Reducing Customer Churn with Predictive Modeling

Introduction to SyriaTel and the Problem of Churn

SyriaTel is a telecommunications company that provides mobile, fixed-line, and internet services to customers in Syria. Like many companies in the industry, SyriaTel faces the challenge of customer churn - the rate at which customers stop doing business with the company.

Churn can be costly for companies, as it requires more resources to acquire new customers than to retain existing ones. In this presentation, we will explore how predictive modeling and classification models can be used to reduce customer churn for SyriaTel.

Methodology: Classification Models and Grid Search Cross Validation

Classification Models

We tried several classification models, including logistic regression, decision trees, and random forests.

Grid Search Cross Validation

We used grid search cross validation to optimize hyperparameters for each model.

Choosing the Right Metric: Recall

We chose recall as the primary metric for our models because we wanted to minimize false negatives and correctly identify customers who are likely to churn.

Choosing the Right Metric: Recall

In order to evaluate the performance of the classification models used to predict customer churn for SyriaTel, we must choose an appropriate metric. While accuracy is a commonly used metric, it may not be the best choice when the classes are imbalanced, as is the case with churn prediction. In this scenario, recall is a more appropriate metric to use.

Recall measures the proportion of actual positives that are correctly identified as such by the model. In the context of churn prediction, this means the proportion of customers who actually churned that were correctly identified as such by the model. This is important because it is more costly for SyriaTel to lose a customer than to incorrectly identify a customer as being at risk of churn when they are not.

Results: Best Model with 25 False Negatives

Model Performance

After extensive testing and evaluation, the best performing model had a recall of 0.85 and only 25 false negatives.

Implications for SyriaTel

With this model, SyriaTel can now identify customers who are likely to churn and take proactive measures to retain them.

Next Steps

SyriaTel should continue to monitor and evaluate the performance of the model and make improvements as necessary.

Recommendations for SyriaTel

Offer Incentives for Loyalty

SyriaTel can offer incentives to customers who have been with the company for a certain amount of time, such as discounts on their monthly bill or free upgrades to their plan.

Improve Customer Service

One of the main reasons for churn is poor customer service. SyriaTel should invest in training their customer service representatives to provide better support to customers.

Improve Network Coverage

Customers may churn if they experience poor network coverage or dropped calls. SyriaTel should invest in improving their network infrastructure to provide better coverage and reduce the likelihood of churn.

Conclusion

The predictive modeling and classification models used in this project have shown promising results in reducing customer churn for SyriaTel. By choosing the right metric, recall, we were able to identify the best model with only 25 false negatives.

We recommend that SyriaTel continue to use these models and metrics to monitor and improve their customer retention efforts. With the right approach and continued effort, SyriaTel can reduce customer churn and improve their overall business performance.