

SYRIATEL COMPANY

PREDICTIVE INSIGHTS FOR REDUCING CUSTOMER CHURN

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Overview

SyriaTel aims to reduce customer churn through data analysis and predictive strategies to retain at-risk customers and improve satisfaction.

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Business Problem

SyriaTel Company is trying to proactively identify those customers at risk of churning by decoding the intricate blend of demographic, usage and interaction data.



Data Understanding

SyriaTel's customer retention dataset contains various customer behavior features, including geographic indicators, account length, communication preferences, and usage patterns. It also includes variables like international usage and customer service interactions, with 'Churn' indicating customer disengagement. .

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Modelling

In our telecom churn prediction project, we have harnessed a range of machine learning models which include:

1. Logistic Regression
2. Decision Trees
3. Random Forest



Model Evaluation

The Random Forest model is the best performer among the models tested, offering a good balance of accuracy and recall. It is recommended for use in predicting customer churn in the competitive telecom market that SyriaTel faces.

ACCURACY

The Random Forest model outperforms the non-balanced Decision Tree in terms of accuracy, achieving an accuracy of 87% compared to the Decision Tree's accuracy of 83%.

PRECISION

The Random Forest model demonstrates better precision, with a precision score of 63%, compared to the non-balanced Decision Tree's precision score of 42%.

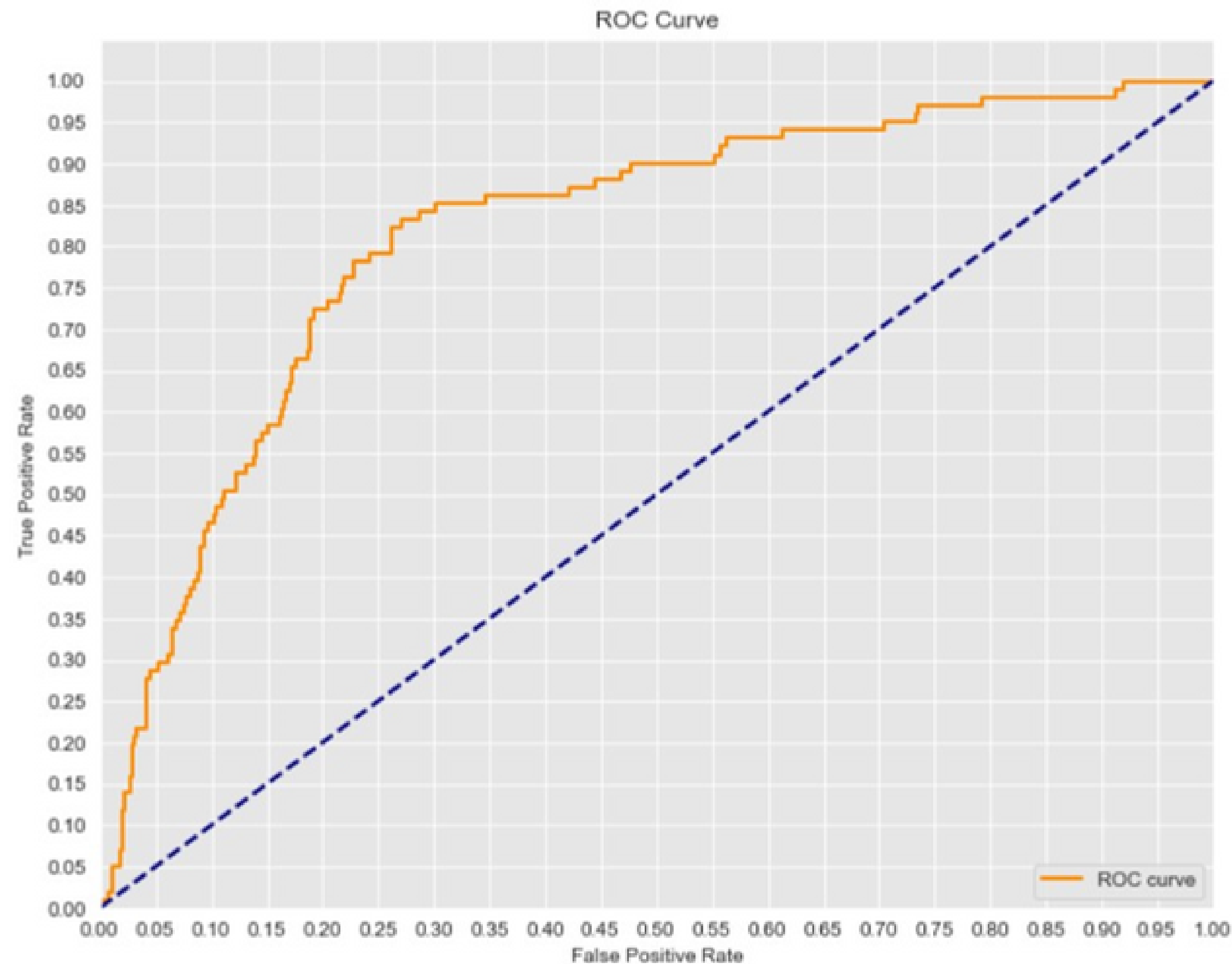
RECALL

The Random Forest model demonstrates a slightly higher recall of 42% compared to the non-balanced Decision Tree's recall of 35%.

F1 SCORE

The Random Forest model attains a higher F1 score of 50%, indicating a better balance between precision and recall. The non-balanced Decision Tree has an F1 score of 38%.

Roc Curve Random Forest



Results

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PLAN CHOICES MATTER

The availability of "international plan" and "voice mail plan" as binary features signifies that customers' plan choices can have a notable impact on churn.

KEY CHURN FACTORS

The dataset analysis shows that "Number vmail messages" and "customer service calls" are important indicators of customer churn at SyriaTel, suggesting that customer dissatisfaction and interactions with customer service greatly affect attrition.

USAGE PATTERNS IMPACT CHURN

Features such as "total day minutes," "total day calls," and "total day charge" provide insights into customer usage patterns. High usage, especially in daytime, may lead to increased billing and dissatisfaction, contributing to churn

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Recommendations

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TRANSPARENCY & COMMUNICATION

Enhance billing transparency and communication for customers with high "total day minutes," "total day calls," and "total day charge." This can help manage expectations and reduce dissatisfaction.

CUSTOMER CENTRIC APPROACH

SyriaTel should combat increasing churn rates by adopting a customer-centric strategy, with a focus on satisfying customers, especially those making frequent "customer service calls." Providing prompt and effective solutions to address their concerns is key to retention.

PLAN CUSTOMIZATION

Enable customers to customize their plans, especially with respect to "international plan" and "voice mail plan." Providing flexibility can help align services with individual preferences, reducing the likelihood of churn.

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Recommendations

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STRATEGIC DECISION MAKING

Use the insights from the dataset and predictive models to inform strategic decision-making. Optimize service offerings, align marketing strategies, and ensure SyriaTel remains competitive in the telecommunications industry.

MONITORING & PREDICTIVE INSIGHTS

SyriaTel should consistently monitor specific features and usage patterns to detect early signs of customer dissatisfaction and churn. Implementing predictive churn models like logistic regression, decision trees, and Random Forest can help anticipate potential churn and take proactive retention measures.

FEEDBACK MECHANISM

Establish a feedback mechanism to collect input from customers who exhibit characteristics associated with churn. This feedback can be invaluable in pinpointing specific areas of dissatisfaction and driving targeted improvements.

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THANK YOU



<https://github.com/kiriiri/PHASE-3-PROJECT>



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