Data-Driven Strategies for Enhancing customer Retention at SyriaTel

A Comprehensive Analysis to Improve Customer Retention and Profitability

INTRODUCTION

SyriaTel is a telecommunication's company that has been serving customers and have noticed a decline in customers

The company seeks to understand potential customer churn and develop strategies to enhance retention

How does Customer churn impact profitability ?

- Direct loss of revenue
- Increased customer acquisition costs
- Hindering overall business growth essentially
- Reducing their customer base.
- Impacting their profitability.

OBJECTIVE

To analyze customer behavior and develop strategies to reduce churn.

The key areas of focus are going to be :

1. **Account length**
2. **satisfaction levels from service calls**
3. **incurred charges**

METRICS OF SUCCESS

- **Churn Rate**
- **Average Account Length**
- **Service Call Frequency**

DATA OVERVIEW

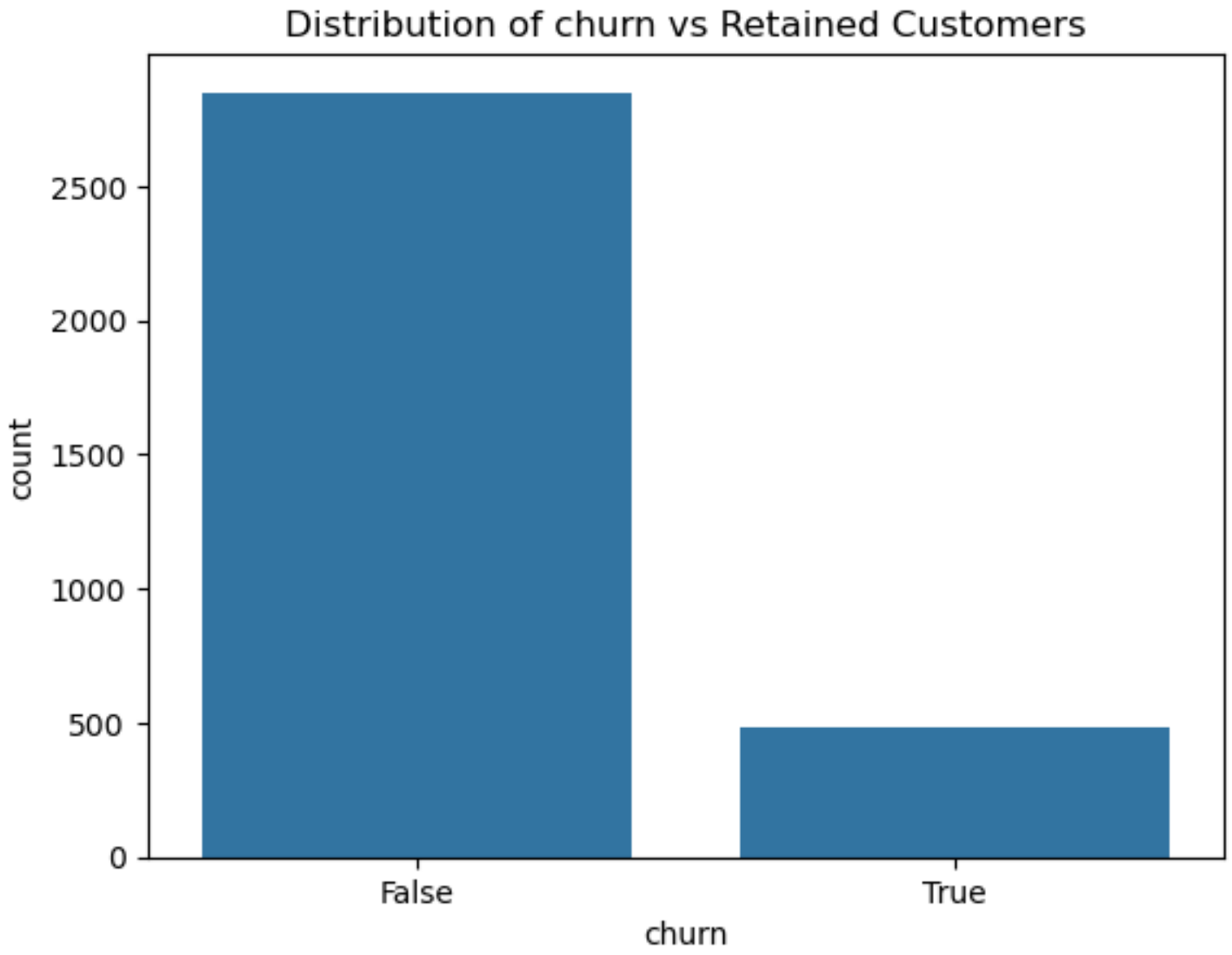
This dataset contains customer's information such as

- Account length
- service usage
- charges and customer service calls
- churn status.

These features will be used in analysis to help the company implement targeted incentives, improve service quality, and enhance customer satisfaction which will result in maximizing retention and profitability

DISTRIBUTION OF CHURN VERSUS RETAINED CUSTOMERS

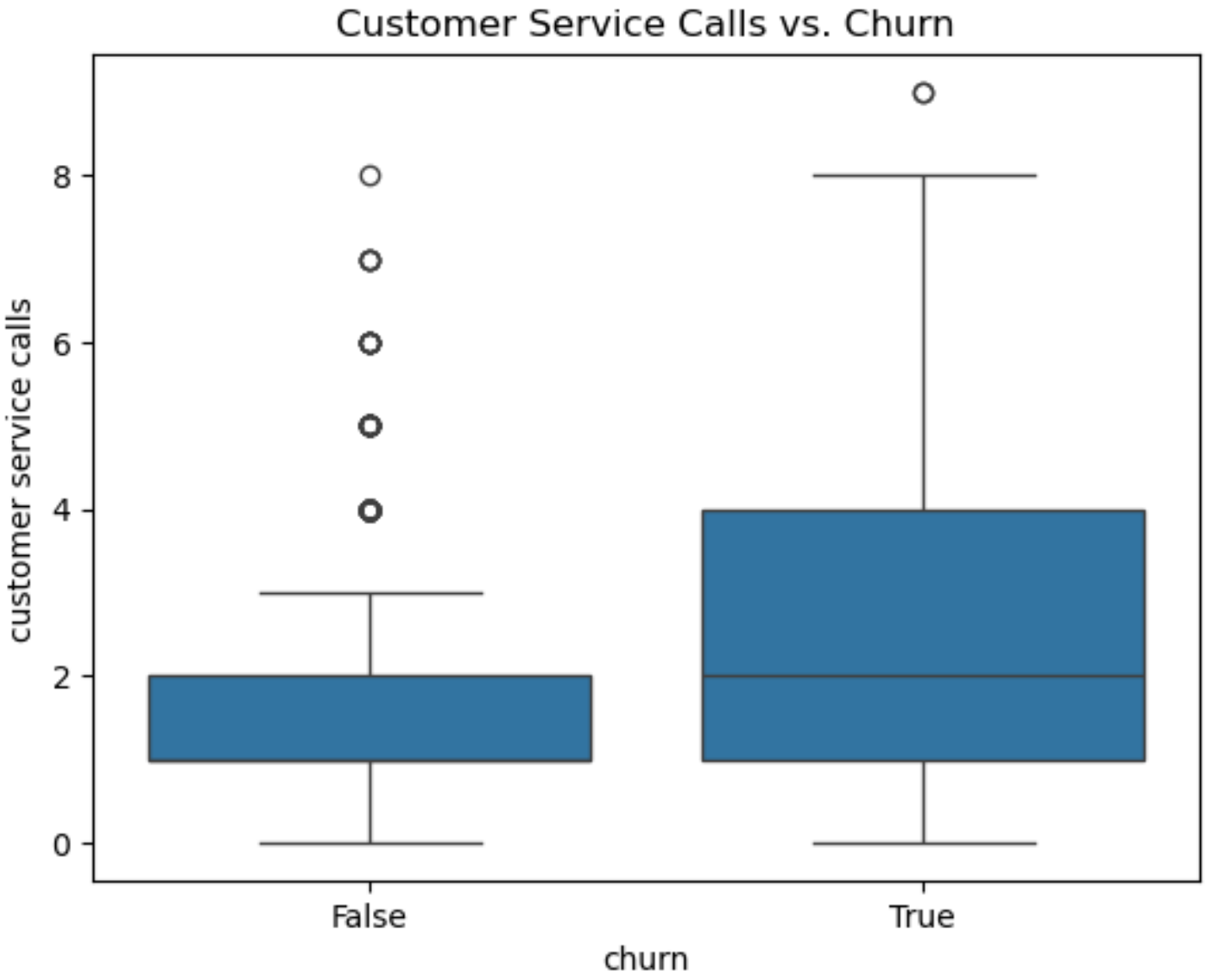
There is a higher number of Retained customers compared to the churn customers.



DISTRIBUTION OF CHURN VERSUS CUSTOMER SERVICE CALLS

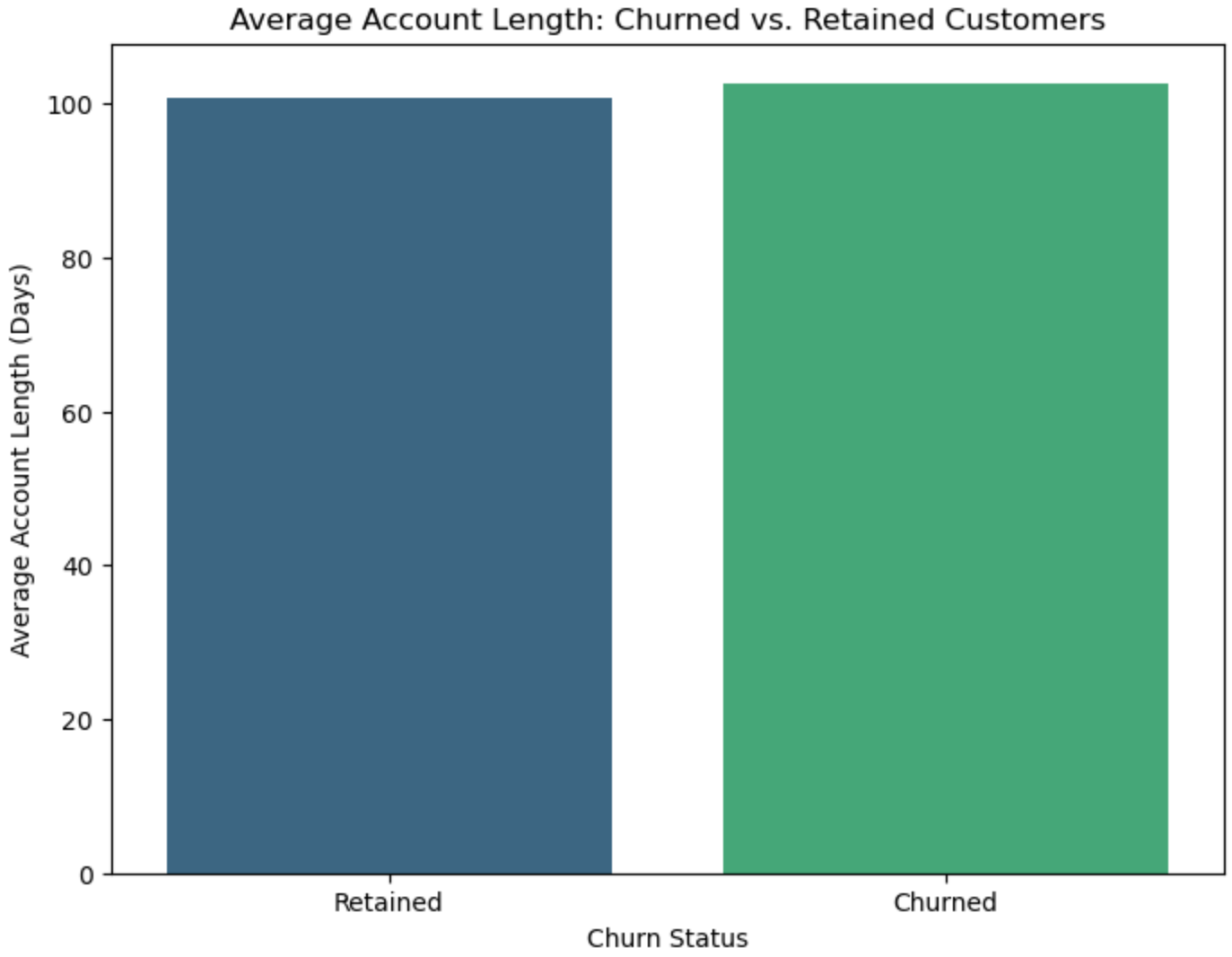
The number of customers who Churn tend to have more complaints .

This could mean there is poor customer service



DISTRIBUTION OF CHURN VERSUS ACCOUNT LENGTH

There is a slight difference between the Average Account Length of the churned and the Retained customers, Although the number of churned customers is still higher



KEY FINDINGS

Random Forest Classifier

It has an accuracy score of 93% which is better than the Decision Tree Classifier The ROC AUC score is at 90% which is very good. Recall is 73% which is a good improvement .It will be able to identify more churners Precision is at 76% which is a slight drop but good for handling the False Positives. the F1 score is at 75% which is an increase making the model more balanced at this point.

CONCLUSION

The analysis of various models reveals that while Logistic Regression struggles with imbalanced data and low recall, tree-based models like Decision Tree and Random Forest perform significantly better. Hyperparameter tuning improved the Decision Tree's performance, but it still faced challenges with recall. The Random Forest Classifier emerged as the most balanced model, with high accuracy, ROC AUC, and recall, making it the best choice for identifying churners effectively

RECOMMENDATION

Adopt the Random Forest Model:
It provides the best balance of accuracy (93%), ROC AUC (90%), and recall (73%), making it the most reliable model for churn prediction.