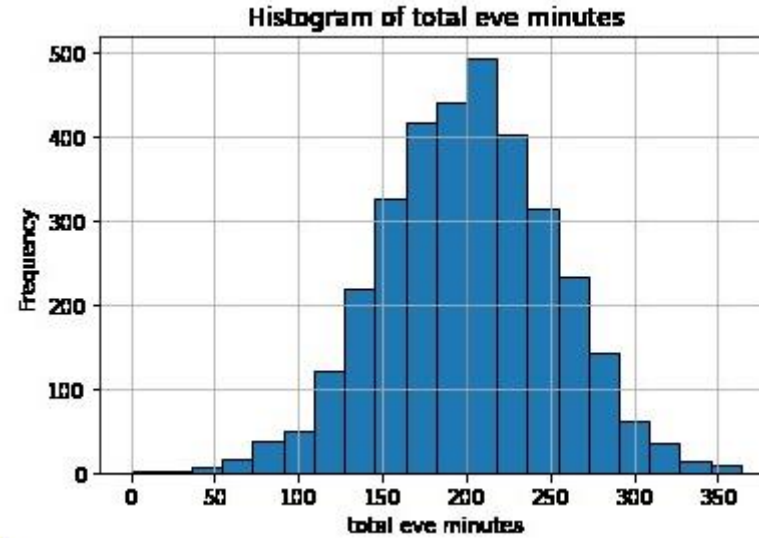
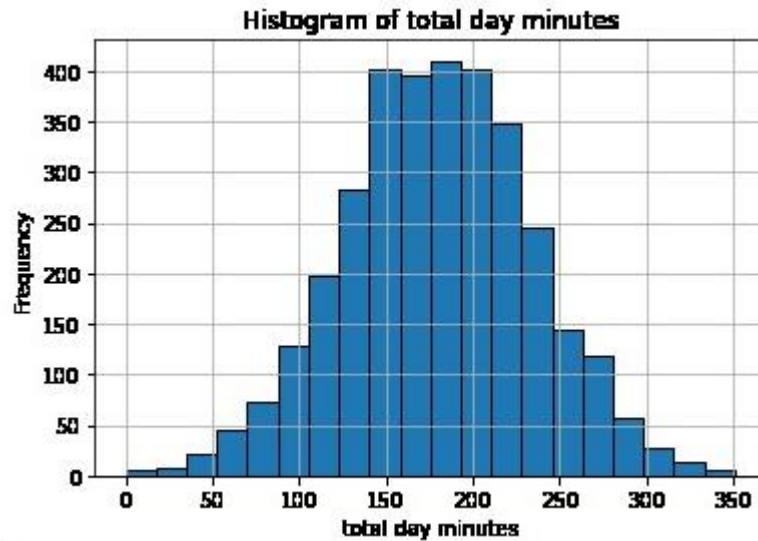
Exploratory Data Analysis
Modeling
Evaluation
Recommendations and
Conclusion



3

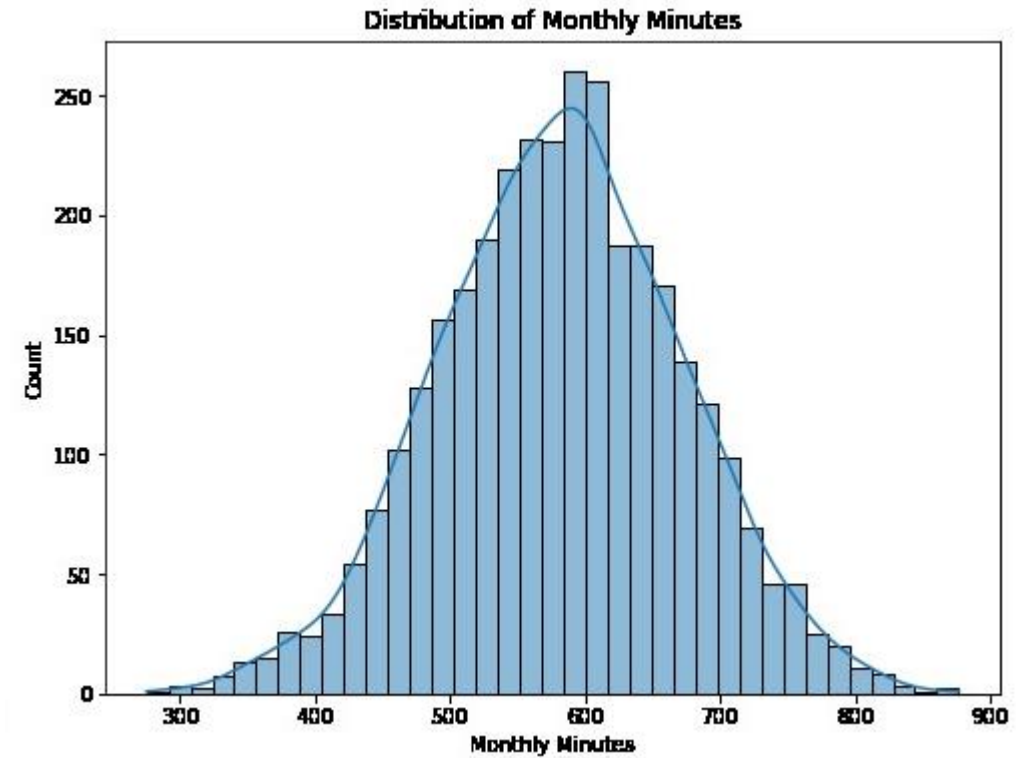
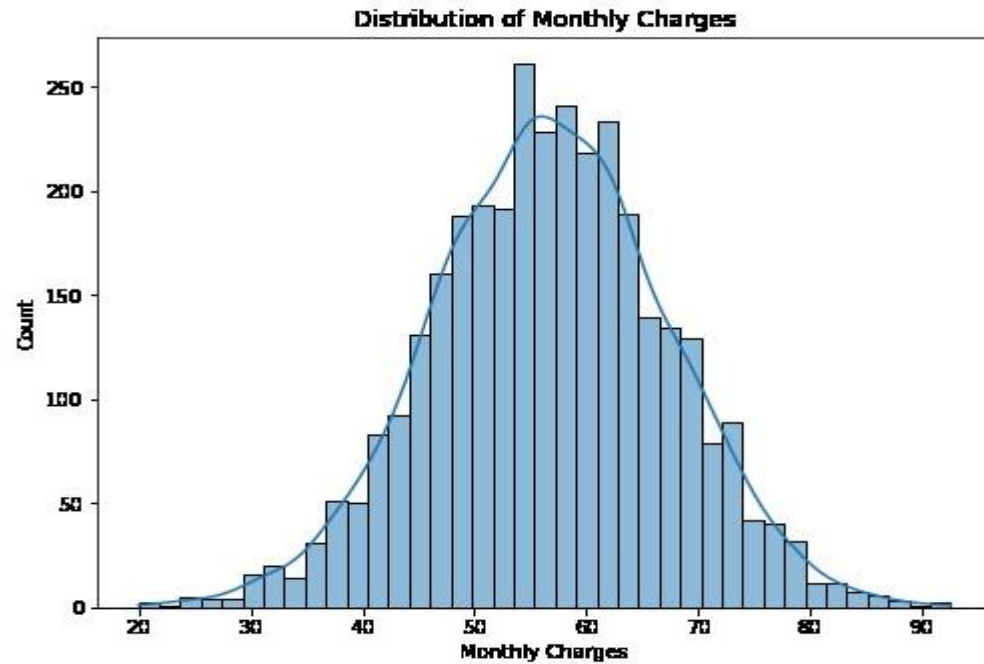
EXPLORATORY DATA ANALYSIS

Histograms Representing Data Distribution



Here I have presented some of the features to show how the Data is distributed. Most are Normally distributed

Feature Engineering



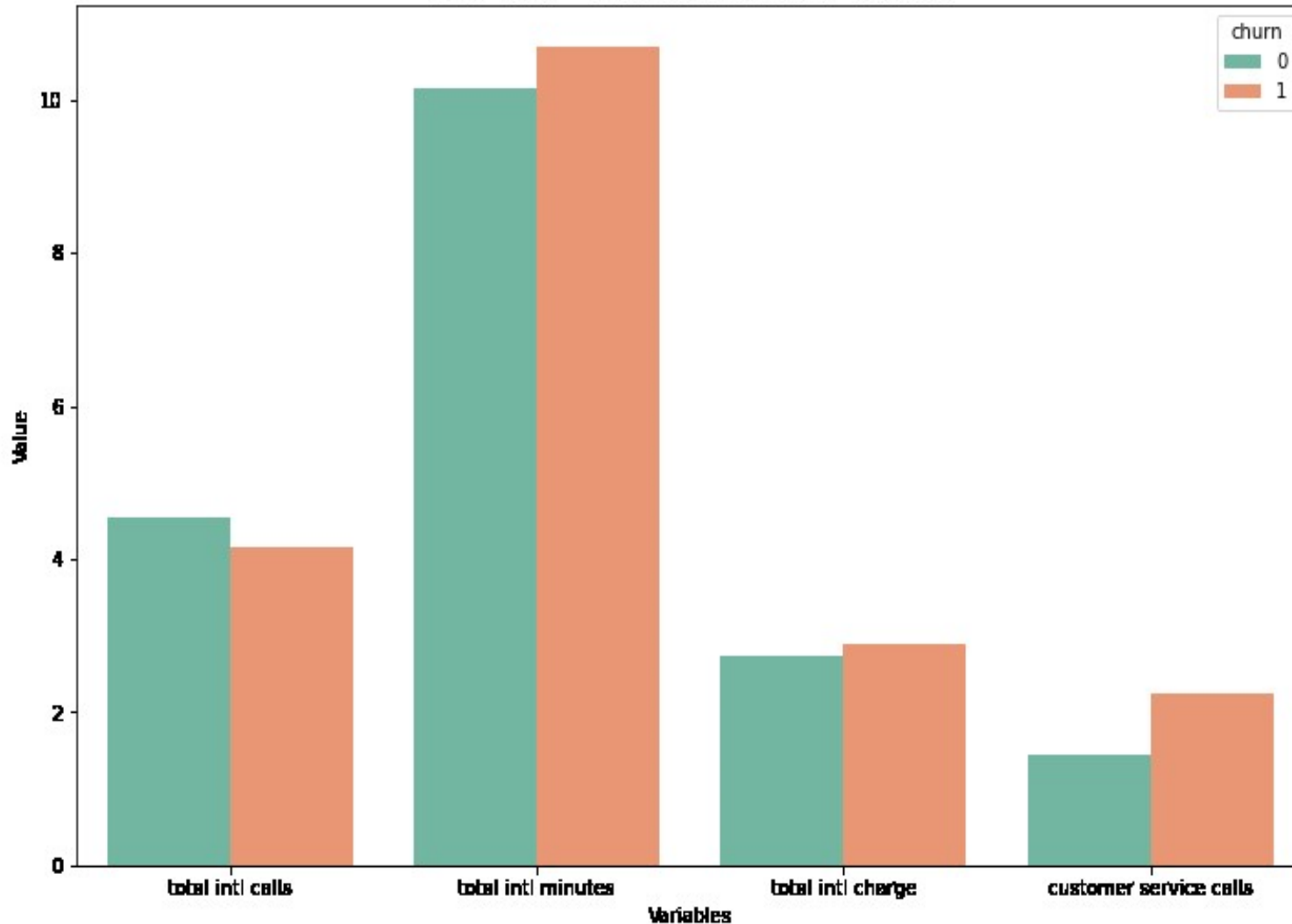
Monthly Charges and Monthly Minutes

Additional columns have been created from the existing ones to have a look at how the monthly charges and minutes of customers communication behaves.



Churn and non-churn customers in relationship with some of the features

Stacked Bar Chart of Churn vs. Other Variables



0 for 'Churn
False' and 1
for 'Churn
True'




In total
international calls
feature we see
that customers
exiting are less

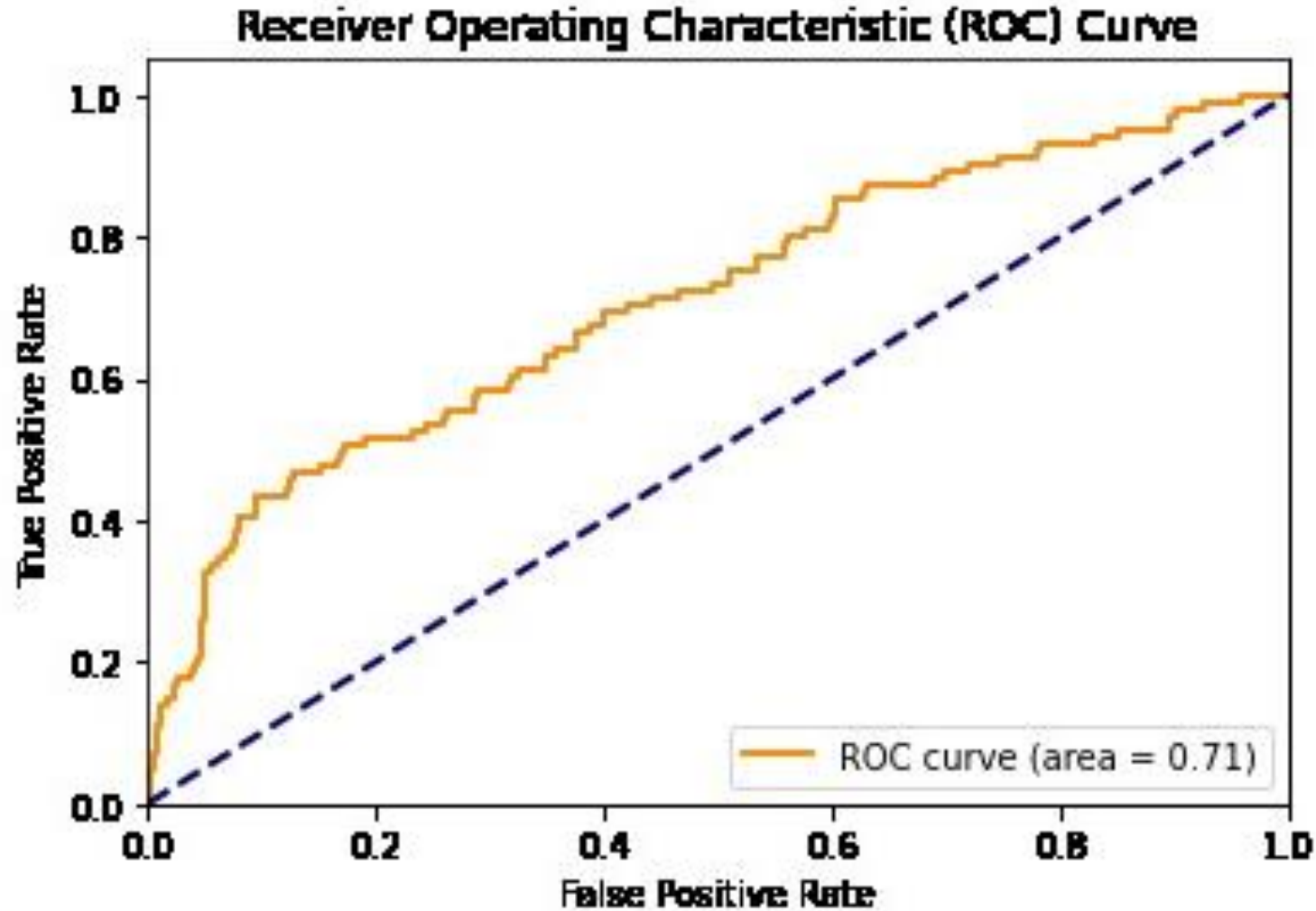


MODELING AND EVALUATION

In modeling our data I decided to use 3 types of models just so as to compare and see which one among the three will be appropriate in understanding and solving the business problem of the day.

- 
- 1) Logistic Regression Model
 - 2) Decision Trees Model
 - 3) K-Nearest Neighbors Model

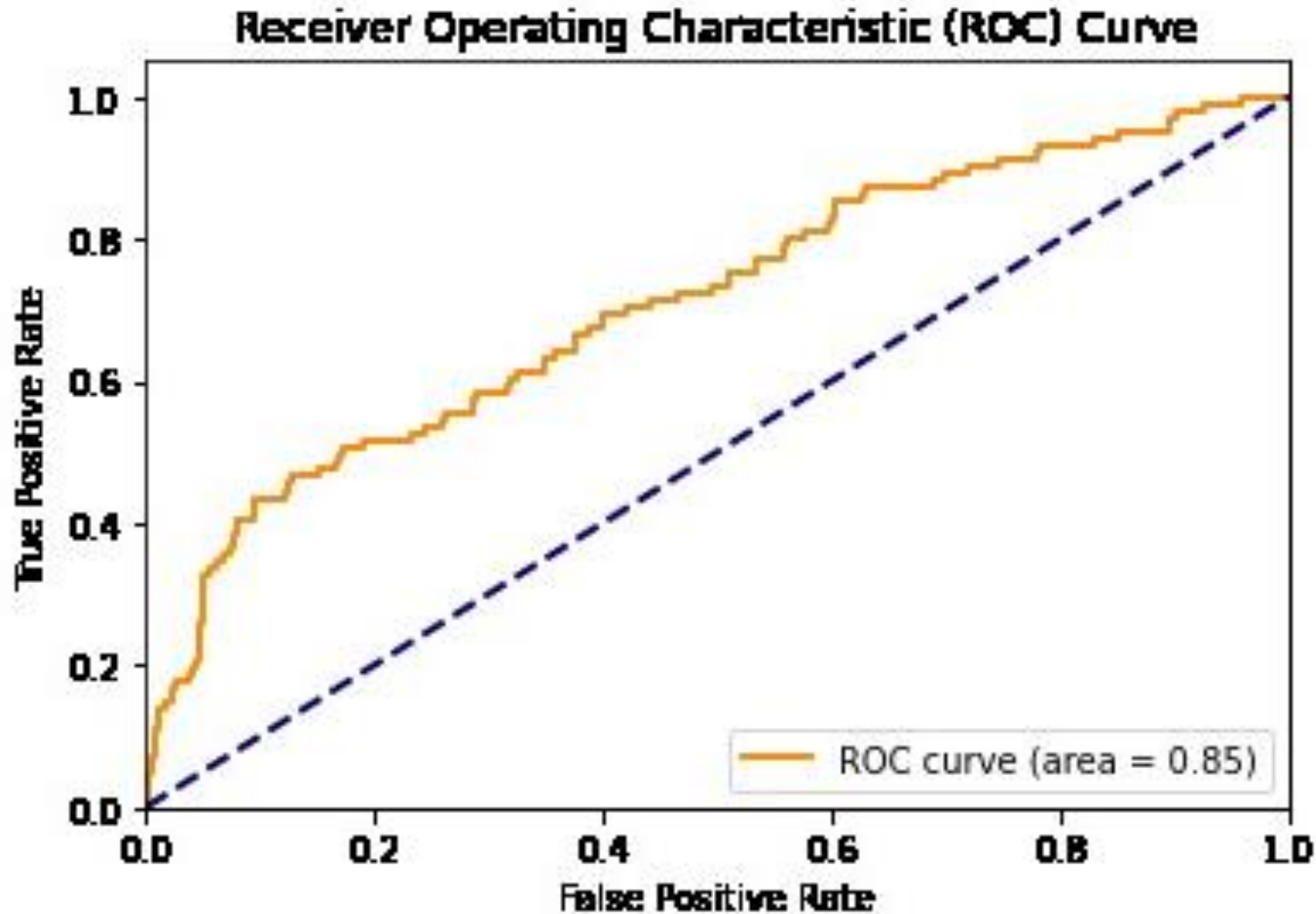
Model1: Logistic Regression Model



Model Performance Parameters

Accuracy: 0.856071964017991
Precision: 0.6
Recall: 0.1485148514851485
F1 Score: 0.23809523809523808
AUC: 0.7101074065003673.

MoDEL2: Decision Trees



Model Performance Parameters

Accuracy: 0.9235382308845578

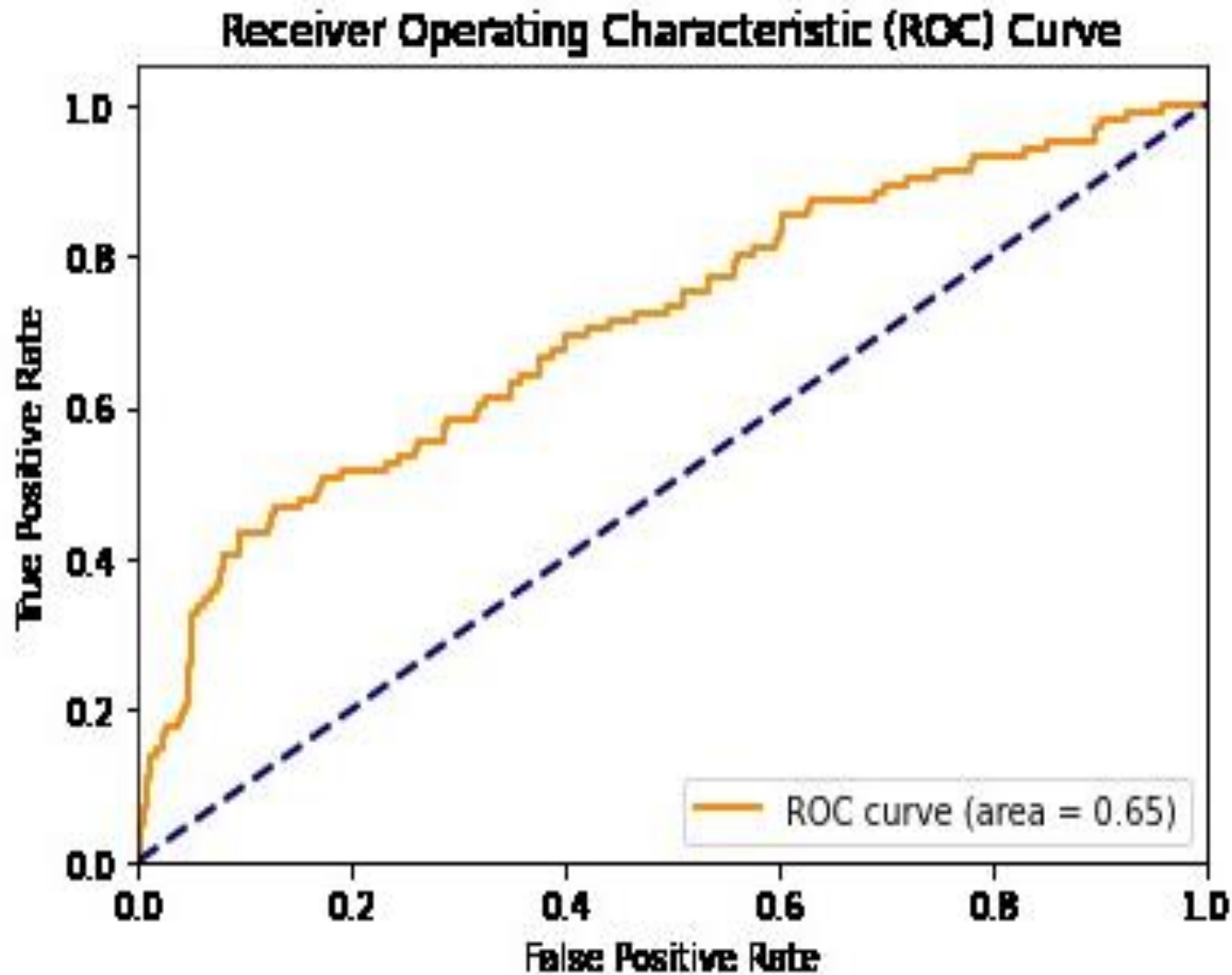
Precision: 0.7551020408163265

Recall: 0.7326732673267327

F1 Score: 0.743718592964824

AUC: 0.8451352202358046

Model3: K-Nearest Neighbors



Model Performance Parameters

Accuracy: 0.8770614692653673

Precision: 0.7021276595744681

Recall: 0.32673267326732675

F1 Score: 0.44594594594594594

AUC: 0.6509988454675857



Business

RECOMMENDATIONS

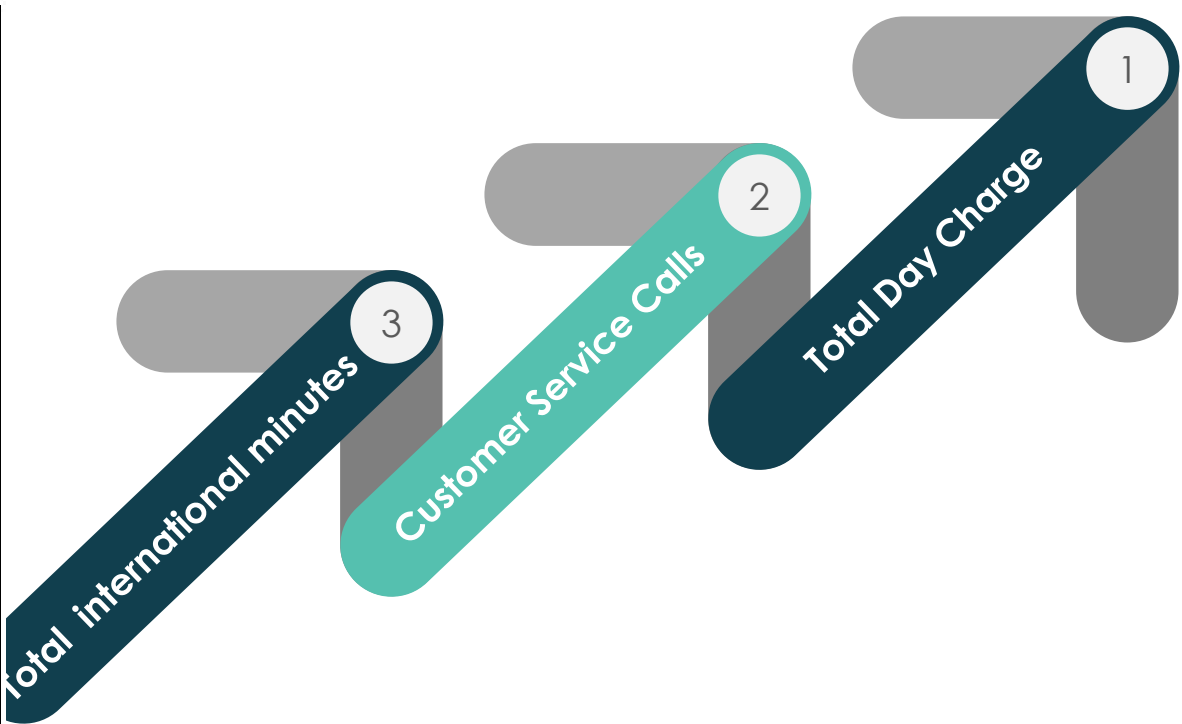
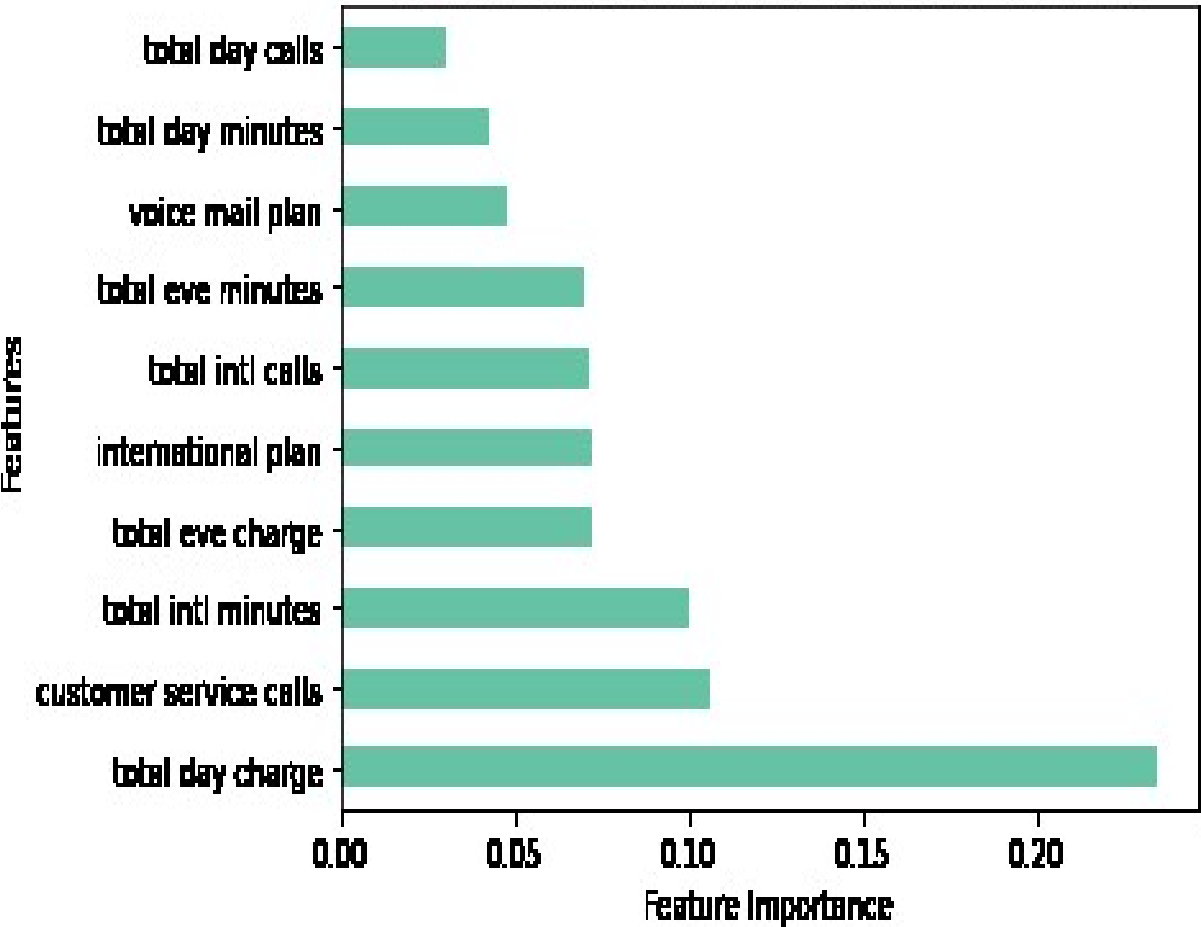




Recommendations

Focus on important features that influence customer churn and work on the problems arising from it

Top 10 Important Features in Decision Tree Model





CONCLUSION

I believe that by implementing these recommendations, SyriaTel Communication Company can make informed decisions and position itself for success in the dynamic and competitive telecommunications industry.





THANK YOU !

