TELECOM CHURN

Predicting Churn

OVERVIEW

This project is aimed to build a classifier model to predict whether a customer will soon stop doing business with SyriaTel, a communications company.

The main interest of the company is in reducing how much money is lost because of customers who don't stick around very long.

The project contains the Business Problem, Data Understanding, Predictive Modeling, Model Evaluation, and Recommendations.

BUSINESS PROBLEM

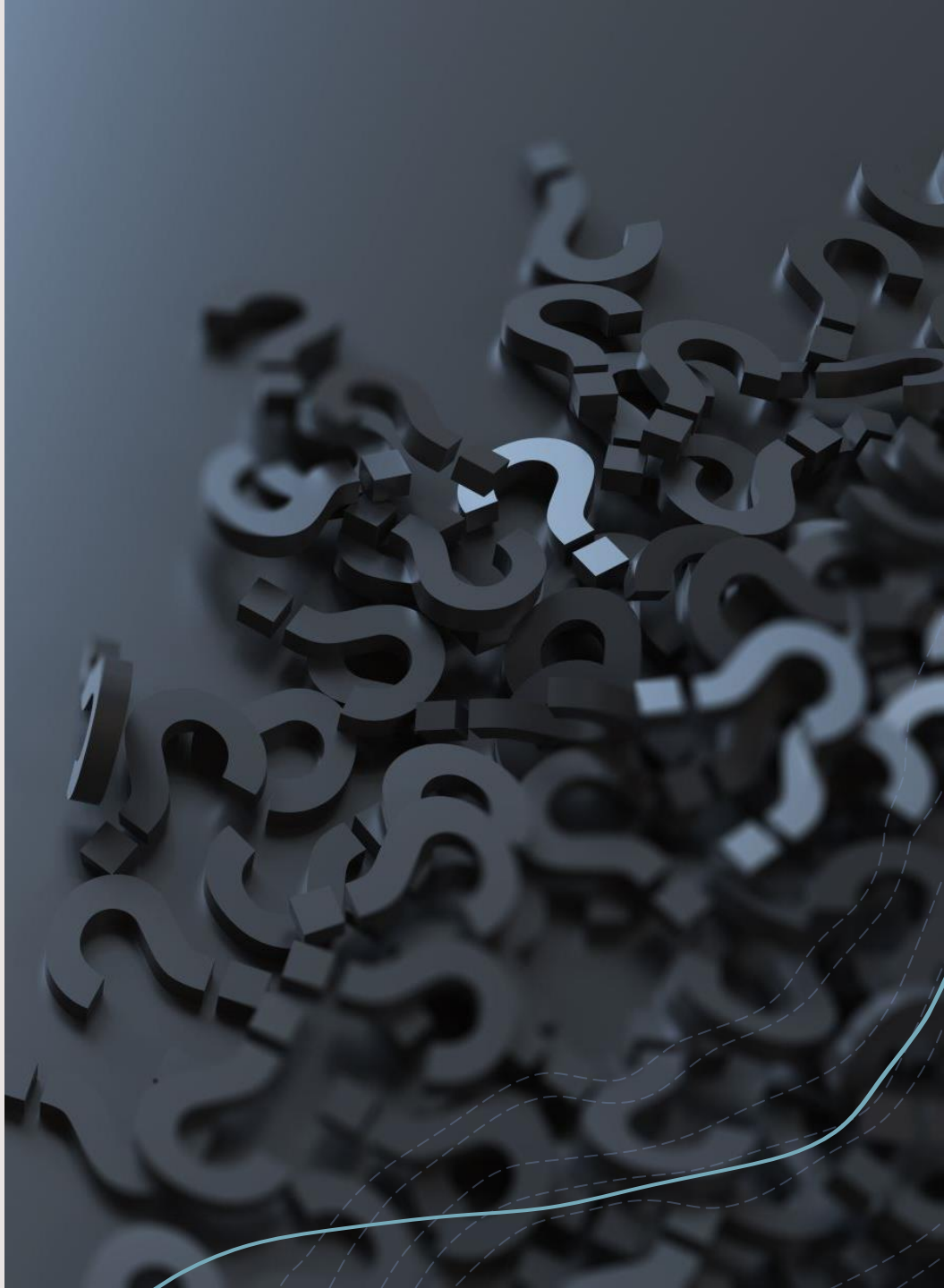
- The business problem involves predicting customer churn for SyriaTel, a telecom company, to proactively identify which customers are likely to leave the service.
- This prediction allows Syriatel to implement targeted retention strategies, thereby reducing customer attrition and enhancing profitability.
- The primary stakeholders in this project include the executive team, who are interested in overall financial performance; the marketing department, which will develop and execute retention campaigns; the customer service team, tasked with addressing customer issues preemptively; and the data analytics team, responsible for developing and maintaining the predictive model.
- Additionally, customers themselves are indirect stakeholders, as improved retention efforts can lead to better service and satisfaction.

DATA UNDERSTANDING

- The dataset,sourced from Kaggle, provides comprehensive information on customer behavior and service usage.
- Key columns include demographic and account details ('state', 'account length', 'area code', 'phone number'), service plans ('international plan', 'voice mail plan'), usage metrics ('number vmail messages', 'total day minutes', 'total eve minutes', 'total night minutes', 'total intl minutes'), corresponding charges, and interaction frequency ('total day calls', 'total eve calls', 'total night calls', 'total intl calls', 'customer service calls').
- The target variable 'churn' indicates whether a customer has discontinued the service. This dataset offers a rich foundation for understanding patterns and factors influencing customer churn, facilitating the development of a predictive model to address the business problem.

MODELING

- **Types of Models:** We use two main types of models: Logistic Regression and Random Forest. Think of these models like tools in a toolbox. They analyze data to predict whether a customer will stay or go.
- **Logistic Regression:** Let's start with Logistic Regression. It's like looking at different pieces of information about a customer, such as how long they've been with us, how much they use our services, and so on. Then, it gives us a probability score, kind of like a weather forecast but for customer churn.
- **Random Forest:** Now, Random Forest is a bit more sophisticated. It's like having a bunch of experts (or trees) each looking at the data from a different angle. Then, they vote on whether a customer will churn or not. By combining all these votes, we get a pretty good idea of what might happen.
- **Model Evaluation:** After we've run our models, we need to see how well they did. We look at things like accuracy (how often they're right), precision (how many of the customers they said would leave actually did), and recall (how many of the customers who actually left did they catch).
- **Choosing the Best Model:** In our case, Random Forest came out on top. It had the highest accuracy and did a good job of finding customers who might leave without bothering too many who would stay.



RECOMMENDATIONS

Focus on Financial Performance: Utilize the churn prediction model to estimate potential revenue loss due to customer churn. Prioritize investments in retention strategies that have the highest potential ROI.

Strategic Planning: Incorporate churn predictions into the company's strategic planning processes to allocate resources effectively and anticipate future challenge

THANK YOU