

CUSTOMER CHURN PREDICTION

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WHY PREDICTING CHURN MATTERS

- losing customers = losing money
- Cheaper to keep a customer than find a new one
- Helps us act early before they leave
- Targets the right people with offers or support
- Boosts loyalty and profits



PROJECT OBJECTIVES

- Predict which customers are likely to churn (leave the service)
- Use machine learning to uncover patterns behind customer churn
- Help the business take early action to retain valuable customers
- Provide data-driven recommendations to improve customer loyalty and reduce loss



ABOUT THE DATASET

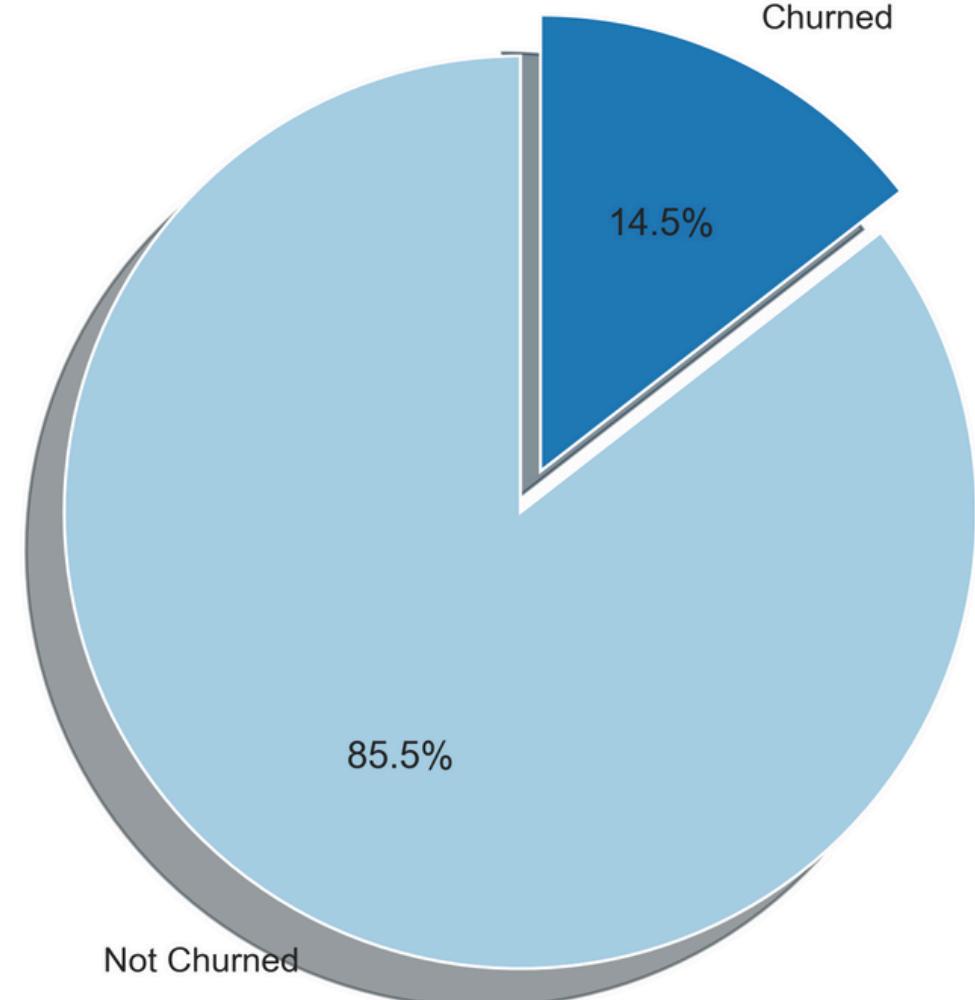
- Source: SyriaTel customer usage and profile data
- 3,333 customers
- Customer details like location and plans they've subscribed to
- Call activity such as how often they call and for how long
- Customer support calls — how many times they've contacted support
- Whether or not the customer left the company (churned)



KEY INSIGHTS FROM EDA

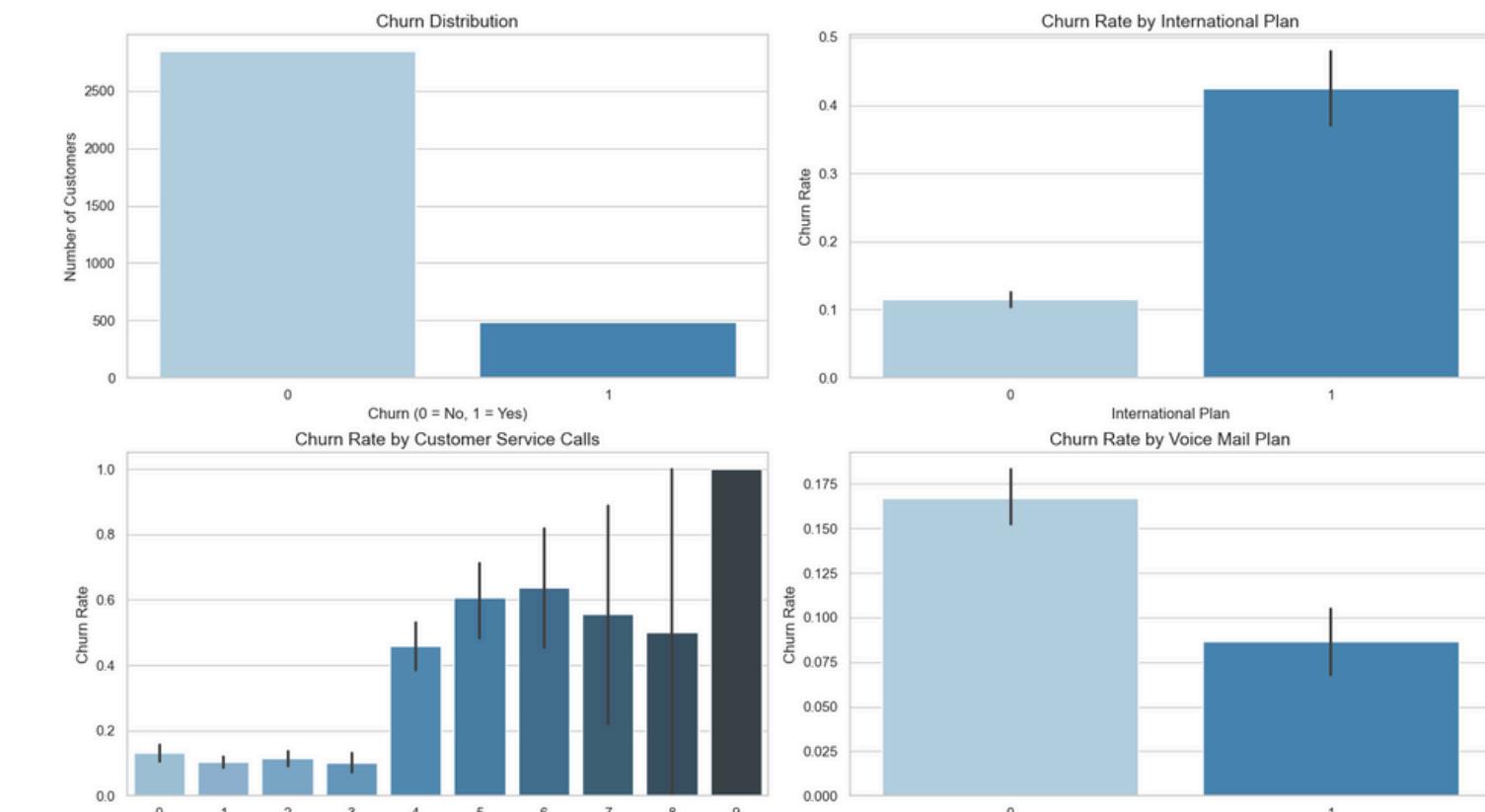
- 14.5% of customers have churned, meaning they stopped using the service.
- 85.5% of customers stayed, showing most are still active.
- While the majority remain loyal, the 14.5% churn rate is a red flag for the business.
- Identifying why these customers leave can help prevent revenue loss and improve customer retention.

□ Customer Churn Distribution



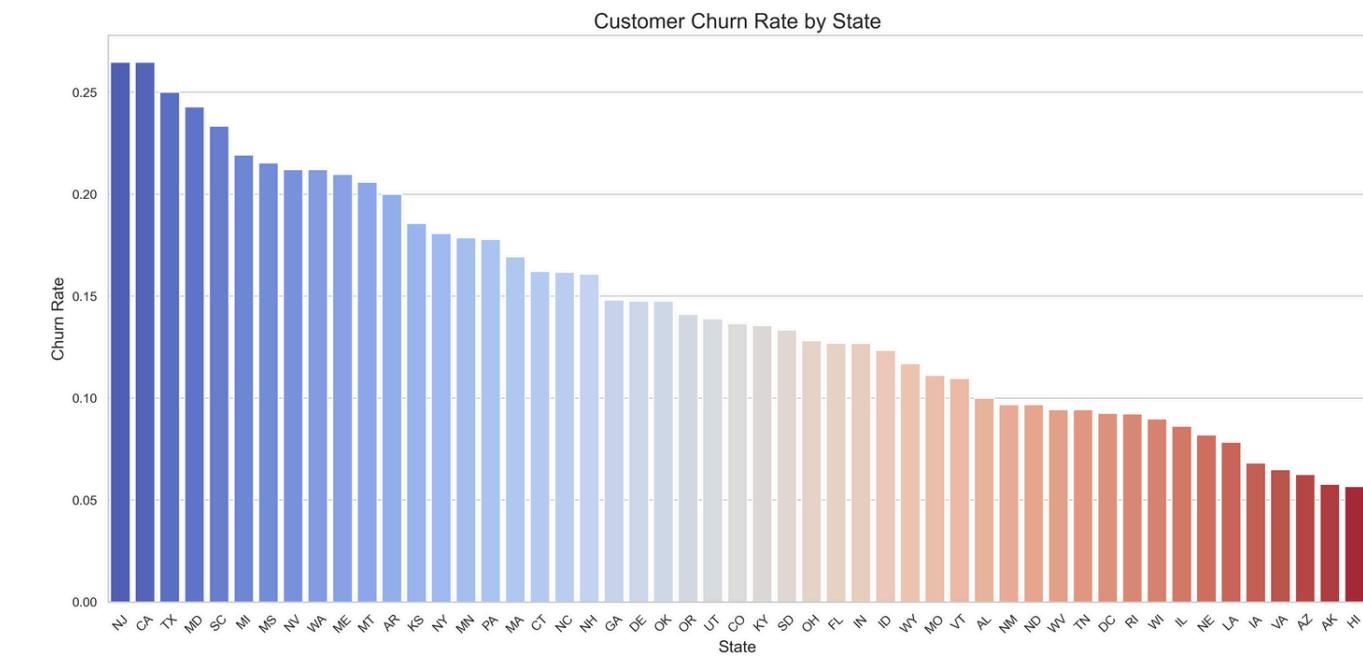
KEY INSIGHTS FROM EDA

- Customers with international plans churn more.
- Frequent service calls signal higher churn.
- High night/international charges linked to churn.
- Most customers stay, but we focus on spotting those likely to leave.



KEY INSIGHTS FROM EDA

- Some states (e.g., NJ, TX) show higher churn. Churn rates vary by state — location matters.



MODELING APPROACH

- We tested several machine learning models to predict which customers are likely to leave the company. These models learned patterns in customer behavior (like call usage, charges, and service complaints) using historical data.
- We compared their performance using metrics like accuracy, precision, and recall, and selected the best one — XGBoost — for final predictions because it balanced performance and reliability.



BUSINESS RECOMMENDATIONS

- Use the XGBoost model to find customers likely to leave.
- Target high-risk customers (churn score > 70%) with retention offers.
- Offer discounts or better service to keep them.
- Track churn with dashboards for quick insights.
- Update the model regularly to stay accurate.

PROJECT IMPACT

This model gives SyriaTel the ability to:

- Reduce customer churn proactively
- Personalize retention strategies
- Increase revenue by improving loyalty

Data science meets real-world telecom impact.

Q N A

THANK YOU

