

SyriaTel Customer Churn Prediction Project

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Introduction

This project analyzes SyriaTel's customer dataset to identify patterns that predict customer churn.

The goal is to provide data-driven insights that help SyriaTel:

- Identify high-risk customers
- Reduce customer loss
- Protect recurring revenue



Business Problem

SyriaTel has been experiencing a noticeable increase in customer cancellations in their services over recent periods.

This trend is contributing to declining recurring revenue and creating instability in projected financial performance.

The loss of existing customers is placing pressure on overall growth and weakening the company's competitive position in the telecommunications market.

Business Understanding

SyriaTel Company operates in a competitive telecom market where customer switching is easy.

Losing customers impacts:

- Monthly recurring revenue
- Customer lifetime value
- Brand reputation

This project was to answer the following key business questions of SyriaTel:

01

Which customer behaviors are most associated with churn?

02

Can we predict which customers are likely to leave before they do?

03

What actions can SyriaTel take to reduce churn risk?

Data Understanding

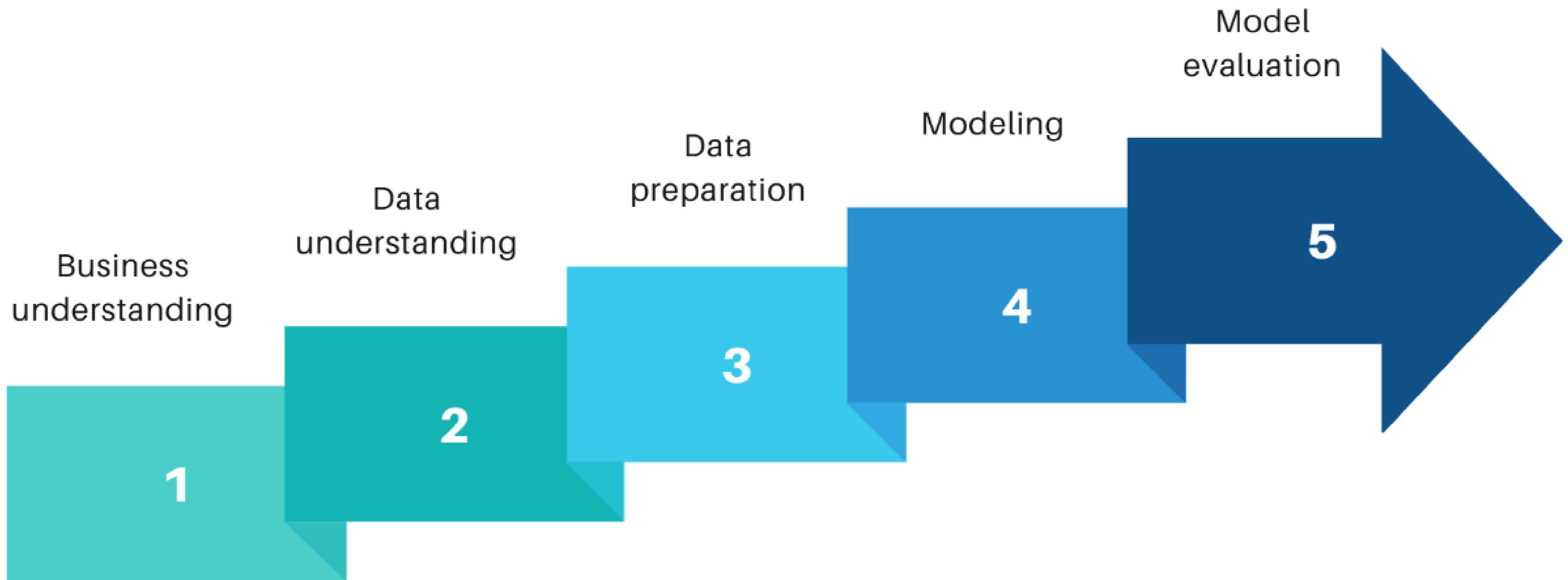
The project utilises SyriaTel dataset that contains approximately 3,300 customer records.

It includes:

- Call usage (day, evening, international minutes & charges)
- Subscription plans (international plan, voicemail plan)
- Customer service call frequency
- Area codes
- Churn status (Stayed or Left)

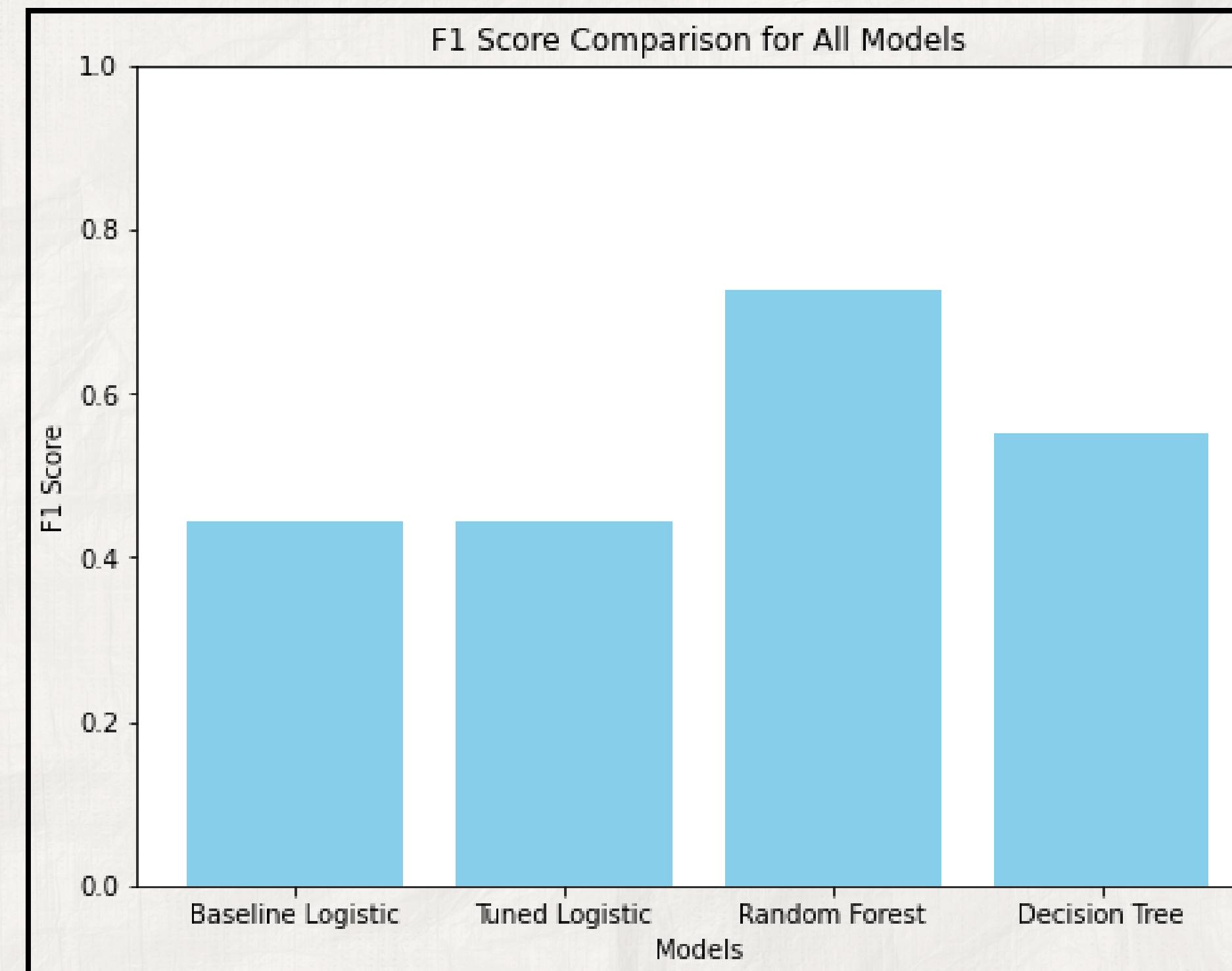


Method



Modelling Approach

- A **classification model** was built to predict whether a customer will leave or stay.
- Classification models group dataset based on patterns, in this case that is “likely to churn” or “likely to stay.”
- This approach was chosen over simple data analysis because it lets us predict at-risk customers who are likely to churn in the future, rather than only focusing on past trends.

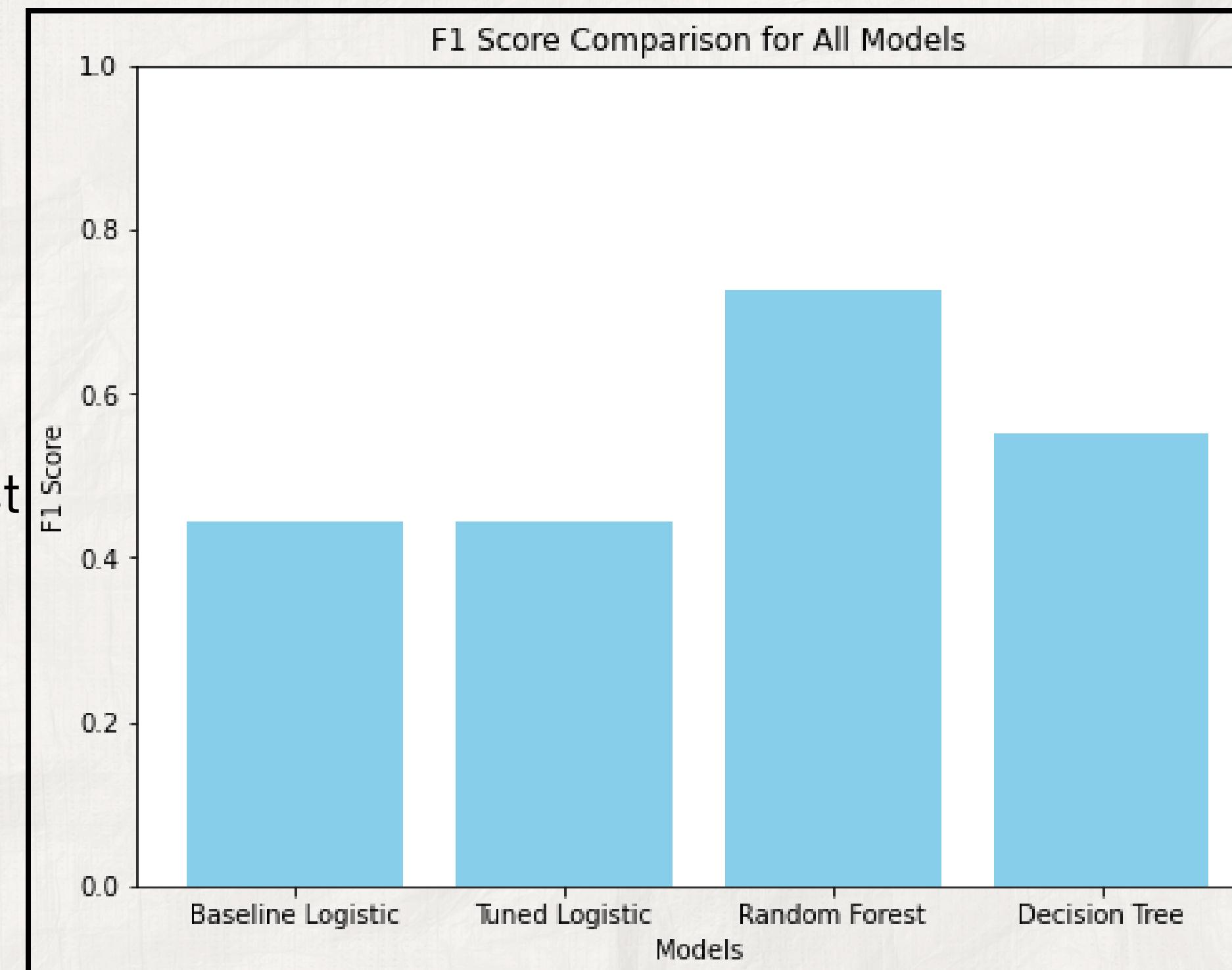


Measuring Performance of the models

- F1 Score was used as an evaluation metric to see how well the model works in practice i.e:
 - Find customers who are likely to leave
 - Avoid mistakenly flagging non-churning customers

Key Result

- The Random Forest model achieved the highest F1 score of 0.73
- This means that the Random Forest Model:
 - Correctly identifies 73 % of customers who are likely to leave
 - Avoids wasting retention efforts by wrongly flagging non-churners



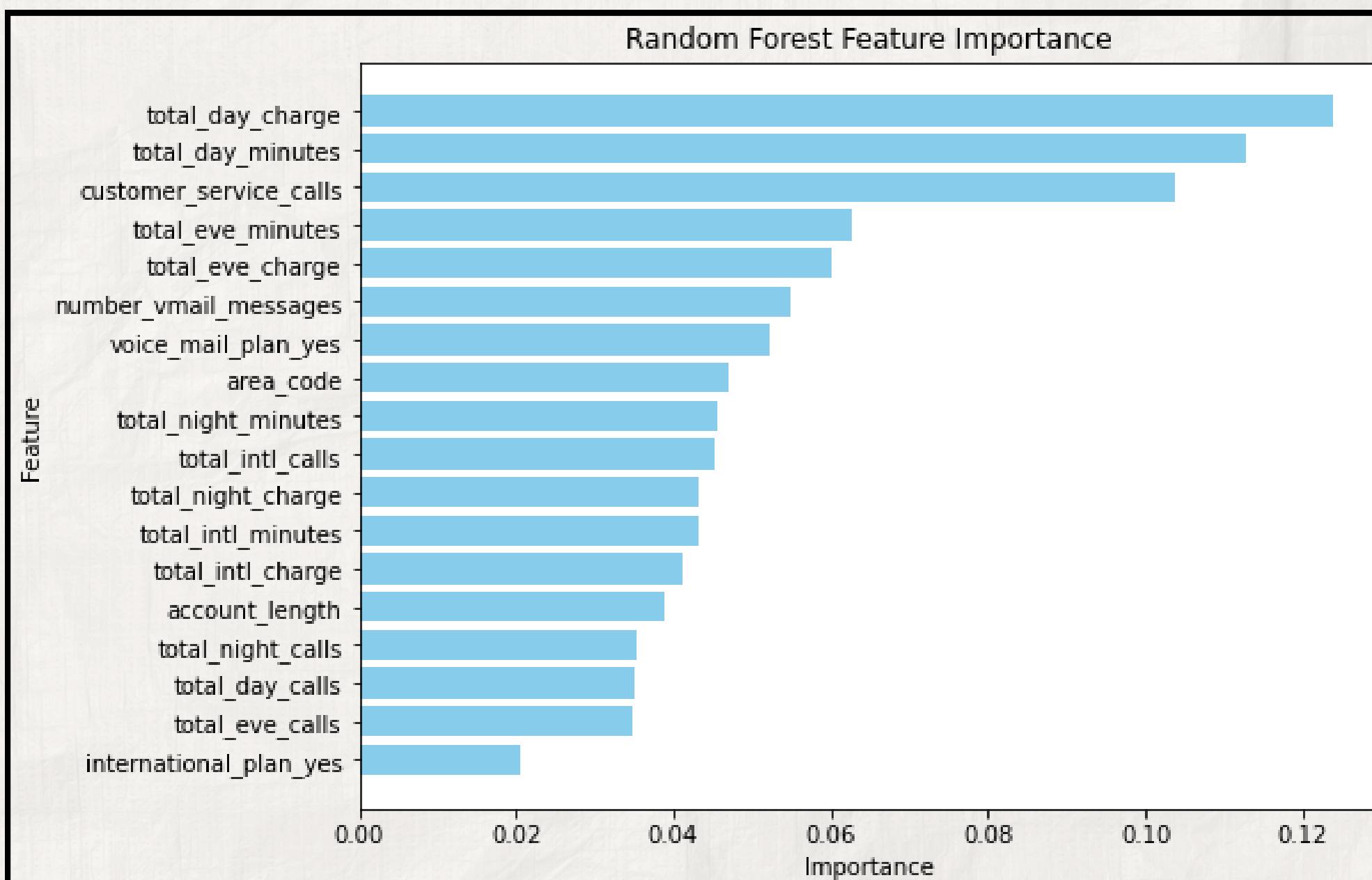
What impacts Churn

What the Chart Shows

- The analysis ranks which customer behaviors and characteristics most influence churn.
- Higher bars mean a stronger impact on whether a customer is likely to leave.

Top Factors Identified:

- Total Day Charge/minutes → Higher daily charges increase churn risk
- Total Evening Charge/minutes → Evening billing patterns also influence churn
- Customer Service Calls → More support calls indicate dissatisfaction



Recommendations

1. Monitor High-Billing Customers

Insight:

Customers with high day and evening charges show higher churn probability

Business Action:

- Offer personalized plans or loyalty discounts
- Flag high-spend customers for retention outreach
- Introduce bundled pricing options

Expected Impact:

Protect high-value accounts and reduce revenue loss.

Recommendations

2.Improve Customer Support

Insight:

Customers who contact customer service frequently are more likely to churn.

Business Action:

- Reduce repeat service calls
- Improve issue resolution time
- Introduce proactive follow-ups for high-frequency callers

Expected Impact:

Improving service experience directly reduces churn risk.

Next steps

What SyriaTel Should Do Next

- Roll out **targeted retention campaigns** based on model predictions
- Track the **impact of interventions** on customer churn over time
- Incorporate **new customer data** to **refine the model** and keep it up-to-date
- Conduct **ongoing analysis** of billing, service usage, and support interactions
- **Expand insights into additional segments** or services for broader business impact



Thank you

