SyriaTel

CUSTOMER CHURN PREDICTION & ANALYSIS

A MACHINE LEARNING APPROACH FOR SYRIATEL

Jane Bahati

INTRODUCTION

OBJECTIVE

Minimize customer churn by identifying key factors influencing customer departure.We focus on leveraging data-driven insights to understand why customers leave and implement targeted strategies to retain them.

IMPACT

Improve retention strategies and maximize customer lifetime value.

BUSINESS UNDERSTANDING

01 The telecommunications industry faces high customer churn rates due to increased competition, evolving customer expectations, and pricing pressures.

02 Losing customers not only results in revenue loss but also increases customer acquisition costs, as attracting new customers is often more expensive than retaining existing ones.

03 High churn rates can negatively impact brand reputation and market share, making customer retention a critical business priority.

04 Understanding churn patterns through data analysis enables proactive retention strategies, allowing companies to personalize customer experiences, improve service offerings, and strengthen loyalty programs.

PROBLEM STATEMENT

01 **Challenge**

SyriaTel aims to reduce customer churn by analyzing key factors such as:

- Call usage
- Billing history
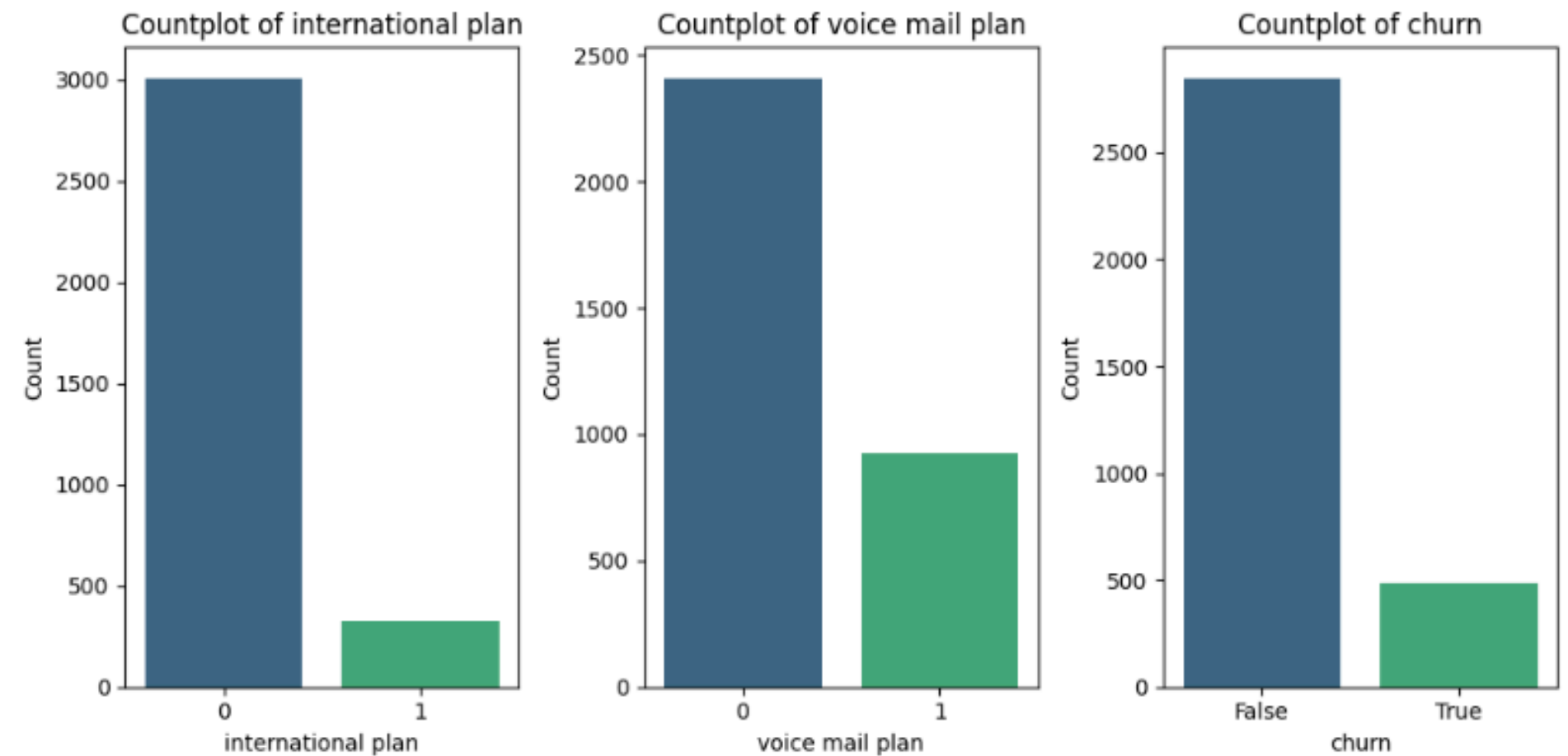- International plan subscriptions
- Customer service interactions

02 **Solution**

Develop a machine learning model to predict customer churn (Yes/No) and provide actionable insights.
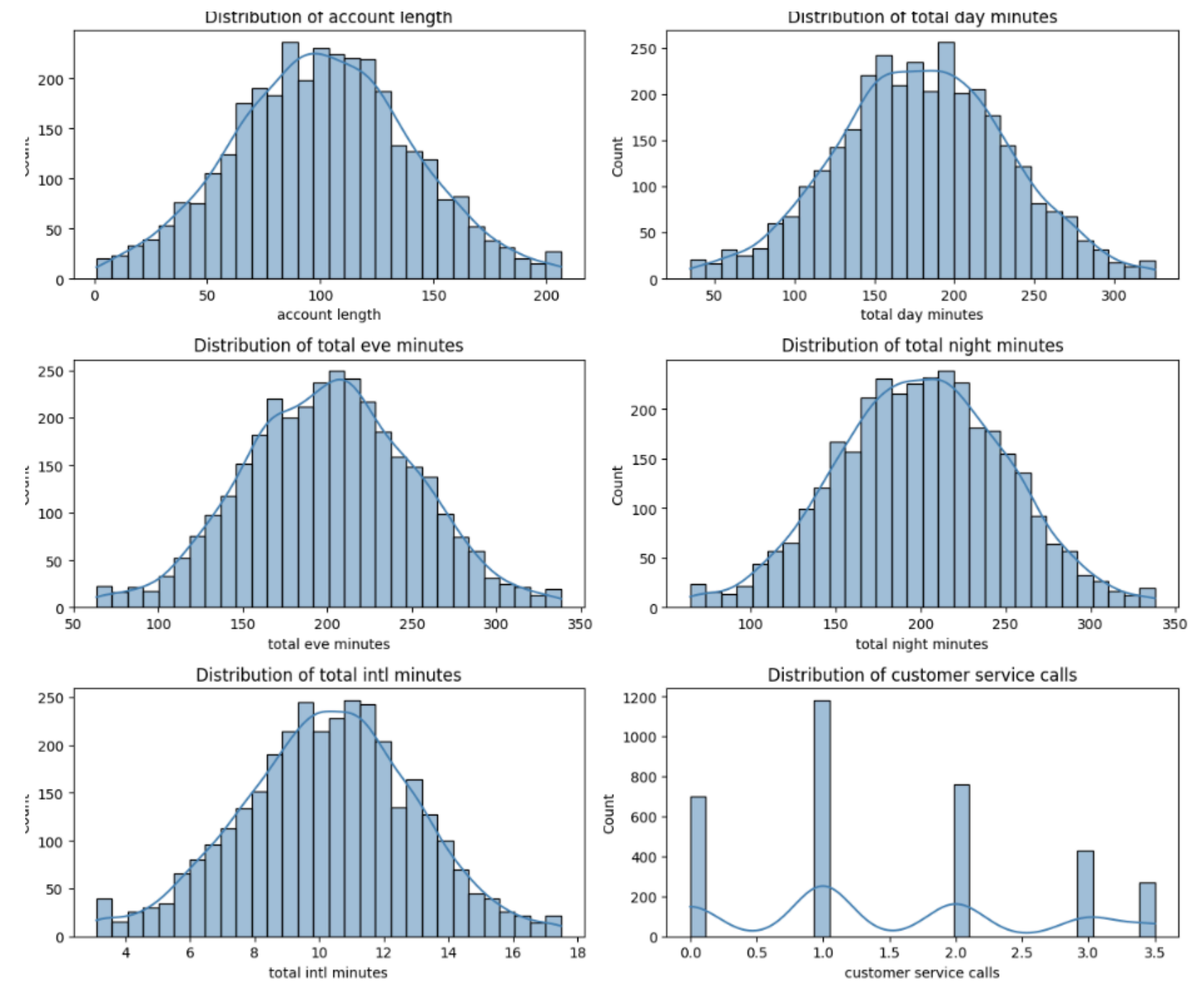
CHURN RATE BY INTERNATIONAL PLAN

Customers with an international plan churn more frequently.

This visualization highlights key patterns in customer behavior related to churn. The first plot shows that customers with an international plan represent a smaller group but have a higher churn rate. The second plot reveals that fewer customers subscribe to voicemail plans, yet their churn behavior requires further analysis. The third plot confirms the presence of class imbalance, where the majority of customers are retained, but understanding the characteristics of those who churn is crucial for targeted retention strategies.

USAGE PATTERNS & CUSTOMER BEHAVIOR

The analysis highlights critical factors influencing customer churn at SyriaTel. Customers with international plans exhibit a higher churn rate, despite being a smaller segment. Additionally, frequent customer service calls indicate dissatisfaction, correlating with increased churn risk. Call usage patterns are normally distributed across different times of the day, while service calls show distinct spikes, suggesting common concerns. These insights provide a foundation for targeted retention strategies, improving customer satisfaction and business sustainability.

UNDERSTANDING CUSTOMER CHURN THROUGH KEY FACTORS
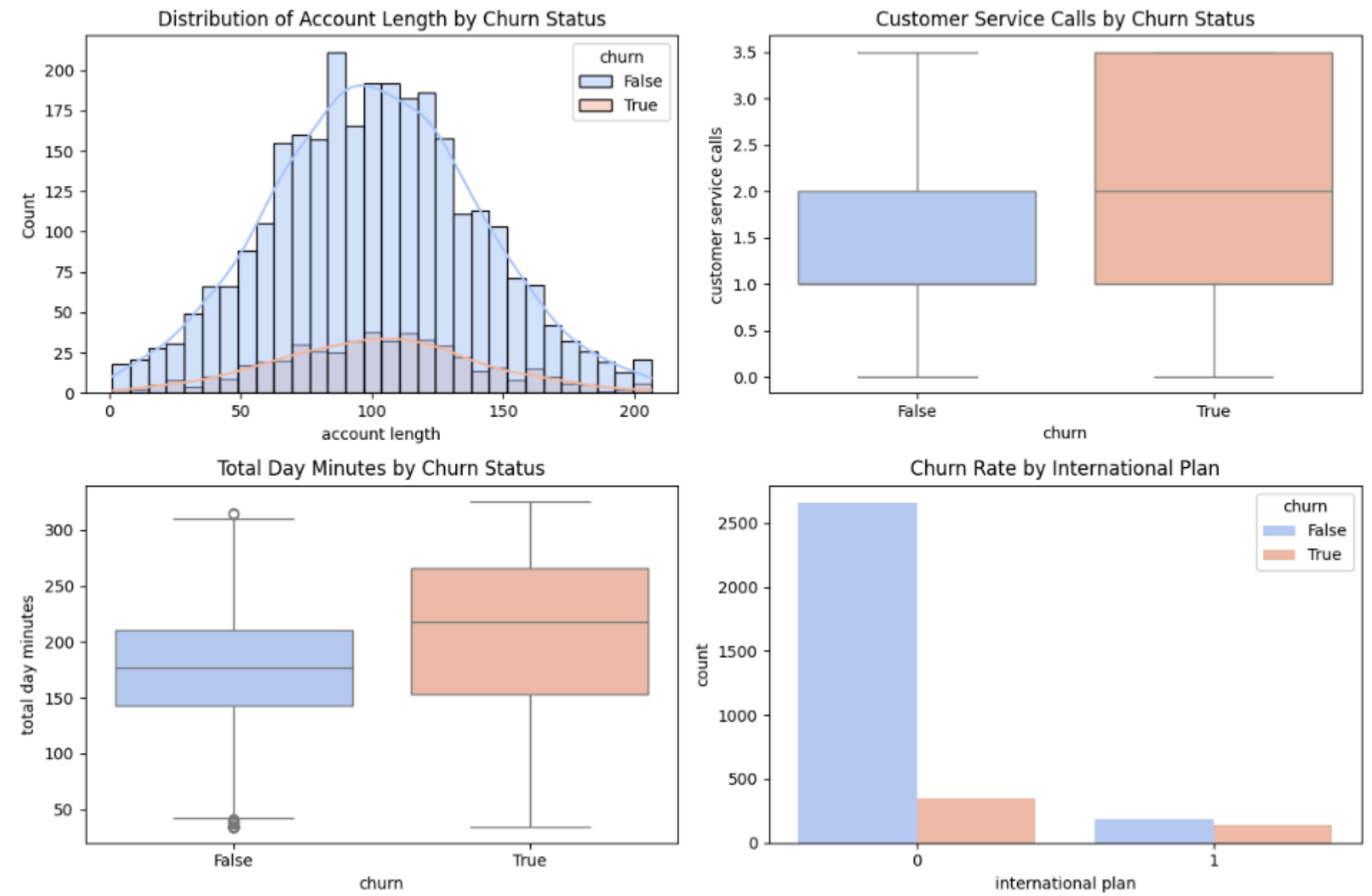
The visualizations provide a comprehensive view of factors contributing to customer churn in SyriaTel. The distribution of account length reveals that churned customers are spread across different account tenures but tend to have shorter durations. The customer service calls boxplot highlights that customers who churn make more frequent complaints, indicating dissatisfaction. The total day minutes boxplot shows that churned customers have higher call usage, suggesting that heavy users may be more prone to leaving. Lastly, the churn rate by international plan plot confirms that customers with international plans exhibit higher churn rates. These insights guide SyriaTel in implementing data-driven retention strategies.

RECOMENDATIONS

01 Improve Customer Service Efficiency
Enhancing response times, training support staff, and using AI-driven customer support solutions can improve issue resolution and reduce frustration. Offering proactive support before issues escalate will also help retain customers.

02 Personalized Retention Strategies
Leveraging customer data to provide tailored offers, discounts, and loyalty rewards can increase engagement. Implementing targeted marketing campaigns for high-risk customers will further strengthen retention efforts.

03 Proactive Customer Engagement
Using predictive analytics to identify at-risk customers early allows SyriaTel to intervene with personalized solutions. Regular check-ins, surveys, and outreach programs will help improve customer relationships and satisfaction.

04 Transparent Billing and Pricing Flexibility
Providing clear billing statements, eliminating hidden charges, and offering flexible payment plans will help build trust. Real-time notifications about usage and potential overages will also reduce billing-related churn.

CONCLUSION

KEY TAKEAWAY

Predictive analytics help SyriaTel retain customers

ACTIONABLE INSIGHTS

Addressing churn factors can boost customer satisfaction and revenue.

FINAL RECOMMENDATION

Implement data-driven retention strategies to maintain market leadership.

THANK YOU