Customer Churn Analysis Report

1. Introduction

Customer retention is a critical component of maintaining profitability in the competitive telecom industry. This report aims to analyze the factors influencing customer churn and provide actionable insights to reduce churn rates.

The analysis focuses on identifying key patterns in customer behavior using the dataset provided. Key areas of interest include usage patterns, customer interactions with service teams, and plan preferences.

2. Data Overview

The dataset comprises customer details, usage metrics, and subscription plans. After preprocessing, key features such as total day minutes, customer service calls, and international plan subscriptions were analyzed to understand their impact on churn.

### 3. Key Insights and Visualizations

Churn Distribution

The churn distribution indicates an imbalance in the dataset, with fewer customers churning compared to those retained. This imbalance needs to be addressed during predictive modeling to ensure reliable results.

Visualization

Total Day Minutes vs. Churn

Customers with higher total day minutes show a greater tendency to churn. This insight suggests that high-usage customers may face dissatisfaction, possibly due to high costs or unmet service expectations.
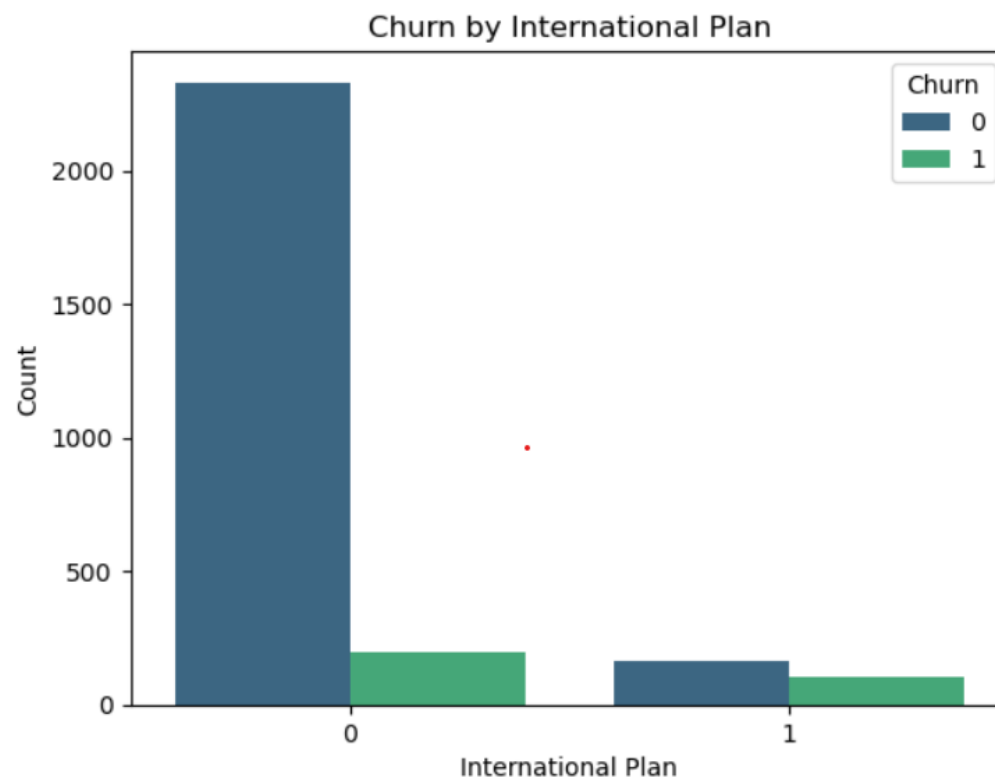
Total Day Minutes by Churn
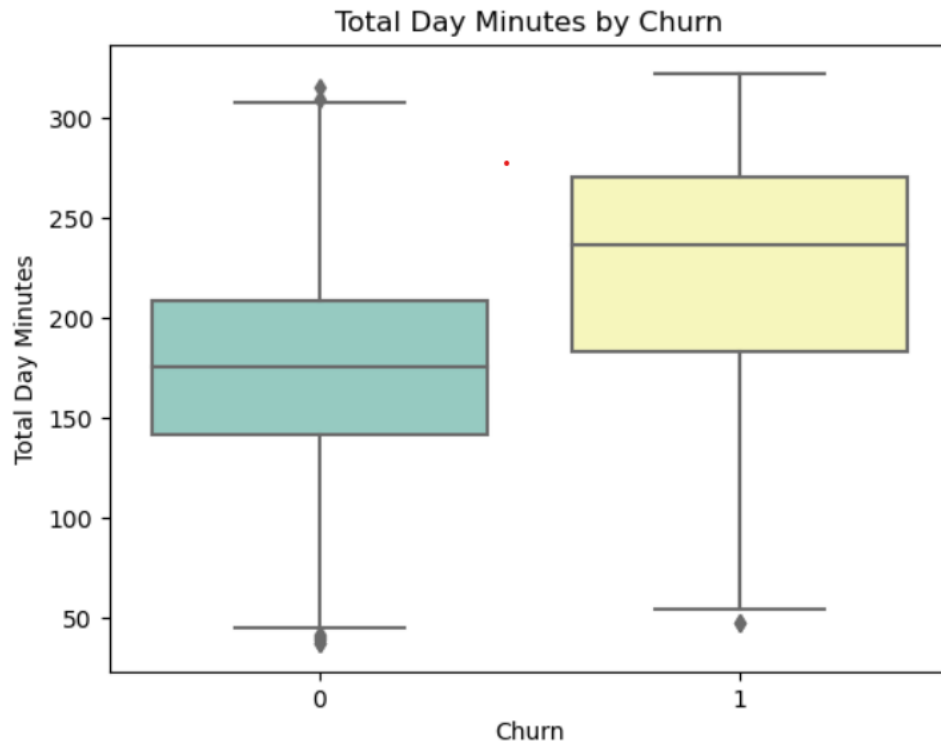
Customer Service Calls vs. Churn

The number of customer service calls is positively correlated with churn. This suggests that customers who frequently contact customer service may have unresolved issues or negative experiences.

Customer Service Calls and Churn
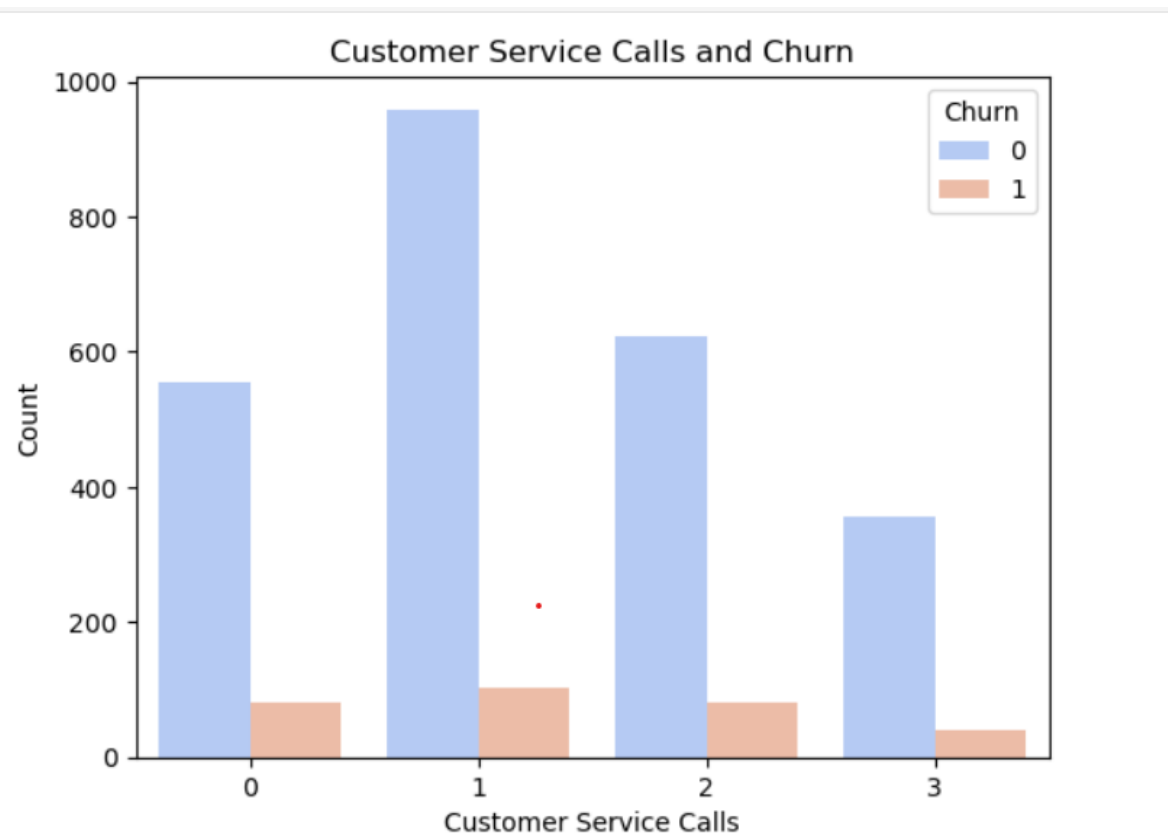
International Plan Impact

Customers with an international plan have a significantly higher churn rate. This indicates a potential issue with the perceived value or pricing of the plan.

Churn by International Plan

Correlation Matrix

The correlation matrix highlights strong relationships between features. For example:

Total day minutes, calls, and charges are highly correlated.

Features like customer service calls and international plan have weaker correlations with numerical variables but significant impacts on churn.

Feature Correlation Matrix
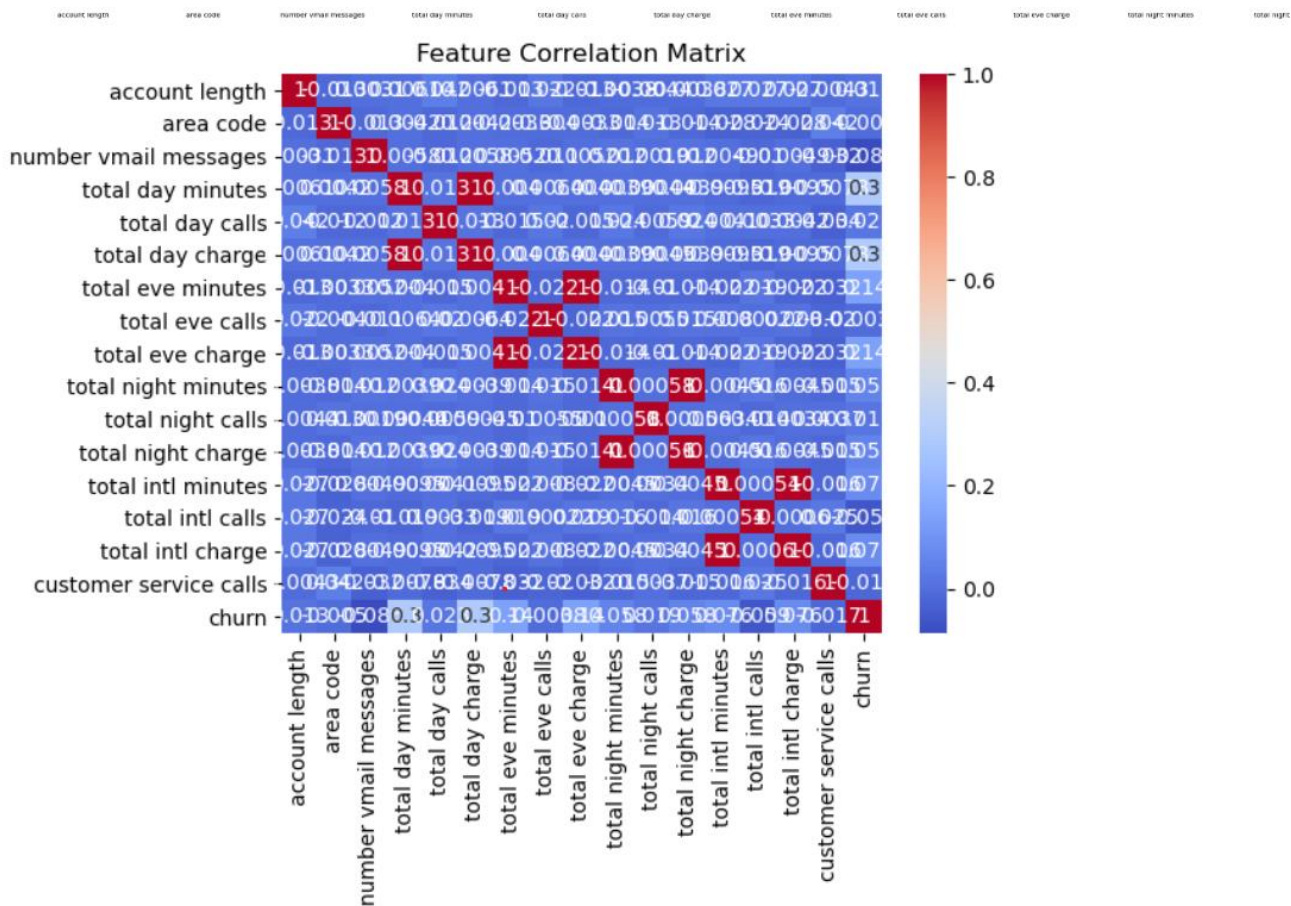
4. Recommendations

Based on the analysis, the following recommendations are made:

Improve Customer Service:

Conduct training for customer service representatives to address common complaints effectively.

Provide proactive support for high-risk customers.

Reevaluate High-Usage Customer Plans:

Introduce personalized or discounted plans for high-usage customers to improve satisfaction and retention.

Optimize International Plans:

Review pricing and features to ensure competitive value. Conduct surveys to understand customer dissatisfaction.

Data Balancing for Modeling:

Address dataset imbalance using techniques like oversampling or undersampling to improve model accuracy.

Implement Predictive Models:

Develop a predictive model to identify high-risk customers and initiate targeted retention campaigns.

5. Conclusion

The analysis has identified actionable areas to reduce churn, focusing on enhancing customer experience and optimizing subscription plans. By implementing the recommendations, the organization can increase customer satisfaction and maintain long-term profitability.