CUSTOMER CHURN PREDICTION

By

Agatha Nyambati

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BUSINESS UNDERSTANDING

SyriaTel, a telecommunications company, is facing a high churn rate, with many customers discontinuing their services and switching to competitors. By analyzing the dataset, SyriaTel aims to gain insights into factors associated with high customer churn, leading to significant revenue loss

PROJECT OBJECTIVES

- Identify the factors that are most likely to lead to customer churn.

- Develop a model that can accurately predict which customers are at risk of churning.

- Take proactive steps to retain customers who are at risk of churning.

DATA UNDERSTANDING

• We will work with a customer churn dataset from the telecom industry sourced from Kaggle website.

• It contains 3,333 records and 21 columns(4 categorical, 17 numerical).

Numerical features analysis

Distributions of Numerical Variables
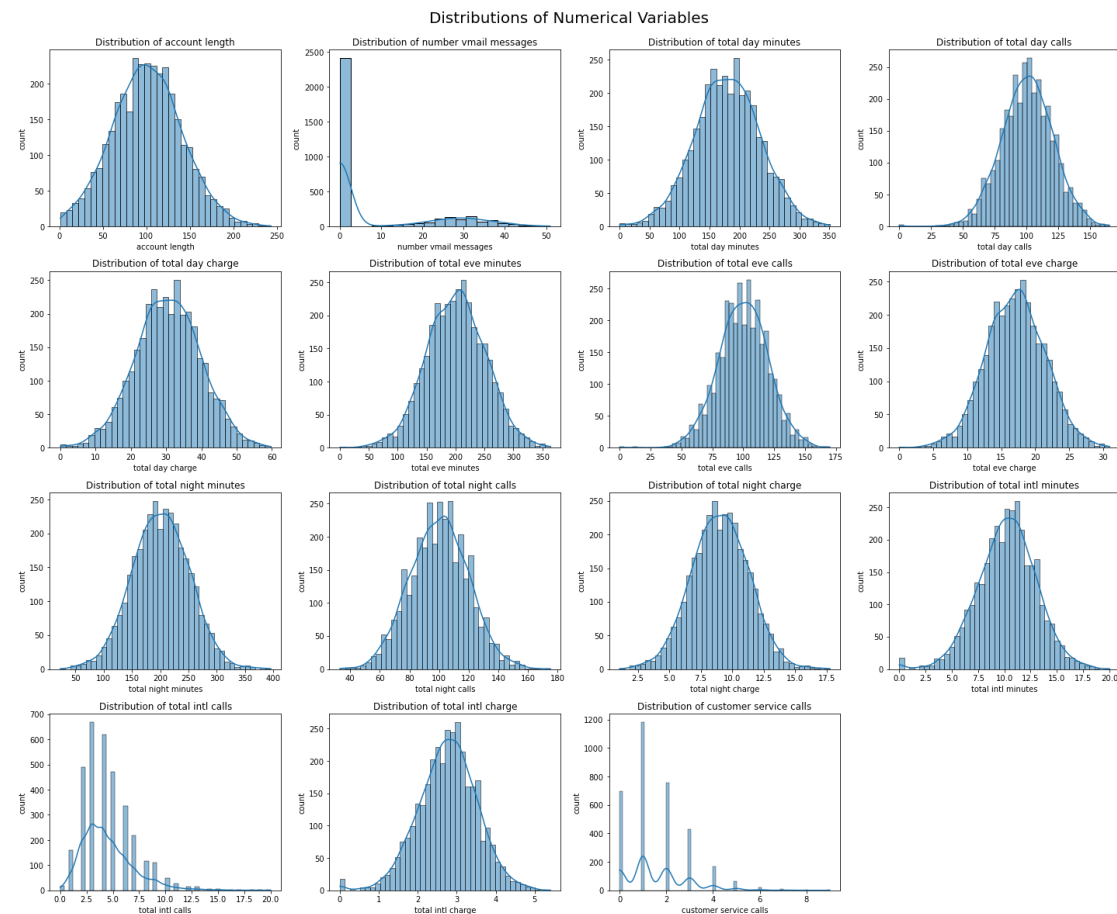
Numerical features analysis

- For the distribution plots of the features above, all of them except customer service calls and number of voicemail messages have a normal distribution. Total international calls seems to be skewed to the right side however it is still normally distributed.

Categorical features analysis
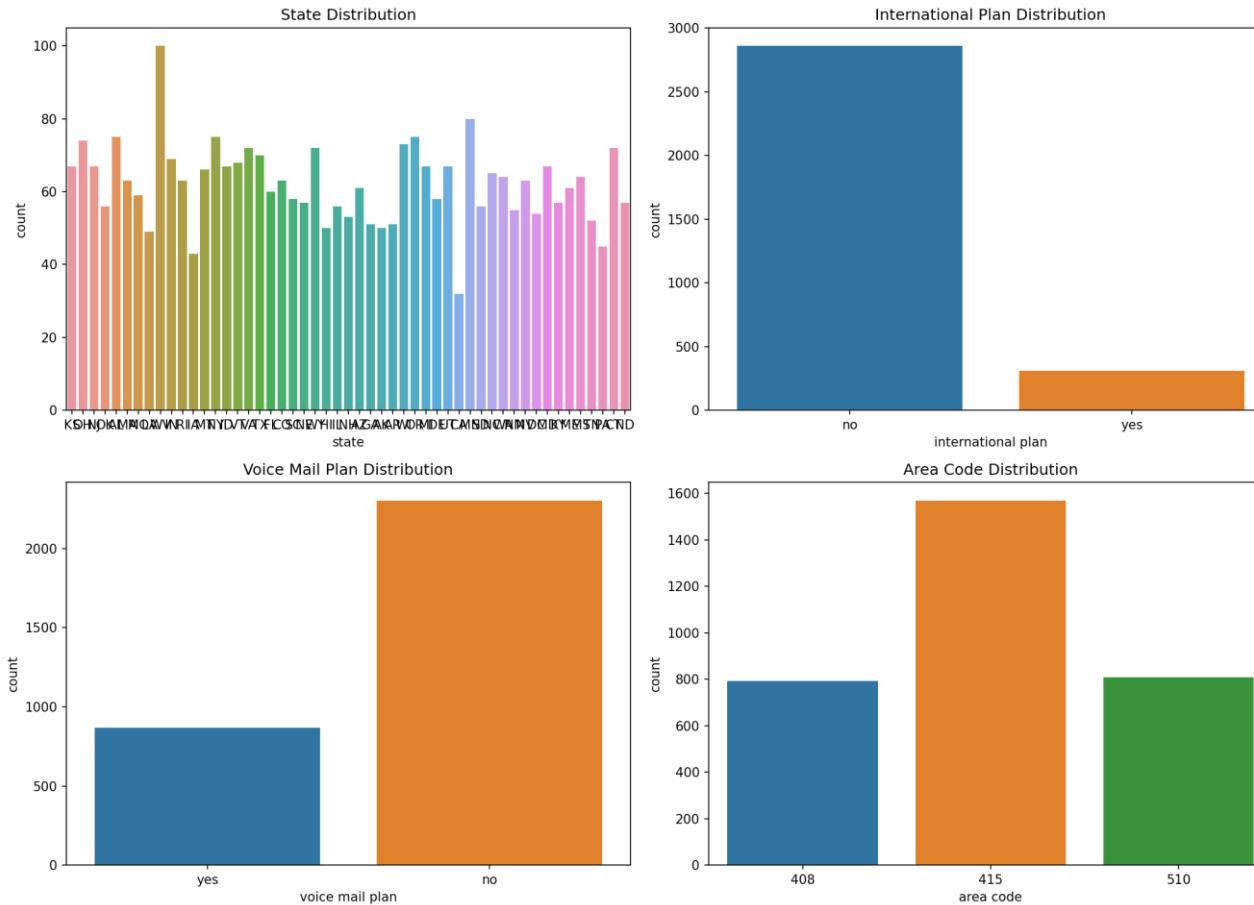
Categorical features analysis

- The majority of individuals in the dataset do not have a voice mail plan.

- Area code 415 is the most prevalent among the analyzed individuals.

- Area codes 408 and 510 have relatively similar distributions.

- There is a diverse distribution of individuals across different states.

- The majority of individuals in the dataset do not have an international plan
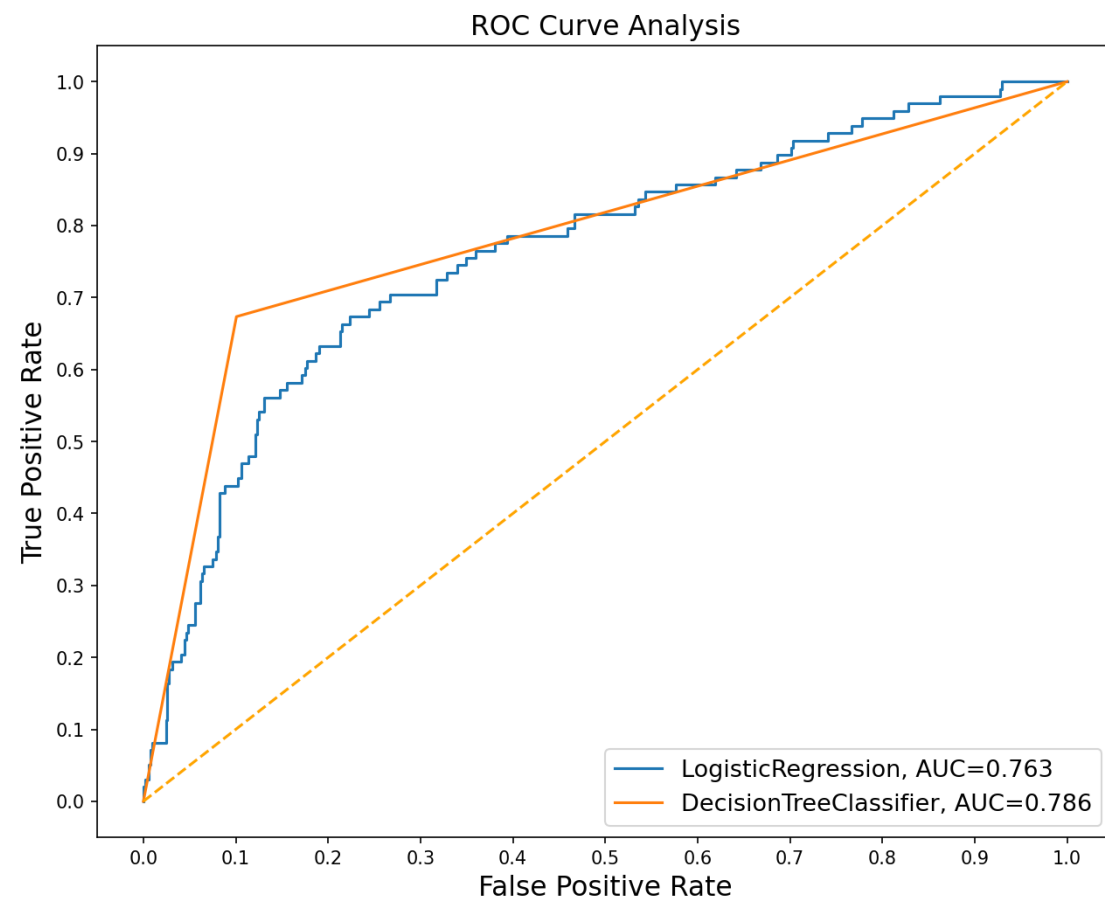
MODELING

Algorithms Used

- Logistic Regression
- Decision Tree

Metrics Used

• Recall-focuses on the model's ability to correctly identify positive cases.

• ROC_AUC Curve-plots the true positive rate (sensitivity) against the false positive rate (1 - specificity) at various classification thresholds.

EVALUATION

EVALUATION

Based on recall score;
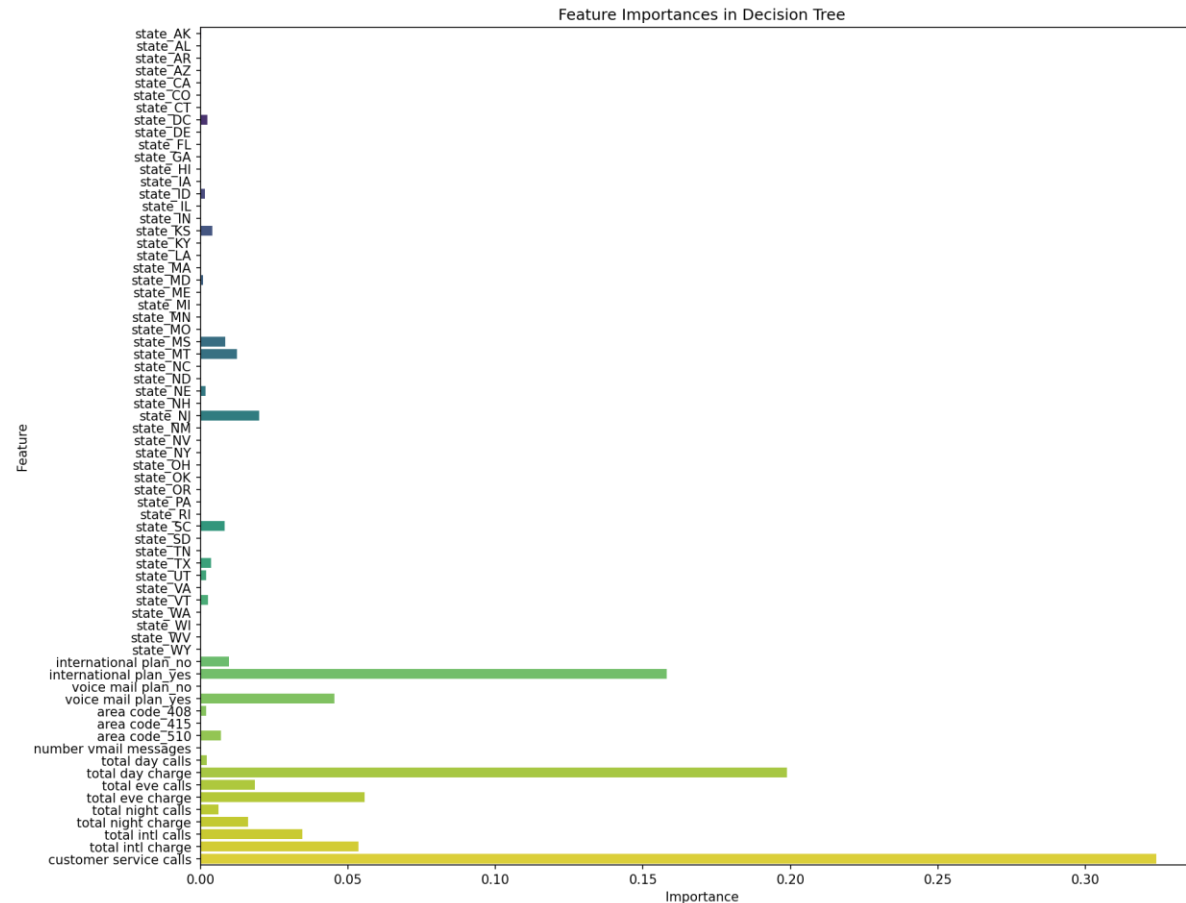
• Logistic Regression – 0.663

• Decision Tree – 0.693

Based on ROC_AUC curve;

• Decision Tree – 0.786

• Logistic Regression – 0.763

Log loss

•Decision Tree – 4.685

•Logistic Regression – 8.117

Which features impacted churn according to our model?

RECOMMENDATIONS

- 1.Improve customer service quality and reduce the number of customer service calls. Enhance training programs for customer service representatives to ensure prompt and effective resolution of customer issues, leading to higher customer satisfaction and reduced churn.

- 2.Evaluate the pricing structure for day, evening, night, and international charges. Consider adjusting pricing plans or introducing discounted packages to address the higher charges associated with customers who churn.

- 3.Invest in improving international connectivity by offering more international plans, offering free international calls, and providing better international service quality.

- 4.Improve customer retention by offering loyalty programs, free or discounted services, and incentives for repeat business. This can help retain customers and improve customer loyalty.

- 5.Monitor and analyze customer churn patterns to identify trends and areas for improvement. This will help in making data-driven decisions to optimize customer retention and improve customer satisfaction.

- 6.Enhance the value proposition of the voicemail plan to increase adoption among customers. Highlight the benefits and convenience of voicemail services, and consider offering additional features or discounts to encourage customers to sign up.

- 7.Educate the customers on the benefits of the voice mail plans

CONCLUSION

- In conclusion, the analysis of the customer churn in SyriaTel has provided clear knowledge on the factors that leads to churning of the customers as well as valuable insights into the customer behaviors.

- The models have provided a clear predictive power on customers churn as well as identifying important features that greatly influence customer retention.

Next steps

- Focus on the customer satisfaction. This will ensure that the customers who have not churned are always enjoying the services of the company and that at no point will they discontinue with the usage of the company's services and products

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  Implement a customer feedback system that allows customers to share their experiences and suggestions for improvement. This will help the company gather valuable feedback and make data-driven decisions to improve customer satisfaction and retention

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  Analyze the customer churn patterns to identify trends and areas for improvement

THANK YOU:)