



PHASE 3 PROJECT

# **CUSTOMER CHURN PREDICTION**

A sales and marketing perspective

**ESTHER OMULOKOLI**

# WHY CHURN MATTERS

## REVENUE LOSS

Revenue loss due to lost customers

## CUSTOMER ACQUISITION

Cost of acquiring new customers is higher than retaining current ones

## SUSTAINABILITY

Long-term profitability and market positioning

## REPUTATION

Maintain brand reputation and investor confidence

# DATA OVERVIEW

## SyriaTel Customer Churn Dataset

- This dataset is from Kaggle:  
<https://www.kaggle.com/code/becksddf/churn-in-telecoms-dataset>
- Contains 3333 entries and 21 columns
- Includes customer information and service plans.

This data will inform churn prediction and retention strategies.



# EDA: IDENTIFYING PATTERNS

*CUSTOMERS LIKEY TO CHURN:*

CUSTOMER SERVICE  
CALLS

INTERNATIONAL PLAN

TOTAL DAY MINUTES  
AND CHARGES

VOICEMAIL PLAN

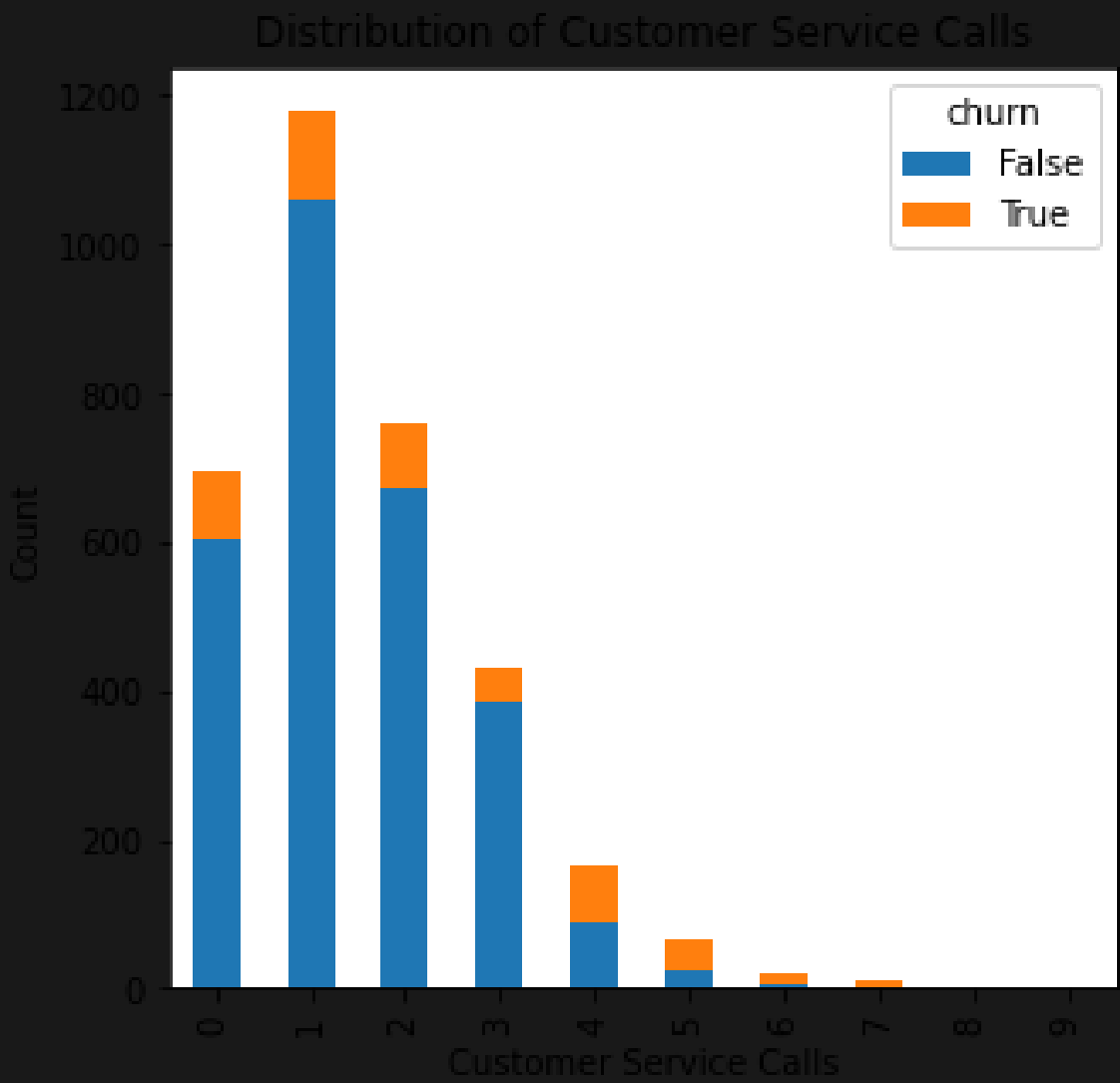


# WHY RECALL MATTERS:

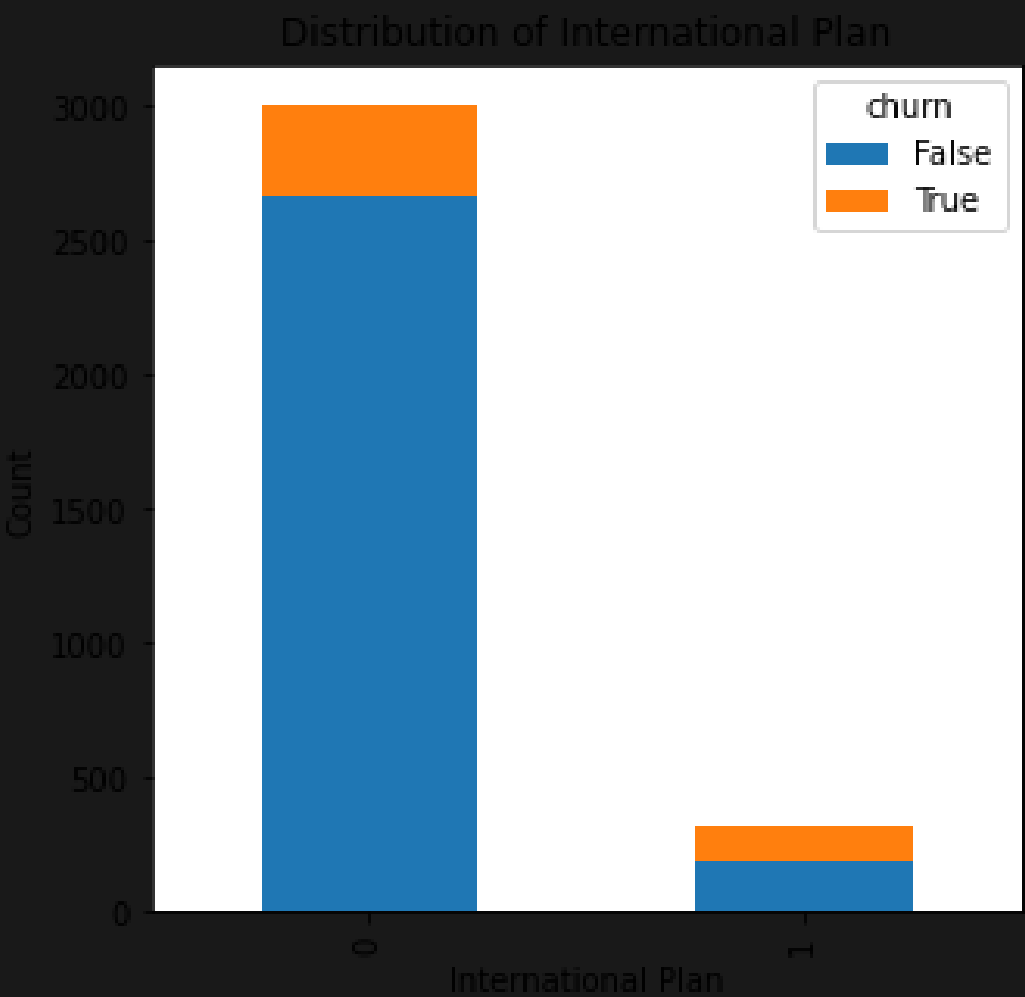
- Recall represents our model's capability to capture true churn cases. It measures the proportion of actual churners correctly identified by the system.
- A higher recall means we minimize the risk of overlooking customers who may leave our services.



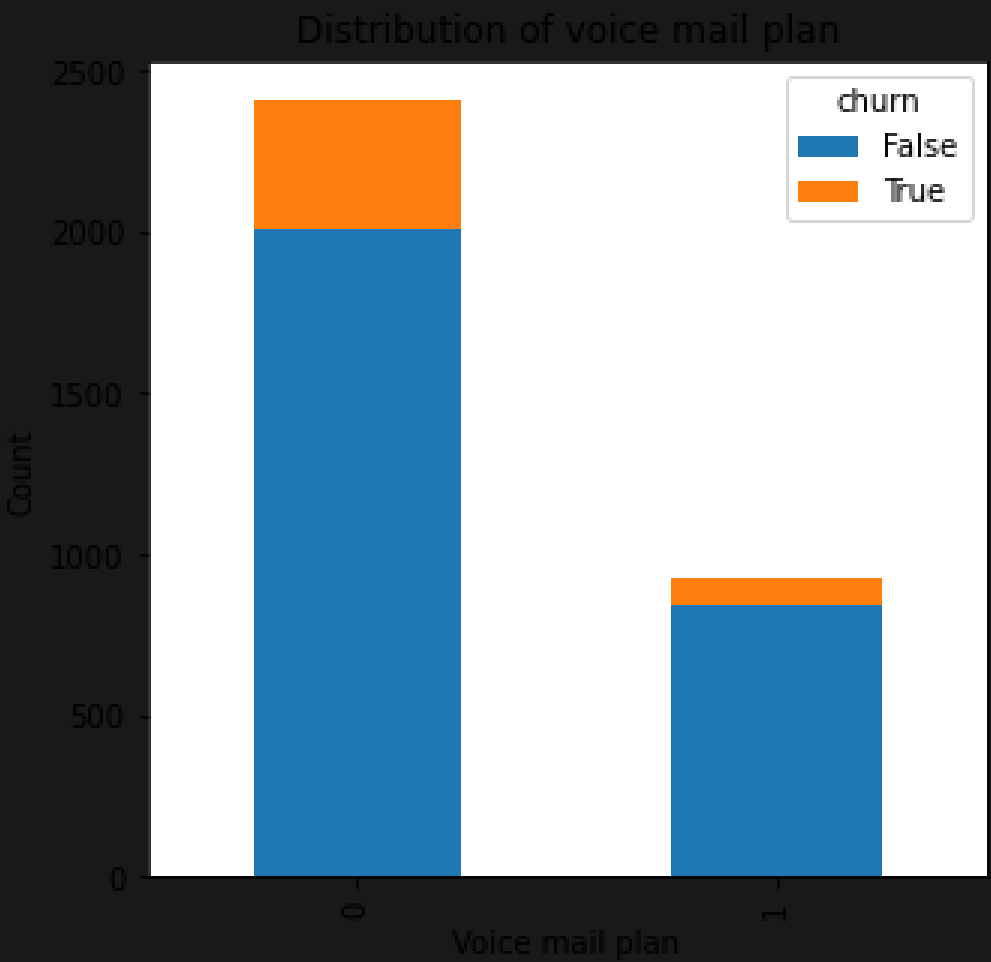
# DISTRIBUTION OF CUSTOMER SERVICE CALLS



# DISTRIBUTION OF CUSTOMERS WITH INTERNATIONAL PLAN

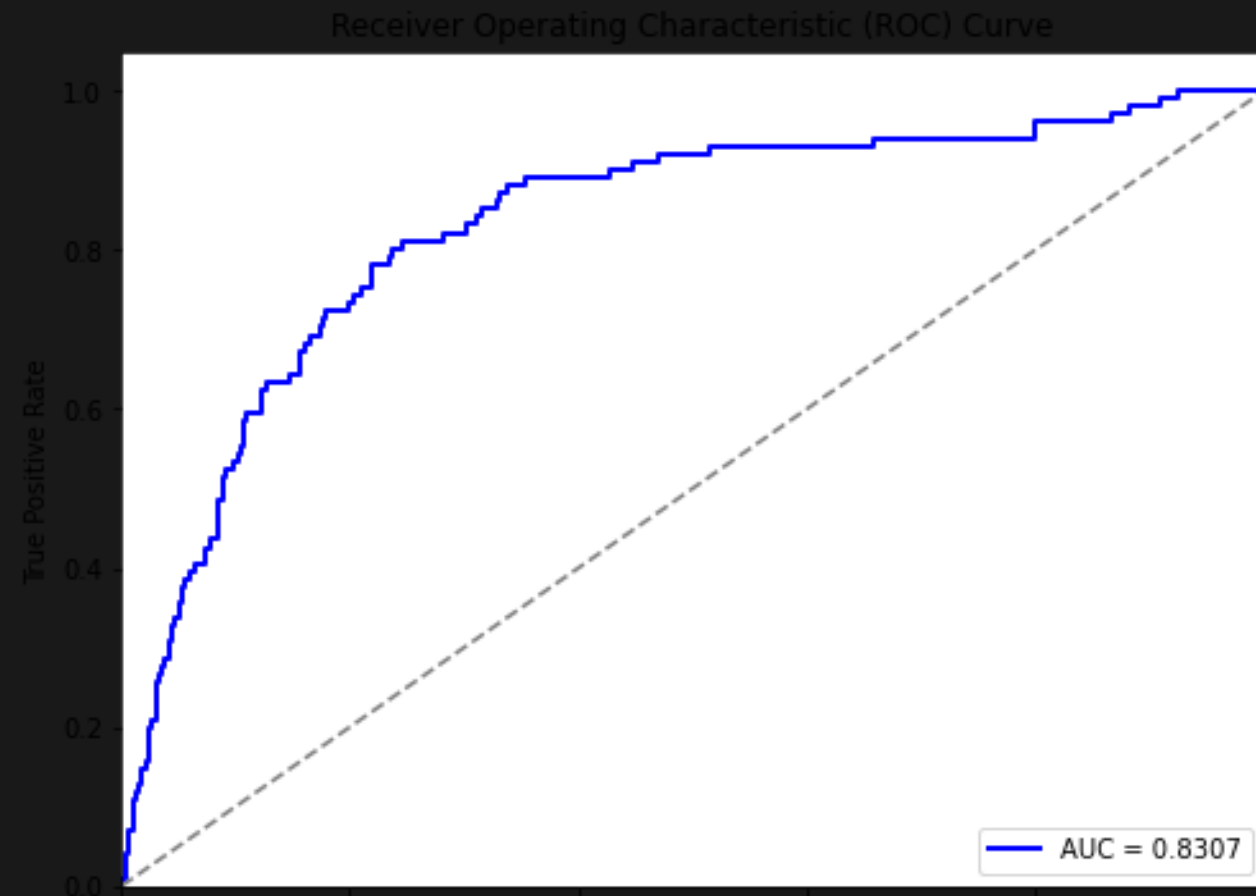


# DISTRIBUTION OF CUSTOMERS WITH VOICEMAIL



# PREDICTIVE MODELS

## LOGISTIC REGRESSION : ROC AND AUC CURVES



Results from the simple logistic regression indicate that the model's precision is low. It is a worthwhile tradeoff to get some false positives as we focus on improving recall

## RANDOM FOREST CLASSIFICATION

Most metrics improved in this model but recall was still around 72% meaning there is room for improvement

## DECISION TREE CLASSIFICATION

The Decision Tree model performs reasonably well in predicting customer churn for Syria Tel. However, there is room for improvement, especially in recall (identifying more actual churn cases).



# Best model: Logistic Regression

- Logistic Regression yielded the best recall score at 90%
- It is easy to interpret so the marketing team can point out which features affect churn
- It is also simple and straightforward to implement and explain
- Because the relationship between features and churn is approximately linear the model performs well and is not complex



# **MITIGATION STRATEGIES:**

## **PROPOSALS TO REDUCE CHURN:**

- **PERSONALIZED OFFERS OR DISCOUNTS.**
- **IMPROVED CUSTOMER SERVICE, PRICING AND NETWORK QUALITY**
- **TARGETED MARKETING CAMPAIGNS.**
- **ESTABLISH A FEEDBACK LOOP BETWEEN DATA SCIENCE, SALES AND MARKETING TEAMS**

# CONCLUSION

**THIS PROJECT EQUIPS SYRIATEL WITH ACTIONABLE INSIGHTS TO REDUCE CHURN AND ENHANCE CUSTOMER RETENTION.**