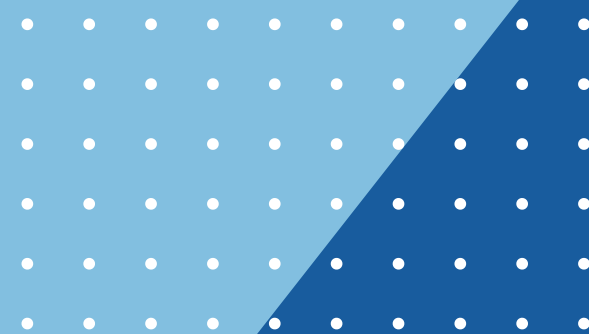


# SYRIATEL CUSTOMER CHURN PROJECT

A project by Mahmoud Yuna





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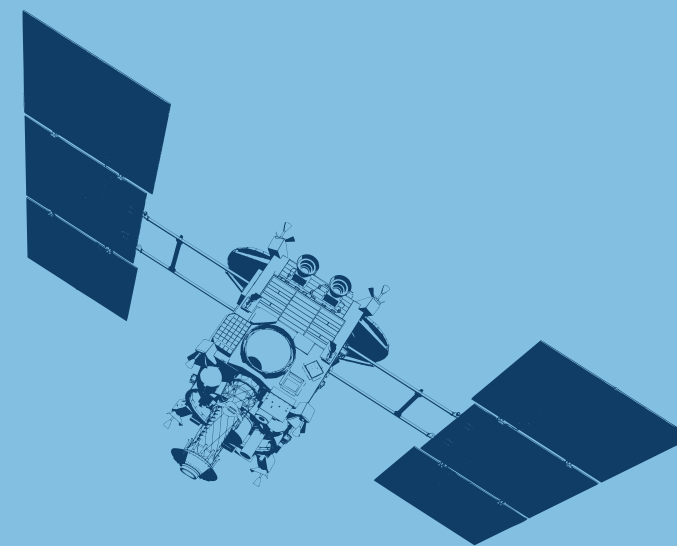
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- Evaluation
- Results
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# BUSINESS UNDERSTANDING



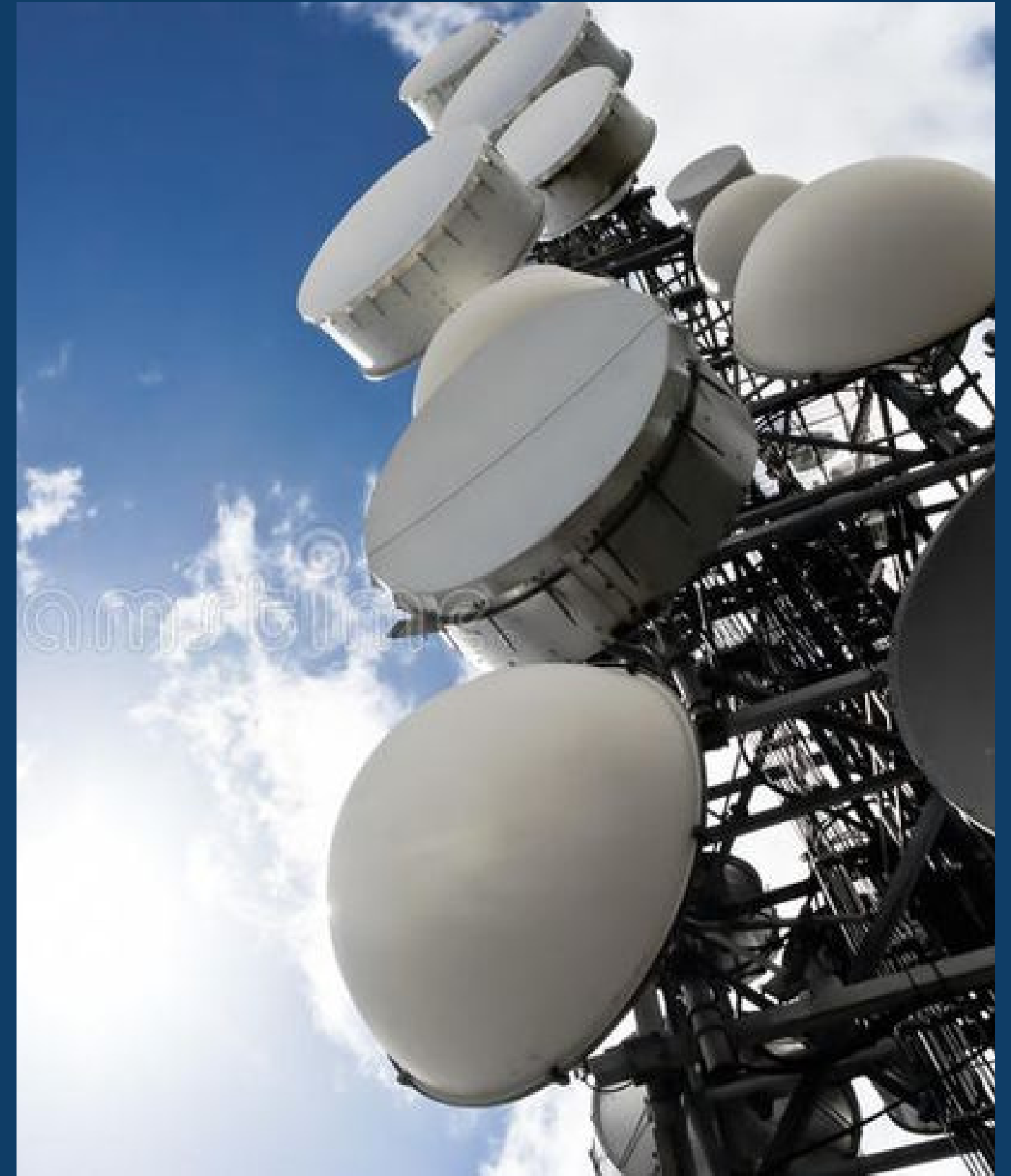
## Introduction

Customer churn, the loss of paying subscribers, is a significant challenge for telecommunication companies like SyriaTel. It leads to reduced revenue, higher customer acquisition costs, and diminished brand loyalty. To proactively address churn and improve customer retention, SyriaTel requires a robust and data-driven approach.

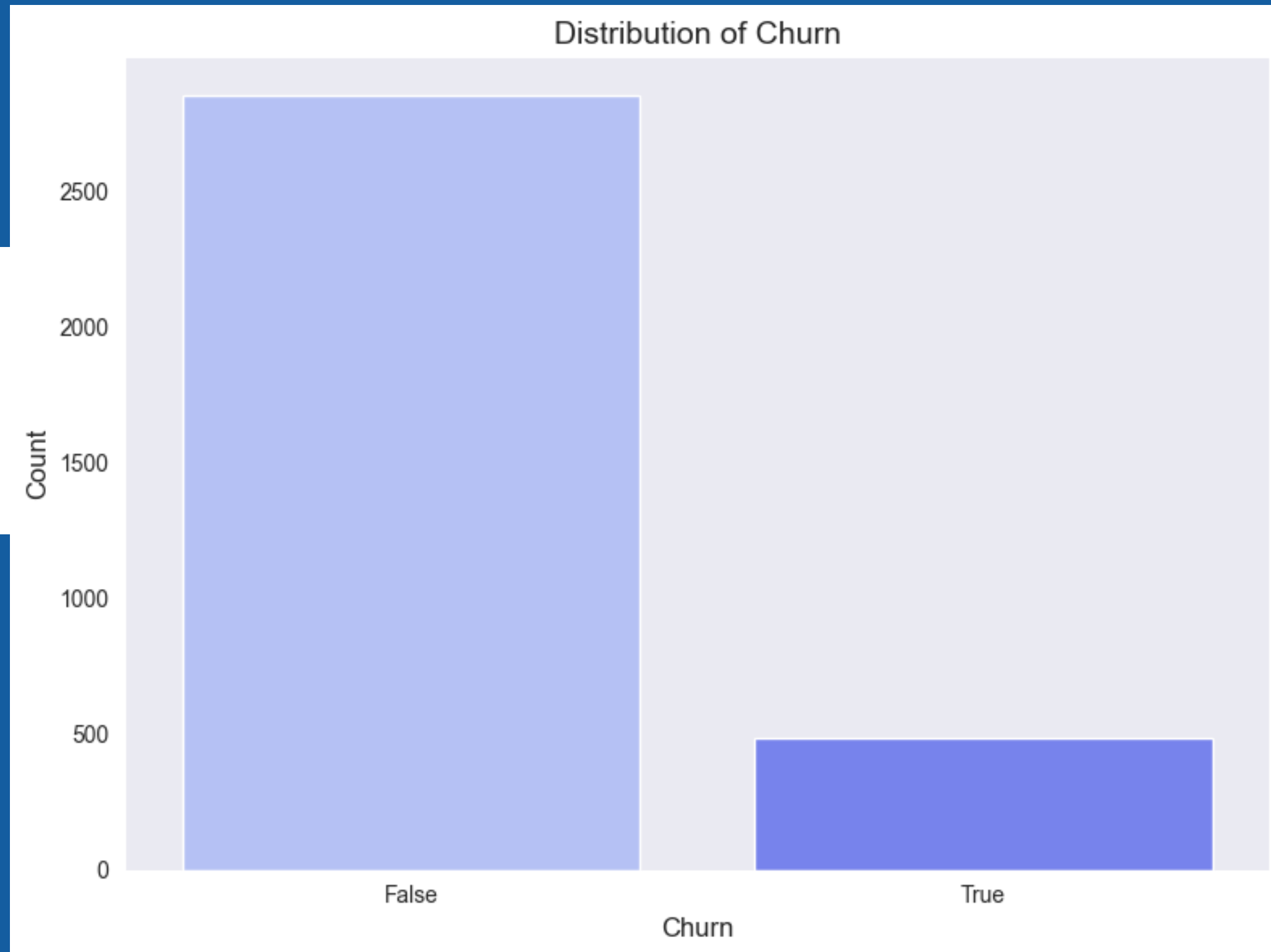


# PROBLEM STATEMENT

This project aims to develop a customer churn prediction model using SyriaTel's customer data. The model will identify customers at high risk of churning, enabling SyriaTel to implement targeted retention strategies and minimize customer loss.



# DATA ANALYSIS



**No of customers:**

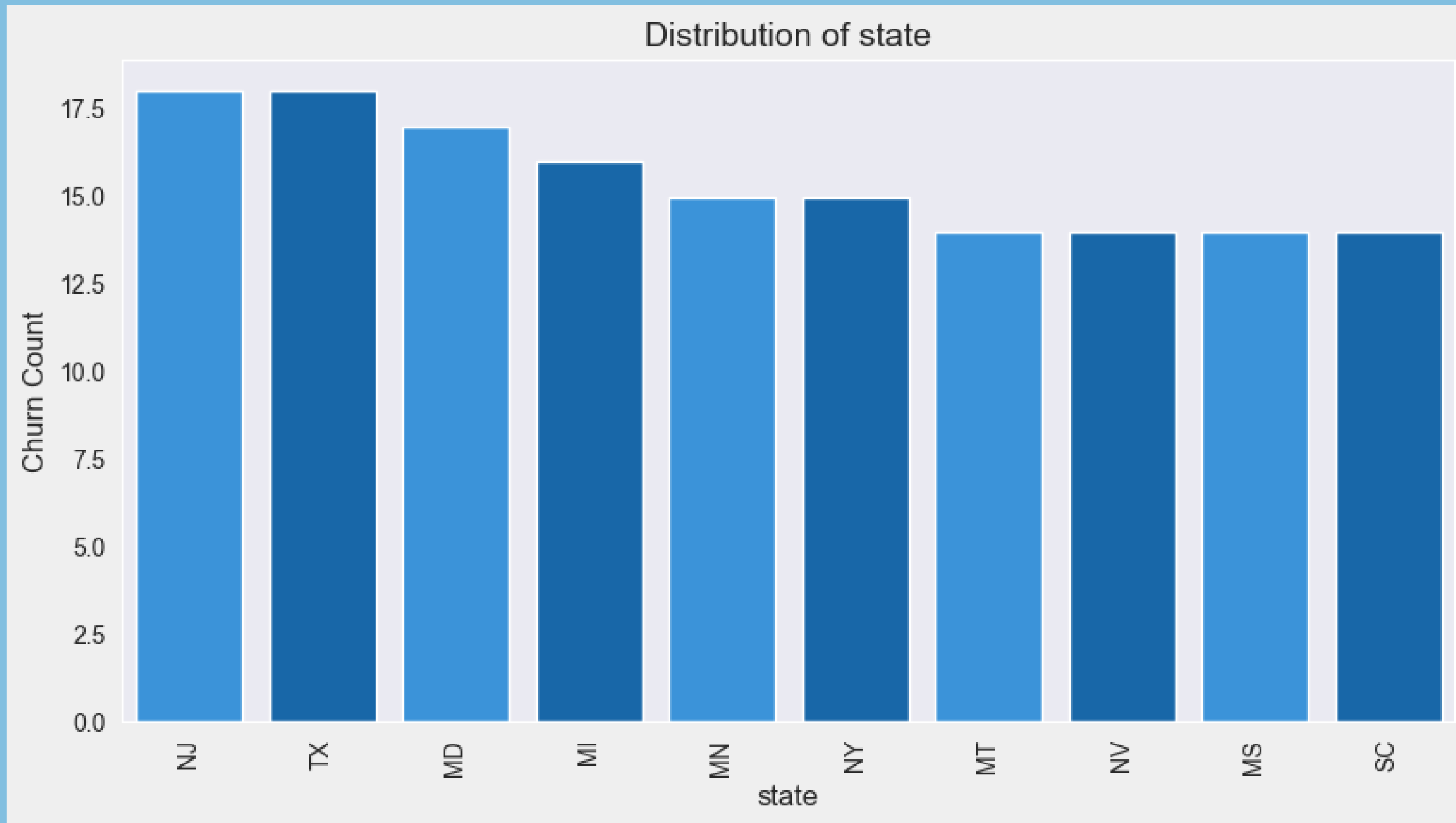
3333

**Customers that churned:**

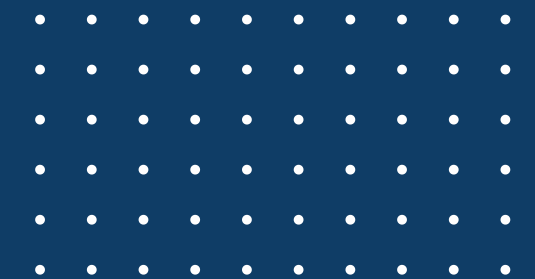
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# DATA ANALYSIS

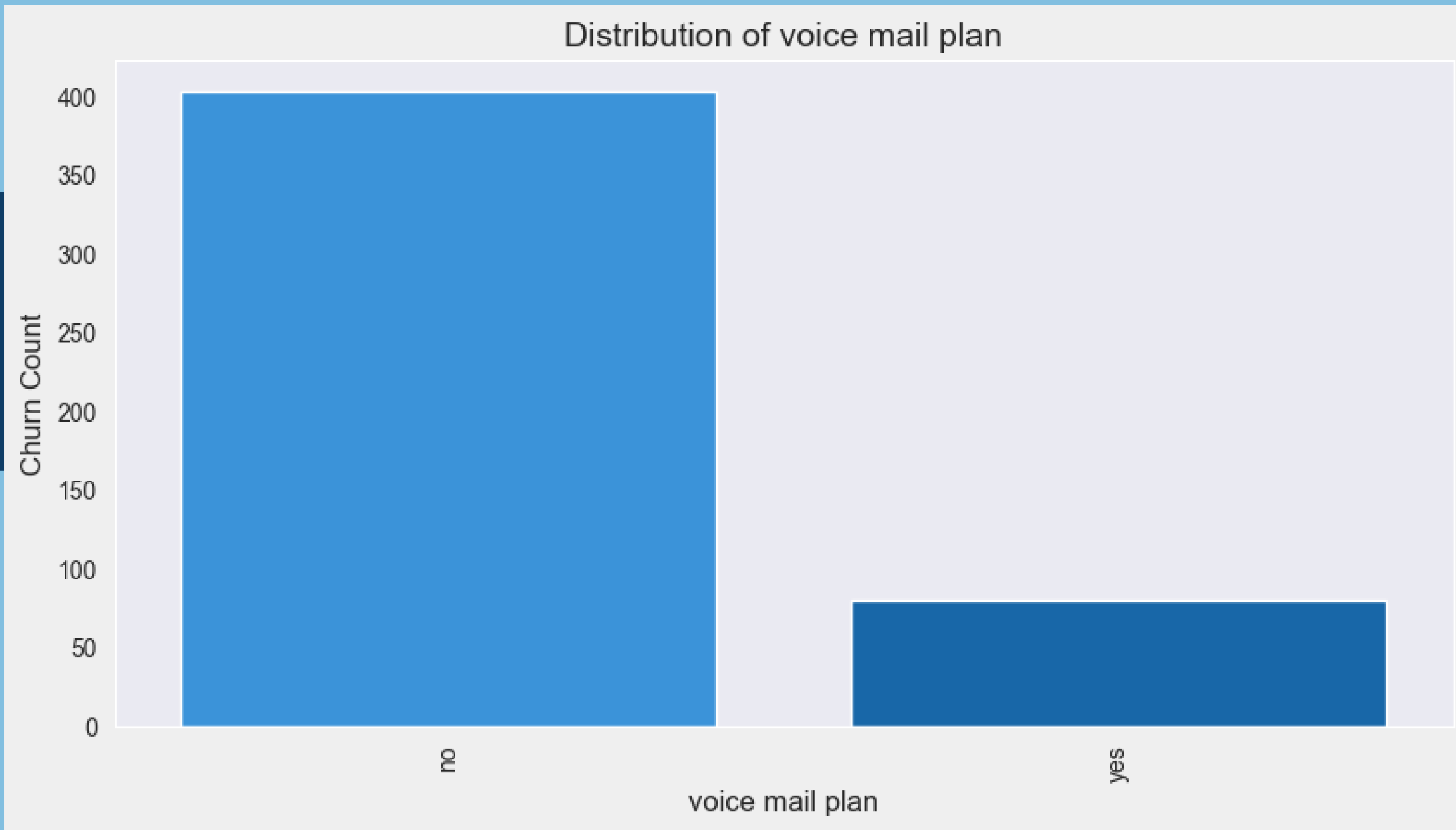
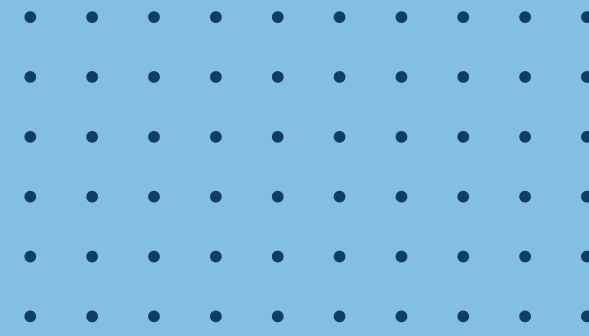
## Bivariate Analysis



The largest portion of customers who churned hails from New Jersey, Texas, Maryland, Miami, and New York.



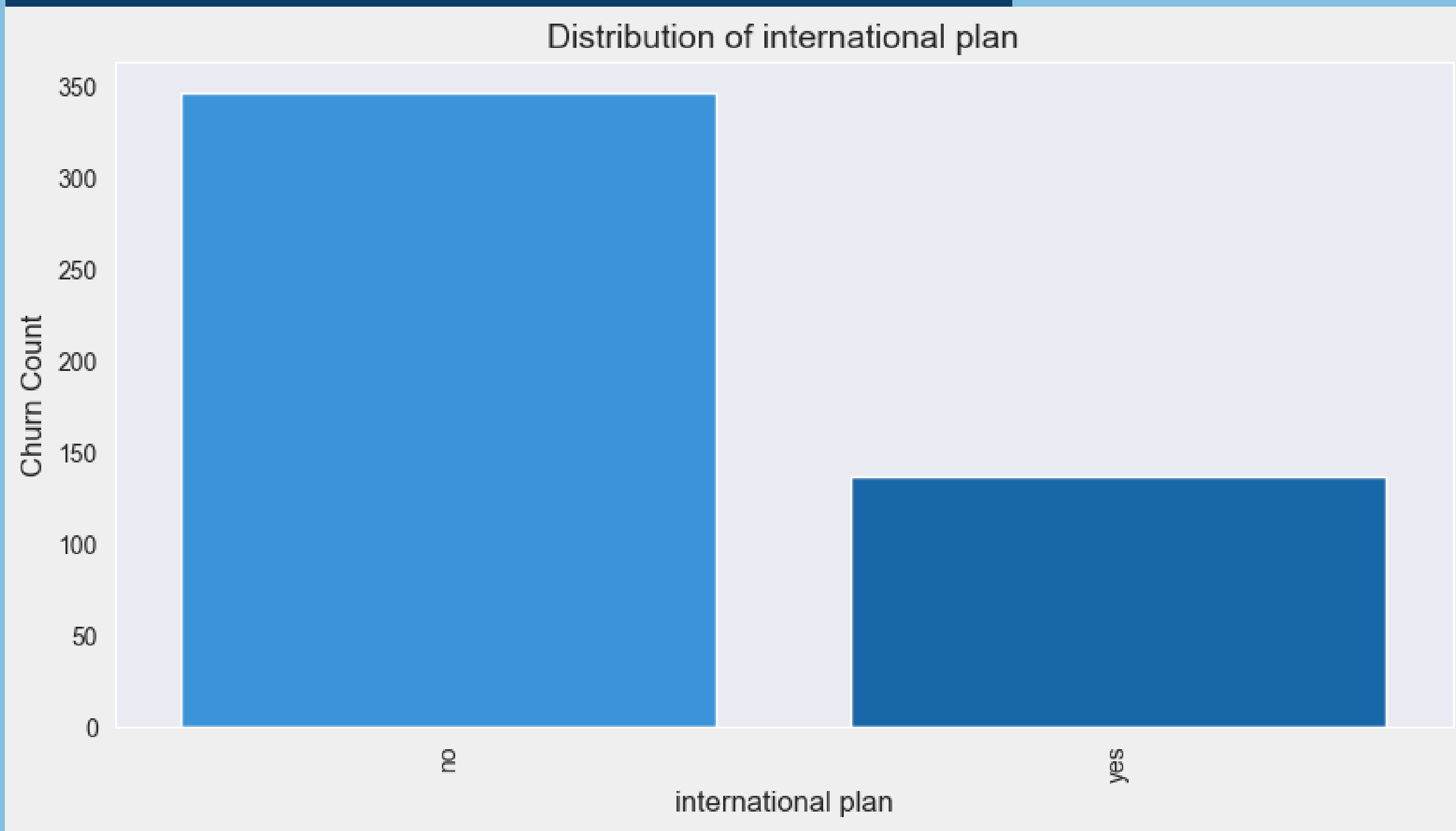
# DATA ANALYSIS



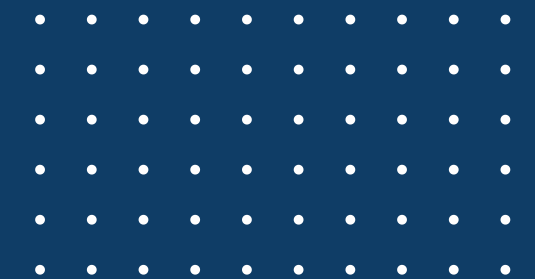
Most of the customers who churned were not subscribed to a voicemail plan.

# DATA ANALYSIS

## Bivariate Analysis



The majority of customers who churned were not enrolled in an international plan.





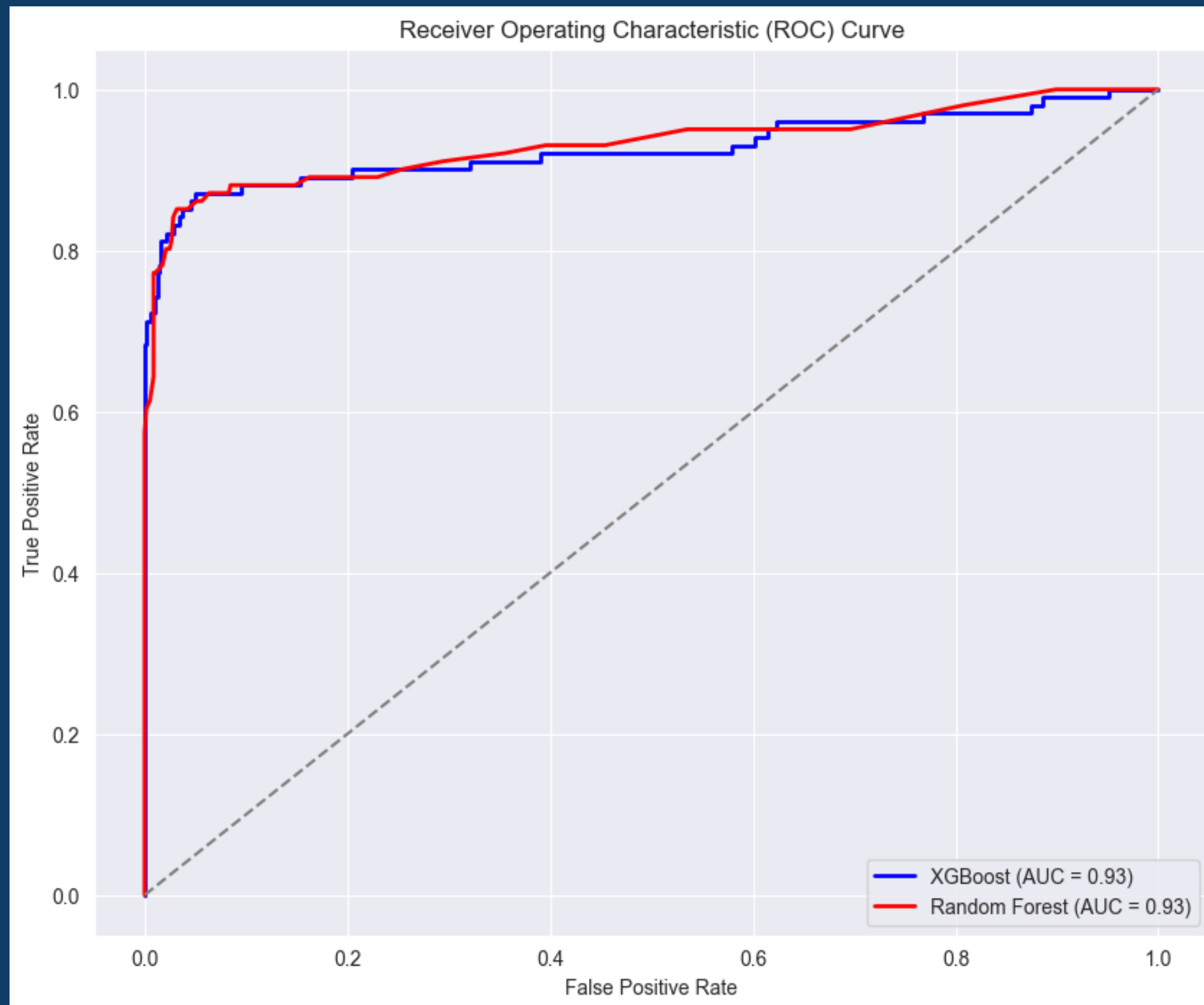
# MODELLING

For the SyriaTel Customer Churn project, several machine learning algorithms were used to train the predictive models. These algorithms include:

1. Logistic Regression
2. Decision Tree
3. Random Forest
4. Gradient Boosting

XG Boost was the best performing model in the analysis

# EVALUATION

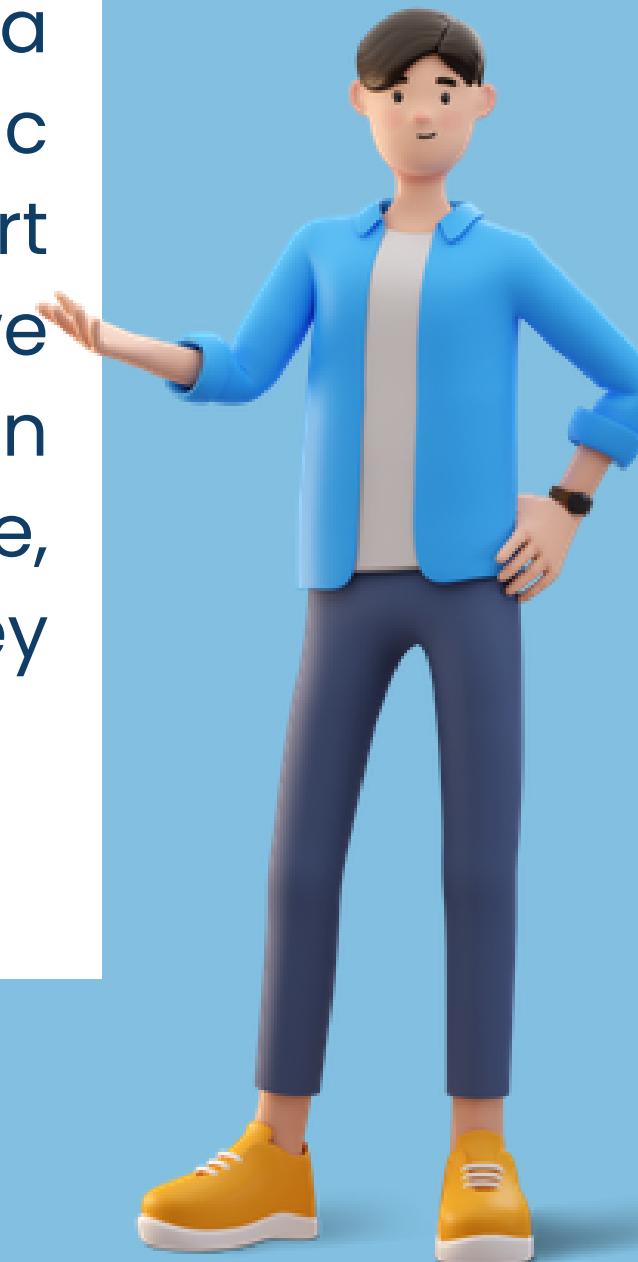


XGBoost model had higher values across all metrics, indicating better overall performance.

# CONCLUSION



In this project, we successfully built machine learning models to predict customer churn for SyriaTel. By analyzing customer data and employing various classification algorithms, including Logistic Regression, Decision Trees, Random Forests, XGBoost, Support Vector Machines (SVM), and K-Nearest Neighbors (KNN), we achieved significant insights into factors influencing churn behavior. Through data preprocessing, handling class imbalance, model training, evaluation, and feature selection, we identified key predictors of churn and developed accurate predictive models.



# Recommendations

1. **Focus on Customer Retention Strategies:** Based on our analysis, implementing targeted customer retention strategies, especially for customers with characteristics identified as high churn risk, can help reduce churn rates and improve overall customer satisfaction.
2. **Enhance Service Offerings:** Understanding the importance of features like international plans, call durations, and customer service interactions, SyriaTel can tailor its service offerings to better meet the needs of its customers, potentially reducing dissatisfaction and churn.
3. **Continuous Model Monitoring and Improvement:** While our models achieved high accuracy and performance, continuous monitoring and periodic retraining with updated data are recommended to ensure their effectiveness over time. Additionally, exploring advanced modeling techniques and incorporating new features could further enhance predictive accuracy.
4. **Customer Feedback Loop:** Establishing a feedback loop to gather insights directly from customers can provide valuable information for refining models and improving services. Incorporating customer feedback into model training and decision-making processes can lead to more accurate predictions and better outcomes.
5. **Investment in Data Analytics and Infrastructure:** Given the importance of data-driven decision-making in reducing churn and improving customer satisfaction, investing in data analytics capabilities and infrastructure can enable SyriaTel to extract actionable insights from large volumes of data efficiently and effectively.

**THANK YOU !**

