

CUSTOMER CHURN ANALYSIS FOR SYRIATEL PROJECT

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BUSINESS UNDERSTANDING

Customer retention is a critical challenge in the highly competitive telecommunications industry. With multiple service providers offering similar products, companies face constant pressure to maintain customer loyalty.

High churn rates not only result in revenue loss but also increase customer acquisition costs and reduce market share. Understanding the factors that drive customer churn enables telecom companies to implement proactive retention strategies, enhance customer satisfaction, and maximize lifetime value.

By analyzing customer behavior, service usage, and engagement patterns, businesses can identify at-risk customers and take data-driven actions to improve service offerings and strengthen customer relationships.

PROBLEM STATEMENT

SyriaTel, a leading telecom provider, is facing high customer churn, impacting revenue and operational efficiency. To address this, the company aims to identify the key factors influencing a customer's decision to leave. By analyzing customer attributes such as call usage patterns, billing history, international plan subscriptions, and customer service interactions, we will develop a data-driven approach to predict churn and provide actionable insights.

- **Churn Prediction:** Develop a machine learning model to classify whether a customer is likely to churn (Yes/No).
- **Business Impact:** Extract meaningful insights that SyriaTel can leverage to enhance customer retention strategies and improve customer lifetime value.

OBJECTIVES

Classification

- 01** Develop a binary classification model to predict customer churn (Churn vs. No Churn).
- 02** Engineer new predictive features from customer behavior, call patterns, and billing data.
- 03** Compare multiple models (Logistic Regression, Decision Trees, and Random Forest) to identify the best predictive approach.
- 04** Optimize model performance using feature selection, hyperparameter tuning, and class balancing techniques.
- 05** Evaluate models using classification metrics such as accuracy, precision, recall, F1-score, and AUC-ROC.



BUSINESS INSIGHTS

Identify the key factors driving customer churn.



Provide data-driven recommendations to SyriaTel's marketing and customer service teams to enhance retention strategies.



Ensure model interpretability so business leaders can make informed, strategic decisions based on actionable insights.





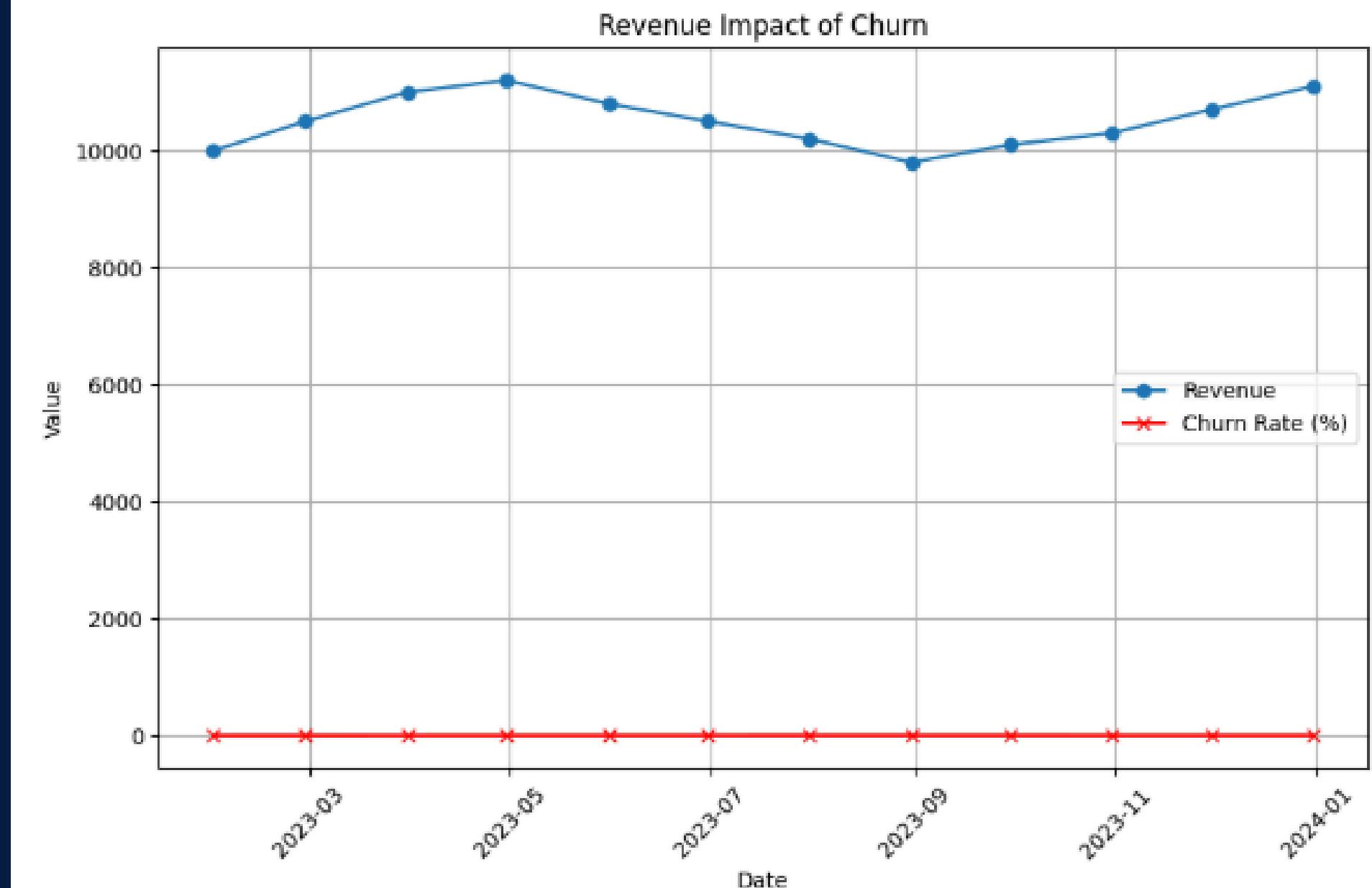
FINDINGS & VISUALIZATIONS

Revenue Impact of Churn

The following visualization illustrates the relationship between revenue and churn rate over time.

Key Insights:

- There is a slight decline in revenue in certain months where the churn rate spikes.
- Although the churn rate remains relatively low, its impact on revenue is significant.
- Implementing proactive retention strategies can stabilize revenue streams.



Customer Acquisition vs. Retention Cost

This visualization compares customer acquisition and retention costs across different customer segments.

Key Insights:

- Customer acquisition costs are consistently higher than retention costs across all segments.
- Segment D has the highest total costs, suggesting a competitive and high-value customer base.
- Segment B's high retention costs indicate a potentially high churn risk, requiring more investment in customer loyalty programs.
- Segment E has the lowest total costs, making it an efficient segment for customer retention.

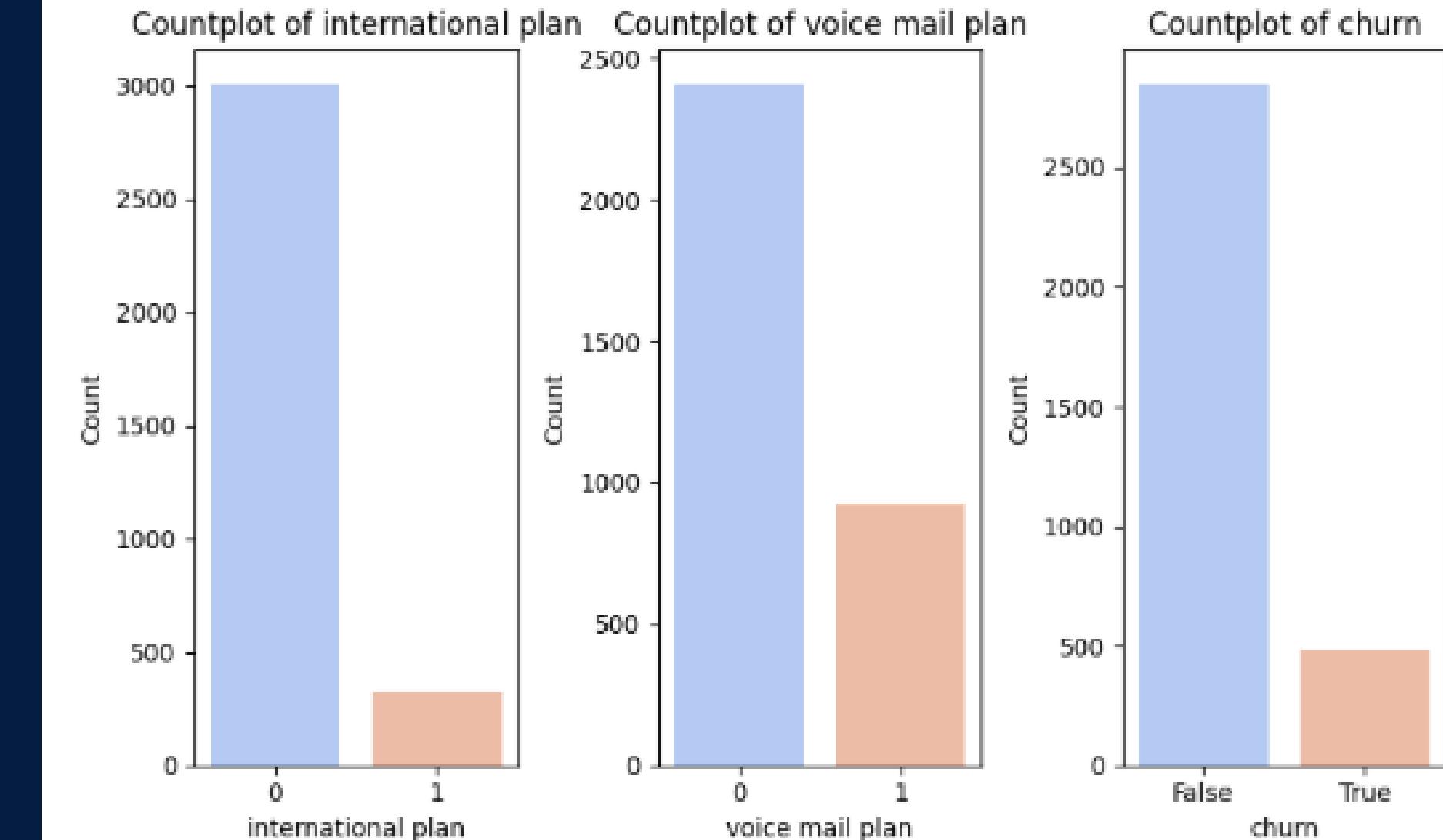


Customer Preferences & Churn Trends

The countplot analysis reveals that most SyriaTel customers do not subscribe to international or voicemail plans, suggesting these services are not major churn factors. The overall churn rate is low, but the impact of churned customers on revenue remains significant. Understanding their behavior is crucial for improving retention strategies.

Key Insights:

- Most customers do not use international or voicemail plans, indicating these services may not influence churn significantly.
- The overall churn rate is low, but addressing the needs of churned customers can enhance retention.
- Further analysis is needed to determine if call usage, customer service interactions, or billing issues contribute more to churn.



CONCLUSION & RECOMMENDATIONS

Key factors influencing churn include service usage, billing behavior, and customer service interactions.

Predictive analytics can help identify at-risk customers, enabling proactive intervention to reduce churn.

Customer churn is a significant challenge for SyriaTel, impacting revenue and increasing costs.

Investing in customer retention programs can be more cost-effective than acquiring new customers.

SyriaTel should enhance customer engagement strategies, offer personalized plans, and improve service quality to boost retention rates.



NEXT STEPS

Implement the predictive churn model and integrate it into SyriaTel's customer relationship management (CRM) system.

Develop targeted marketing campaigns based on customer segmentation and churn risk analysis.

Continuously monitor churn trends and refine strategies using updated data analytics.

Enhance customer experience by addressing key service pain points identified in the analysis.

Churn Prevention Strategy Roadmap

- Enhance product features & functionality
- Proactive communication (e.g., surveys, feedback collection)
- Improve customer service (e.g., dedicated support channels)
- Personalize retention offers (e.g., discounts, loyalty programs)
- Analyze customer behavior & segmentation



THANK YOU!