



SYRIATEL CUSTOMER CHURN

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PREDICTING CUSTOMER CHURN MODEL

In the telecommunications industry, customer churn presents a significant challenge. The objective is to develop a model that predicts whether a customer will soon terminate their services. This binary classification task aims to uncover patterns in customer behavior and demographic data that may indicate a propensity to churn. The ultimate goal is to aid in reducing the financial impact of customer churn by implementing proactive retention strategies.

PROBLEM STATEMENT

The project targets telecommunications companies, particularly those interested in understanding and predicting customer churn. Specifically, it aims to provide insights into the factors influencing customer attrition within the telecom industry. The dataset enables telecom companies to identify potential churn risks and implement targeted strategies to retain customers and improve overall satisfaction.



OBJECTIVES

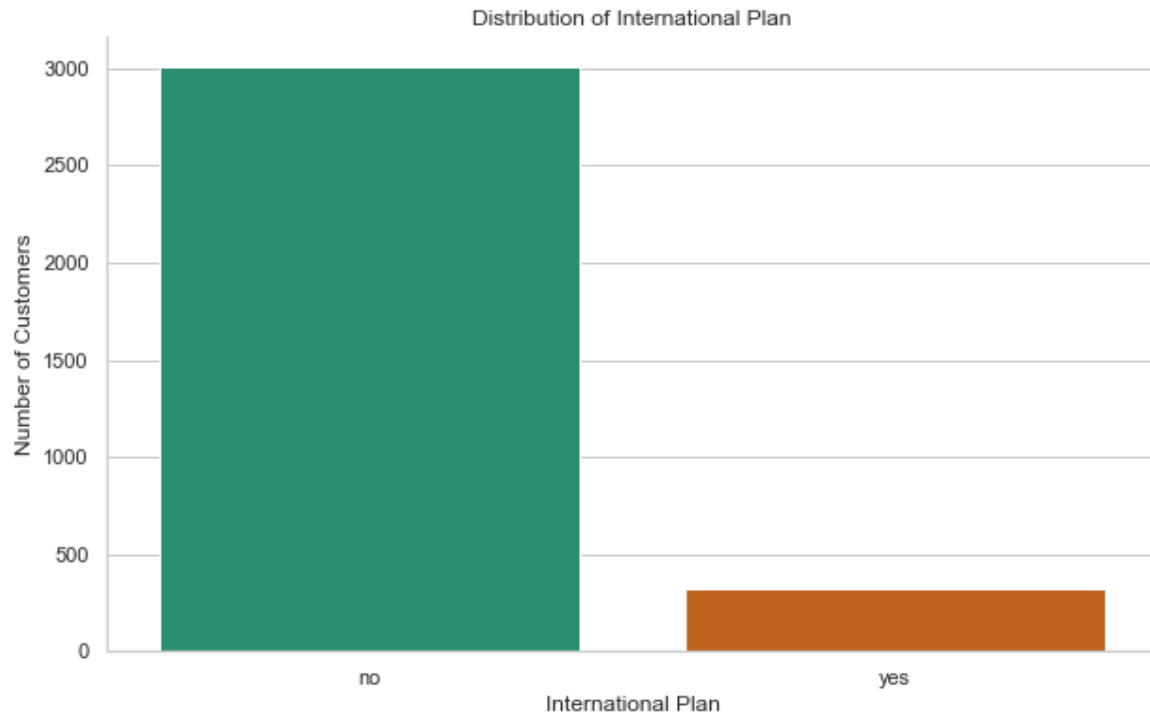
**1. MARKET GAP DEVELOP AND
OPTIMIZE CLASSIFICATION
MODELS**

**2. CONDUCT
EXPLORATORY
DATA ANALYSIS
(EDA)**

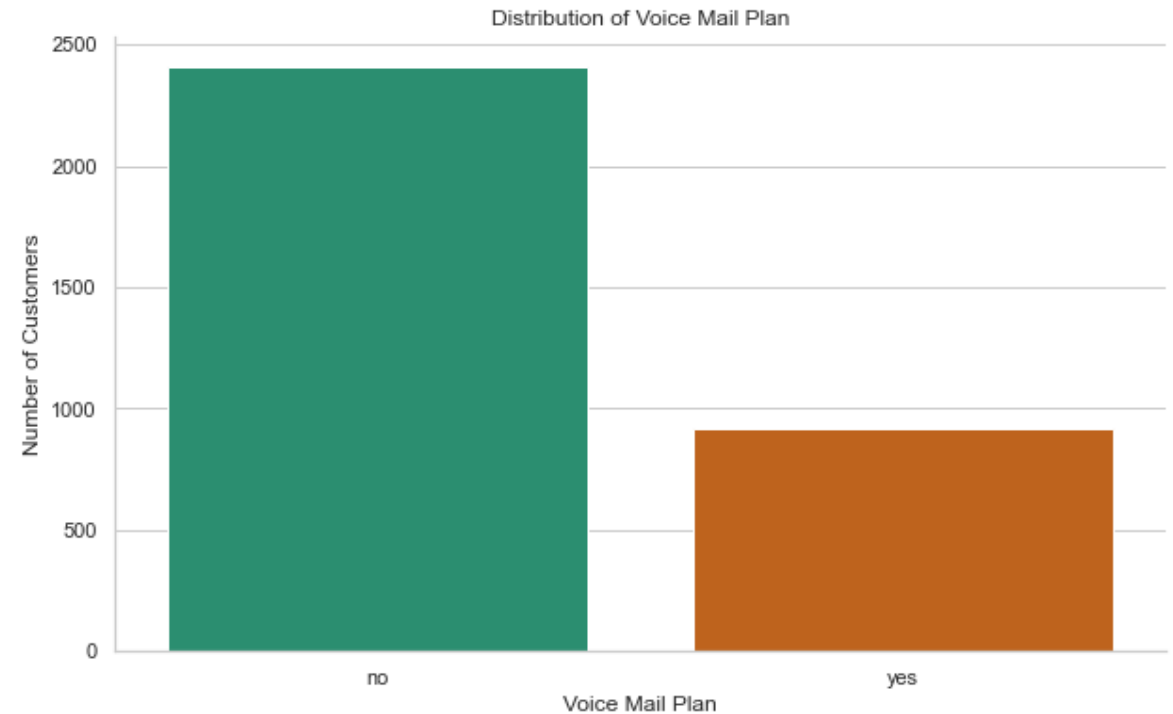
**3. GENERATE INSIGHTS
AND
RECOMMENDATIONS**

MAJOR ANALYSIS OF THE DATA

A majority of the customers do not have an international plan.



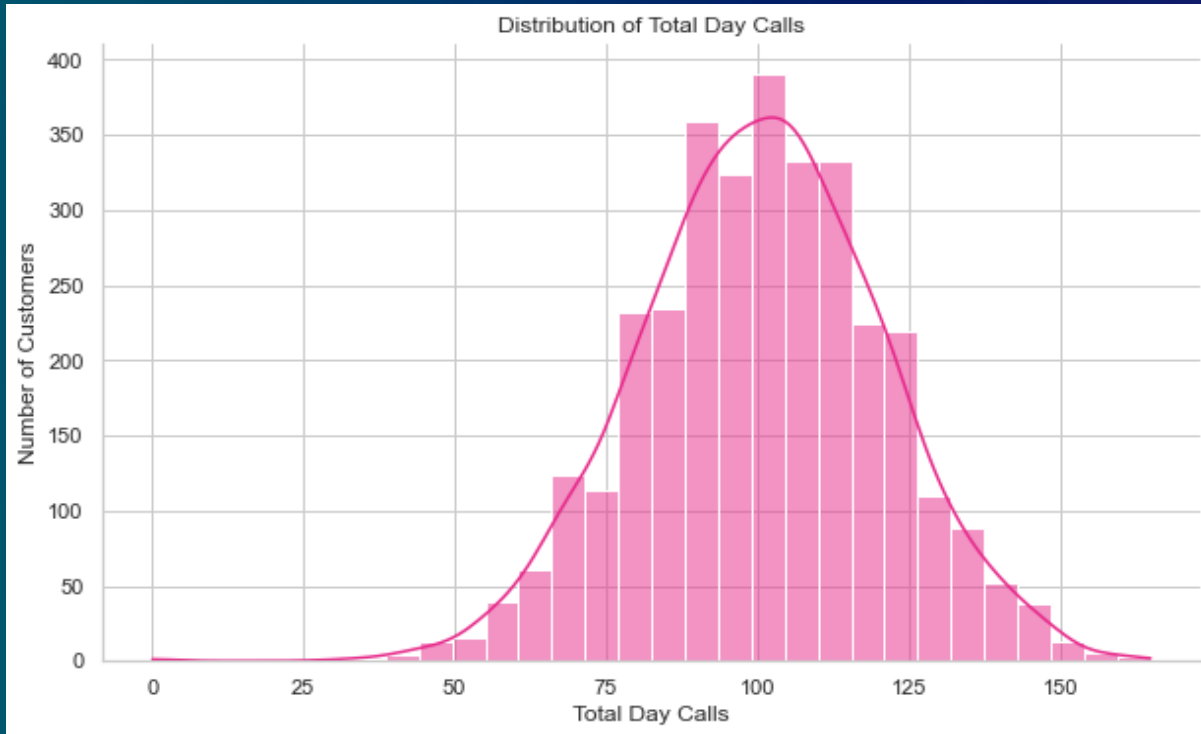
The bar plot visualizes the distribution of customers based on whether they have a voice mail plan or not. It shows that Majority of the customers do not have a Voice mail plan.



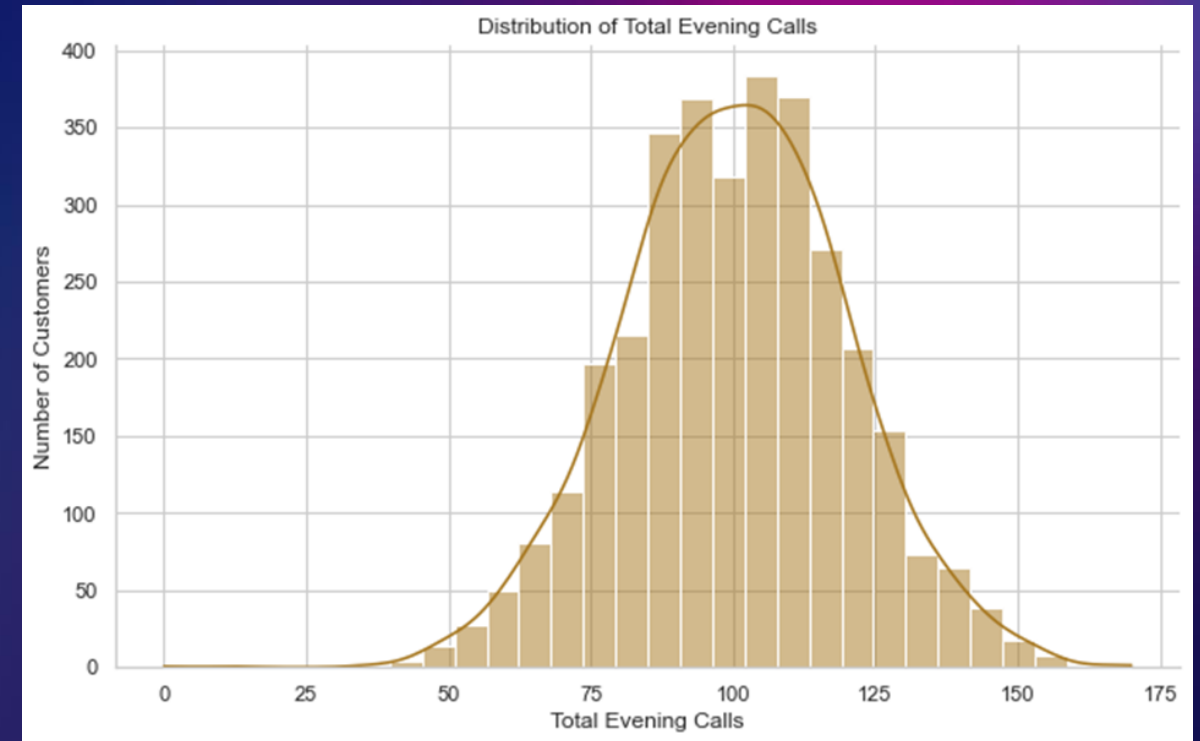
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Analysis of the data

The highest number of total day calls observed is 105, which is common among the majority of customers. The second-highest count is approximately 80 total day calls.



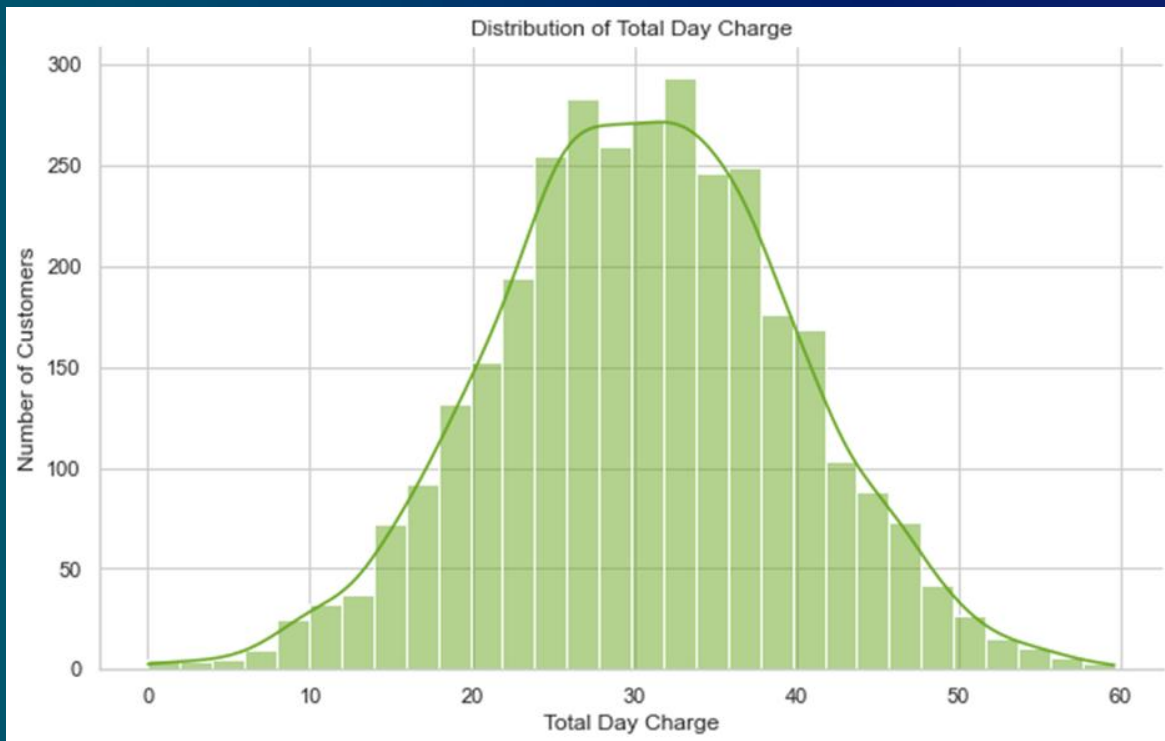
The highest number of total evening calls observed is approximately between 90- 110.



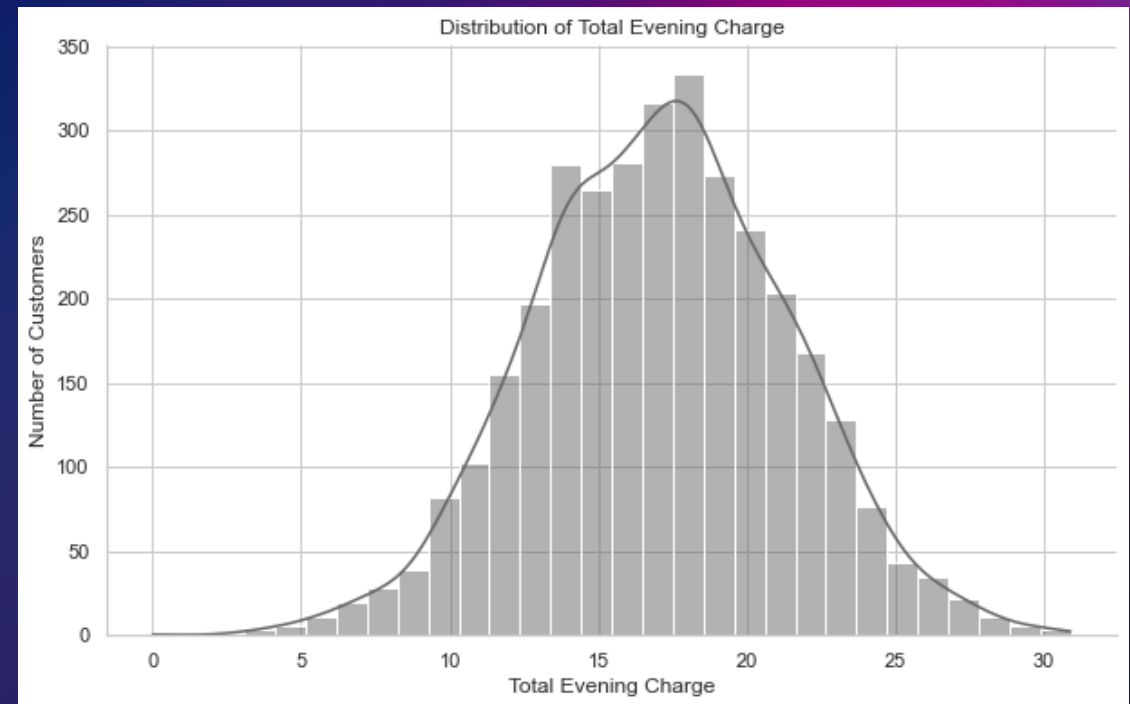
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Analysis of the data

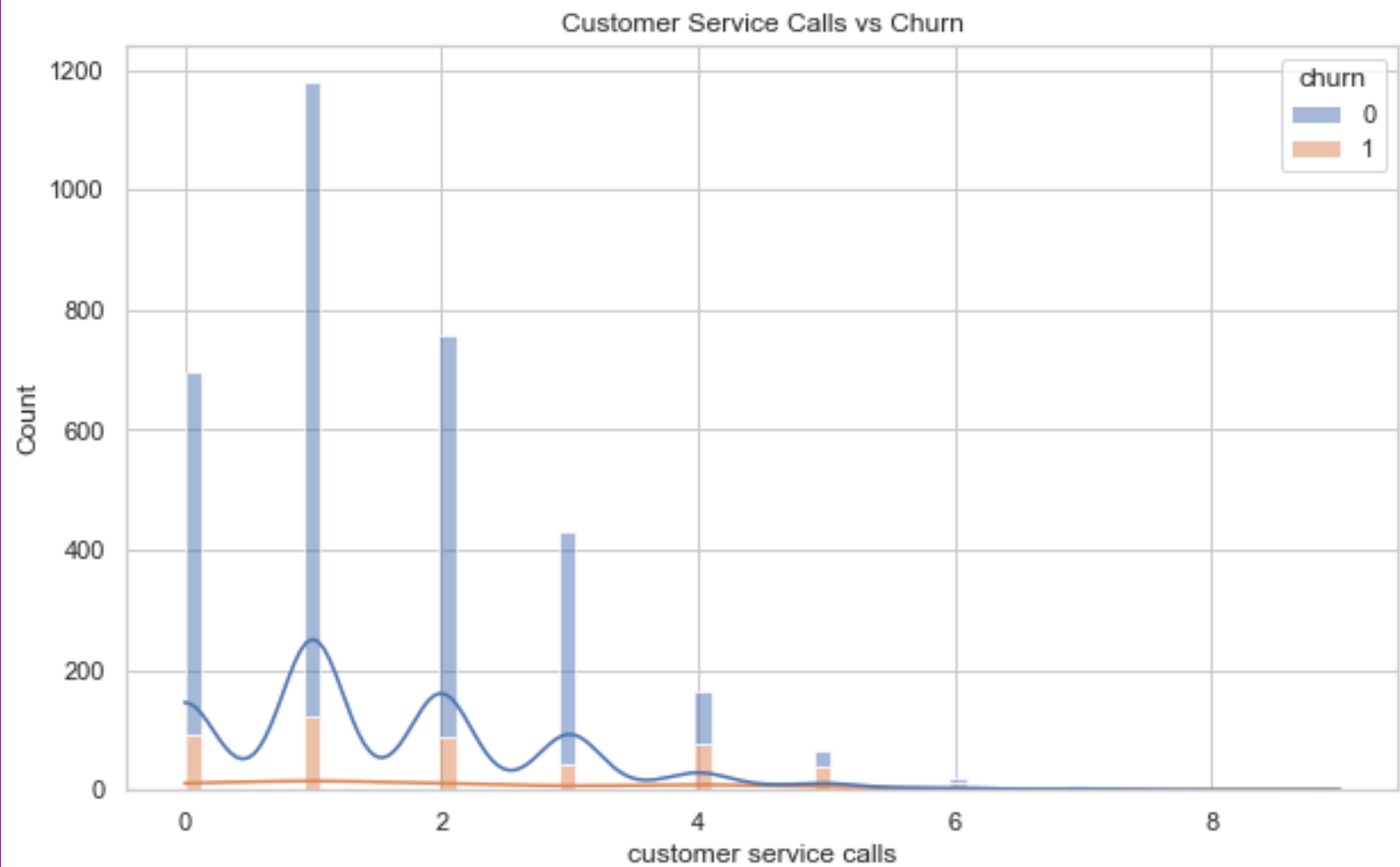
The highest total day charge recorded is around 32, prevalent among most customers, while the second-highest is approximately 26.



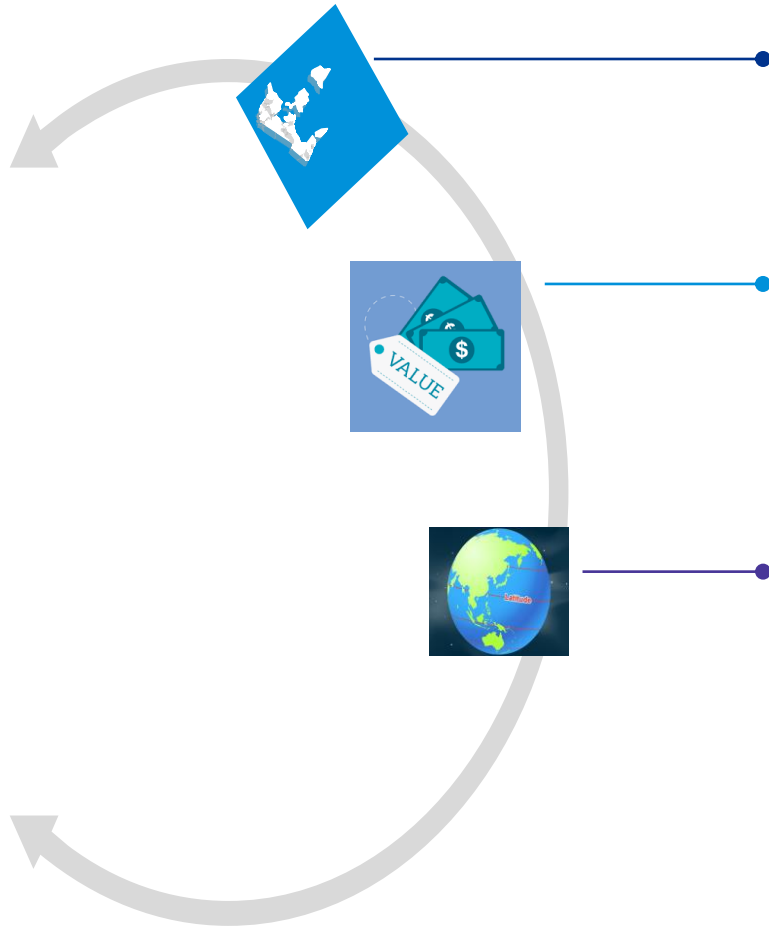
The highest total evening charge recorded by most customers is between 17-18.



A predominant pattern emerges among churned customers from the telecom service: a significant portion of them initiated at least one customer service call. This suggests that these customers likely sought assistance to resolve issues they faced with various aspects of the service, billing, or other elements of their experience. Consequently, it underscores the need for a thorough analysis of the feedback provided during these interactions. Such analysis could unveil valuable insights into the reasons underlying their decision to churn.



Main Observations



Major comparisons between day, night and evening show:

- i) Usage Intensity: The analysis suggests that usage intensity varies across different time periods. While the highest number of total day calls is common among the majority of customers, the number of evening and night calls shows a more consistent pattern.
- ii) Charge Patterns: Although the highest total day charge is relatively high, the highest total evening and night charges are comparatively lower, indicating potential differences in pricing or usage patterns across these time periods.

A majority of the customers were not churned, but approximates 400 were churned.



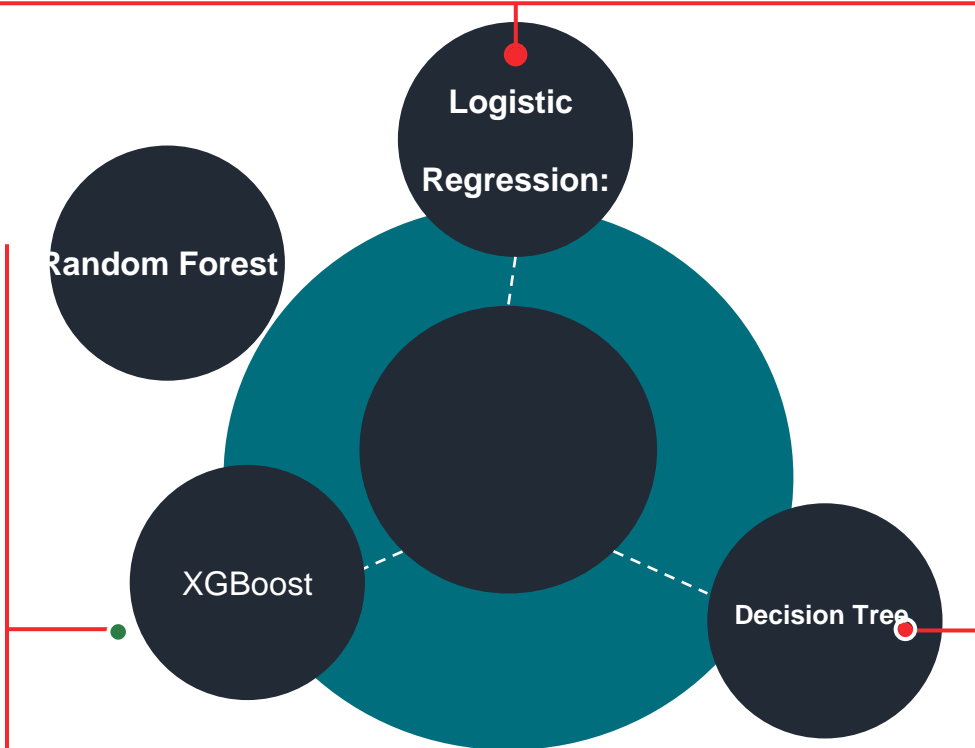
MODEL EVALUATION



- ☑ Logistic Regression has high accuracy but low precision and recall, indicating poor performance in identifying churned customers. The AUC-ROC score is low, reflecting limited overall performance

Random Forest shows high accuracy and precision but lower recall, meaning it misses some churned customers. The AUC-ROC score indicates moderate overall performance.

XGBoost has the highest accuracy, precision, and F1-score among the models, with a good balance of recall. The high AUC-ROC score indicates excellent overall performance.



- ☑ Decision Tree demonstrates high accuracy and balanced precision and recall, indicating good performance in identifying churned customers. The AUC-ROC score suggests strong overall performance.

RECOMMENDATIONS



RECOMMENDATIONS



▪ Implement Proactive Retention Strategies:

Target high-usage customers with retention offers.

Offer personalized plans to high-usage customers.



▪ Monitor and Analyze Customer Service Interactions:

Monitor frequent customer service calls to flag churn risks.

Address common issues leading to customer service calls.



▪ Customer Segmentation:

Conduct detailed segmentation to identify different churn profiles.

Develop targeted strategies for each customer segment.



RECOMMENDATIONS



- Enhance Data Collection and Analysis:

Continuously monitor and analyze customer usage patterns.

Establish feedback mechanisms for early dissatisfaction detection.

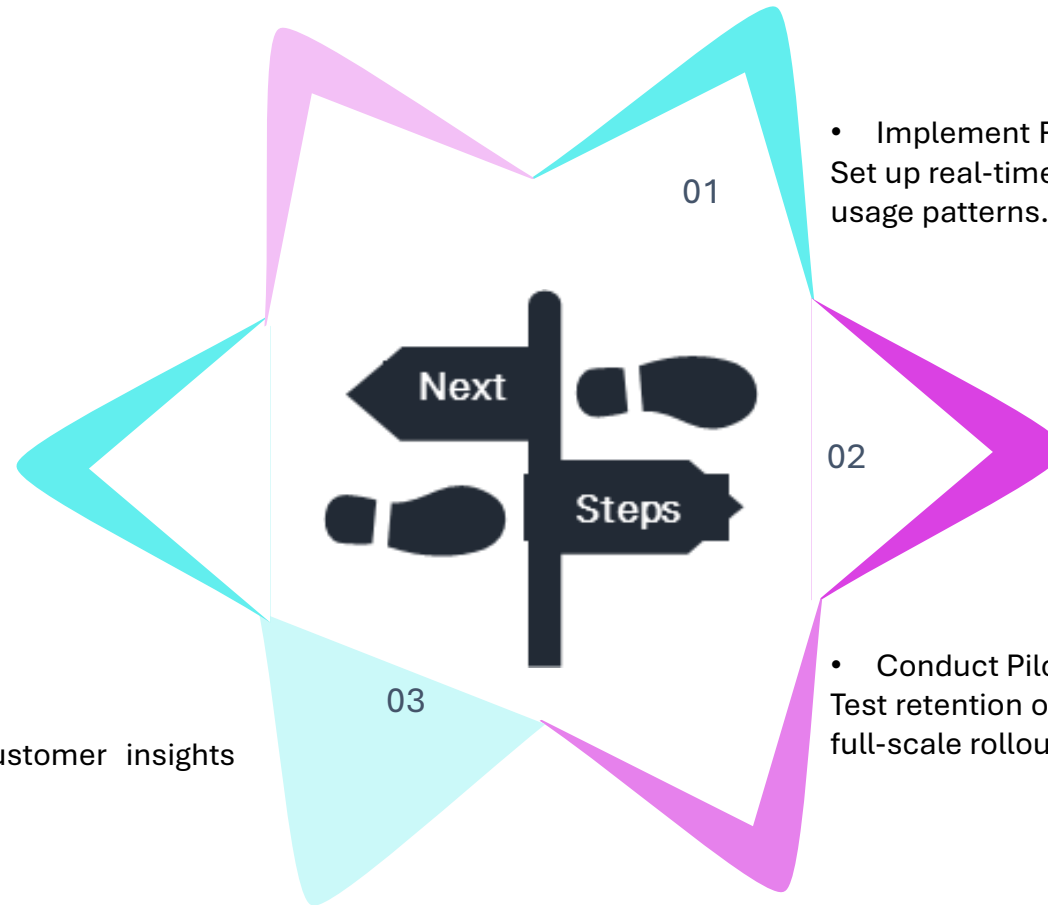


- Most customers do not have an international plan or voicemail plan. The company could look at this as a marketing strategy to attract more revenue.



- Employee Training: Train teams to recognize churn signs and implement retention strategies. Equip staff with tools to offer personalized solutions to at-risk customers.

Next Steps



- **Implement Real-Time Monitoring:**
Set up real-time analytics to monitor customer behavior and usage patterns.

- **Conduct Pilot Programs:**
Test retention offers and strategies on small segments before full-scale rollout.

- **Enhance Customer Feedback Mechanisms:**
Use surveys and feedback forms to gather customer insights regularly.

Thank You!