Rodgers

Churn Rate Analisys

A Case study of SyriaTel

Business Problem

The main of this project is to predict which customers are going to switch their mobile telephone carrier. What is the chance that a customer will switch to anoither provider

Customer churn is the loss of clients. Telephone companies use customer churn rates to as abusiness metric to since the cost of retaining an existing customer is less than acquiring a new customer.

Business Objective

1. Which customer has the highest probability of switching to another provider?

2. What is the reason why people are switching to other providers?

3. How sure are we that the prediction is perfect, reliable.

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Data understanding

1 **Dataset Summary**

The data contained 3333 records with 21 features
No missing values recorded
Categorical and numerical data noticed

2 **Observations**

The target feature “churn” is imbalaned

Other imbalaned data include number of voice mail messages

Data Cleaning

1 **Dropped Features**

Phone number, had no predictive implications

Label encoding for categorical features

Transformation of the Target Variable to 0 and 1

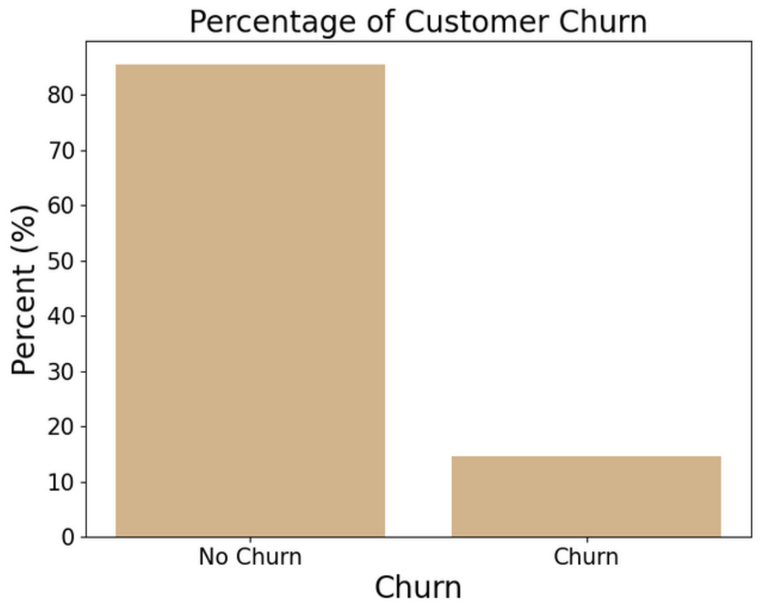
Other colums droped include total day charge, total eve charge, total night charge, total intl charge as they had a perfect correlation that would lead to multicollenearity

EDA

Distribution of the target Vriable

No-Churn= 85.5%

Churn = 14.5%



Comparison of best Models

1 Gradient Boost Classifier

Highest sCore 97%
Precission: 90%
Recall: 73%
At -0.5 Threshold Recall is 82%

2 Support Vector Machine

Highest score: 92%
Precission: 87%
Recall: 49%
At -0.5 threshold Recall: 73%

3 Random Forest

Highest score : 97%
Precision: 94%
Recall: 65%
At -0.5 threshold Recall : 73%

Recommendation

Group Discussion

Implement retention campaign like giving customers incentives and giving discount on recharges and offering more talk time.

Limitation

The data was imabalnced so the most of the models were imabalanced towards the majority class

Next Steps

Model performance optimization (fine tuning threshold) base don business requirements

Use |SMOTE to address class imbalance

Thank You

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