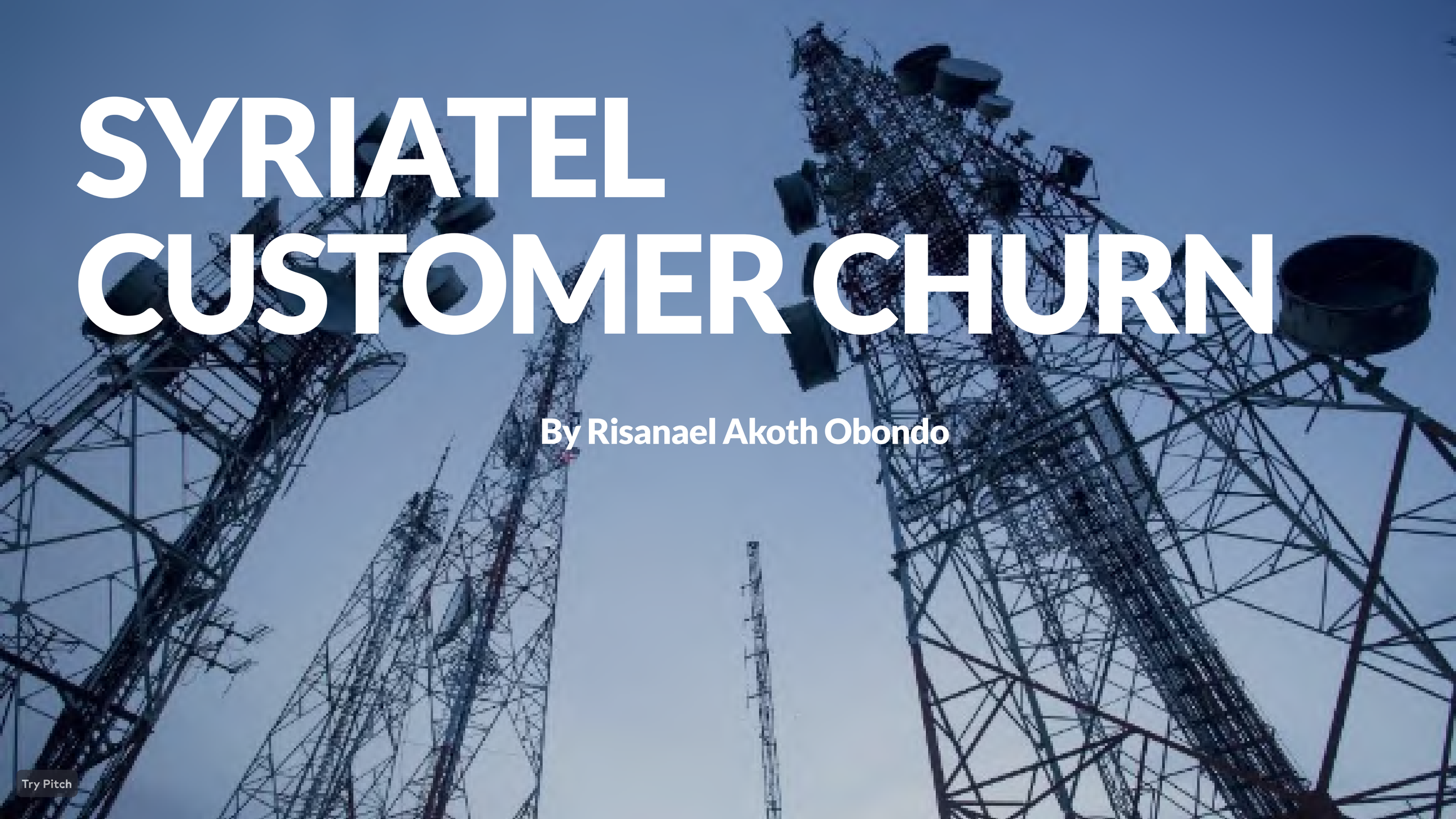


SYRIATEL CUSTOMER CHURN

By Risanael Akoth Obondo

CONTEXT

1. Introduction
2. Problem Statement
3. Objectives
4. Data Understanding
5. Data Analysis
6. Modeling
7. Evaluation
8. Recommendations
9. Next Steps

Introduction

In Syria, telecommunications services face a unique set of circumstances. The industry is highly regulated, with the government-owned Syrian Telecommunications Establishment (STE) maintaining a stronghold on fixed-line markets. This regulatory environment, combined with infrastructure disparities, particularly in remote areas relying on satellite communications, creates a complex landscape for telecom providers. Despite these challenges, SyriaTel strives to provide reliable and innovative services to its diverse customer base.

Problem Statement

SyriaTel is grappling with a pressing issue—increased customer churn. The emergence of customers discontinuing their services poses a significant risk to the company's stability and growth. To address this challenge, the key objective is to build a robust classifier capable of predicting whether a customer is likely to churn in the near future.

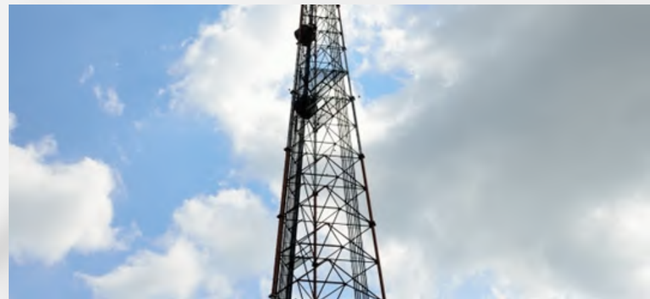
Objectives

1. Identify the key factors influencing customer churn by analyzing historical data.

2. Develop a predictive model- Create a machine learning model to predict customer churn based on historical data.

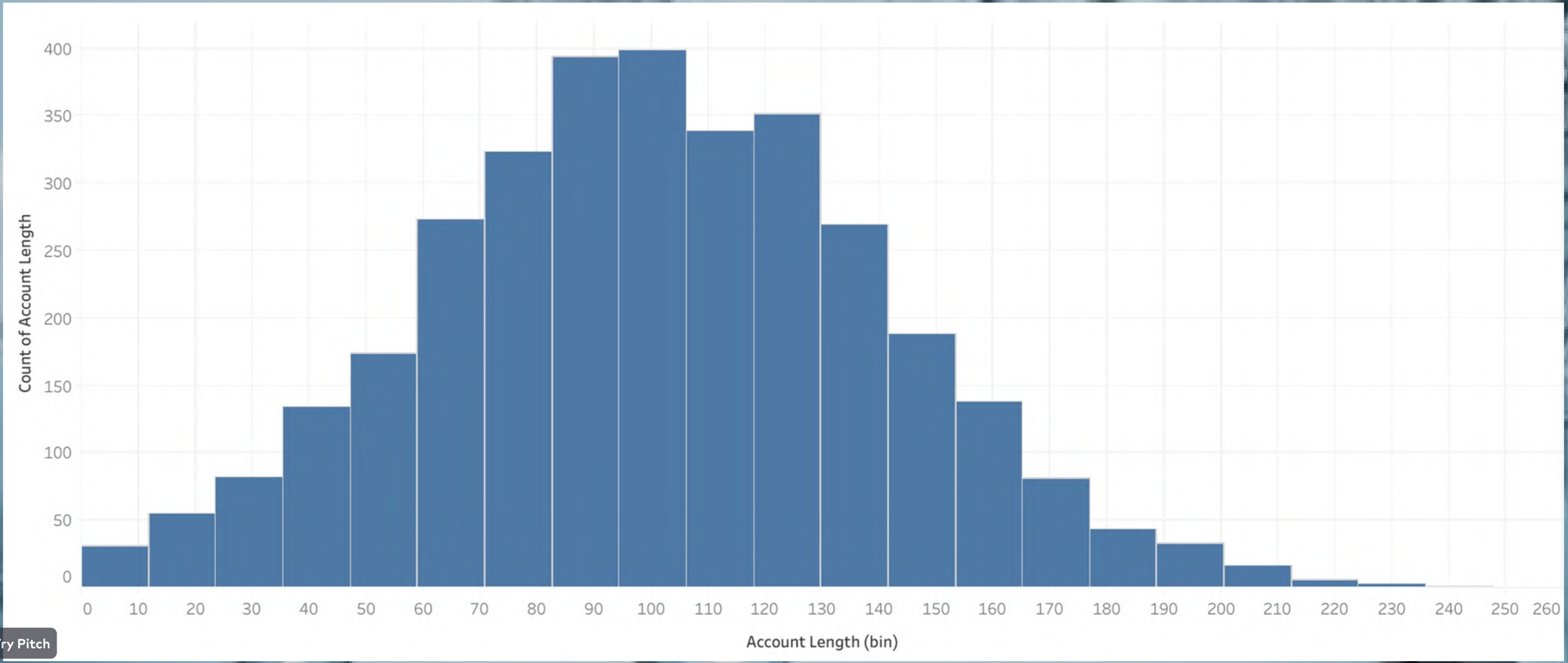
3. Enhance customer satisfaction by addressing specific issues contributing to churn.

4. Implement proactive retention strategies- Utilize insights from the predictive model to develop and implement targeted retention strategies for at-risk customers.



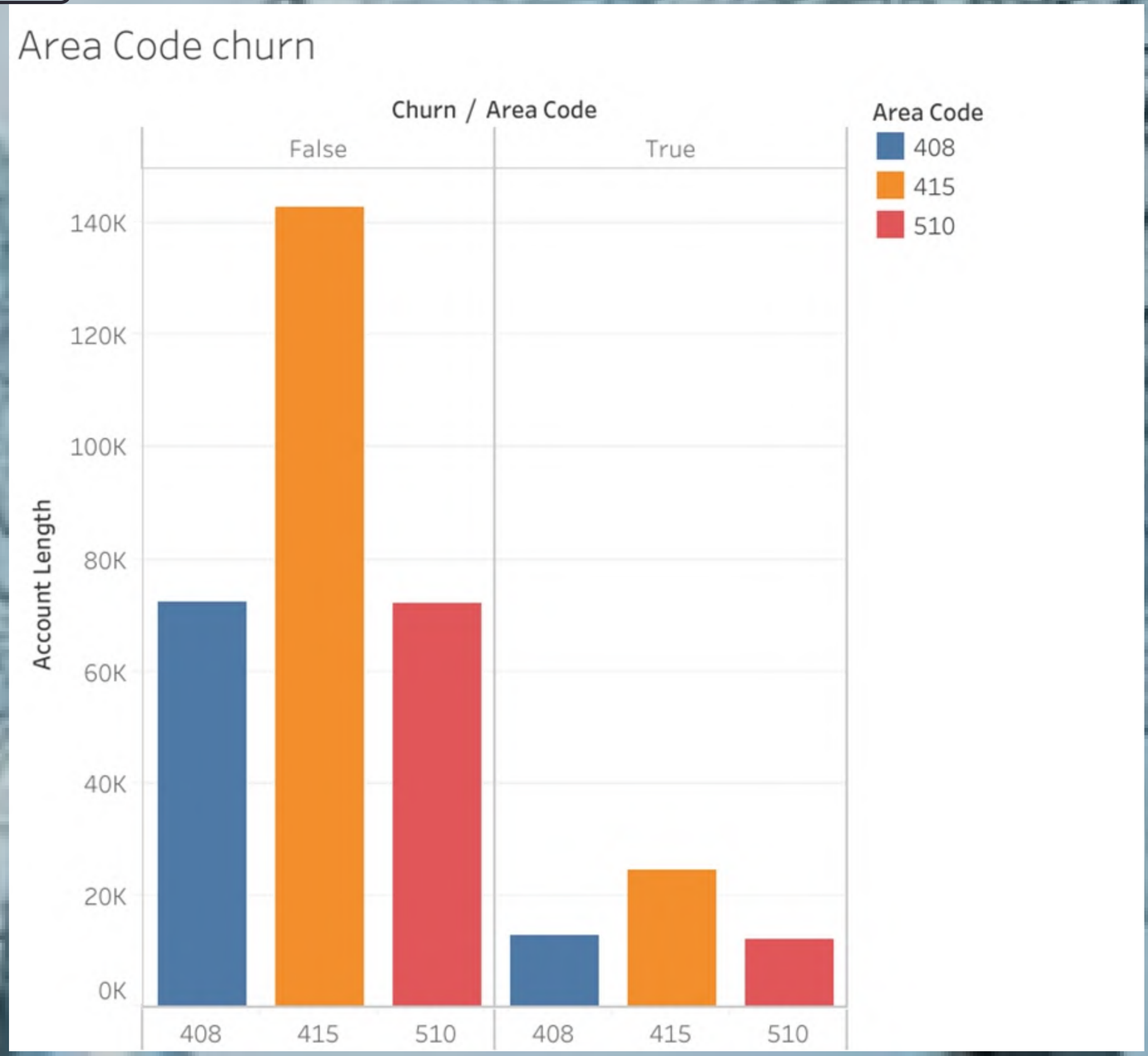
Univariate Analysis

The distribution of account length



06 Data analysis

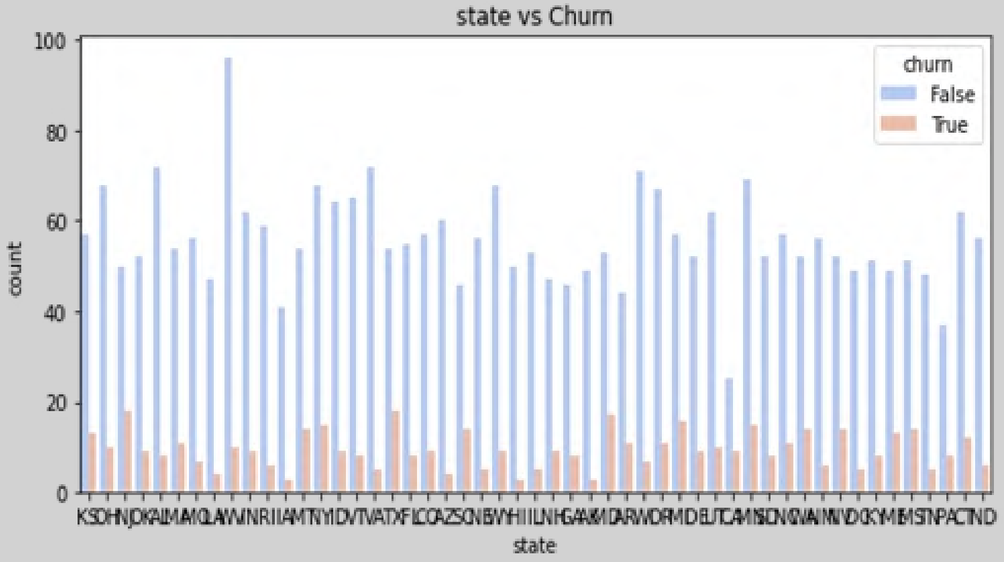
Bivariate Analysis

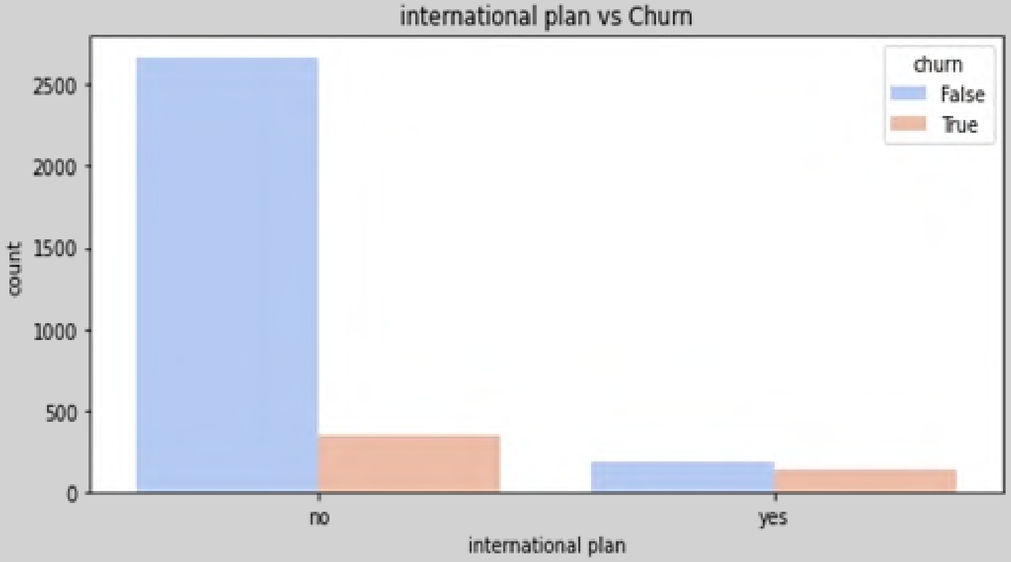


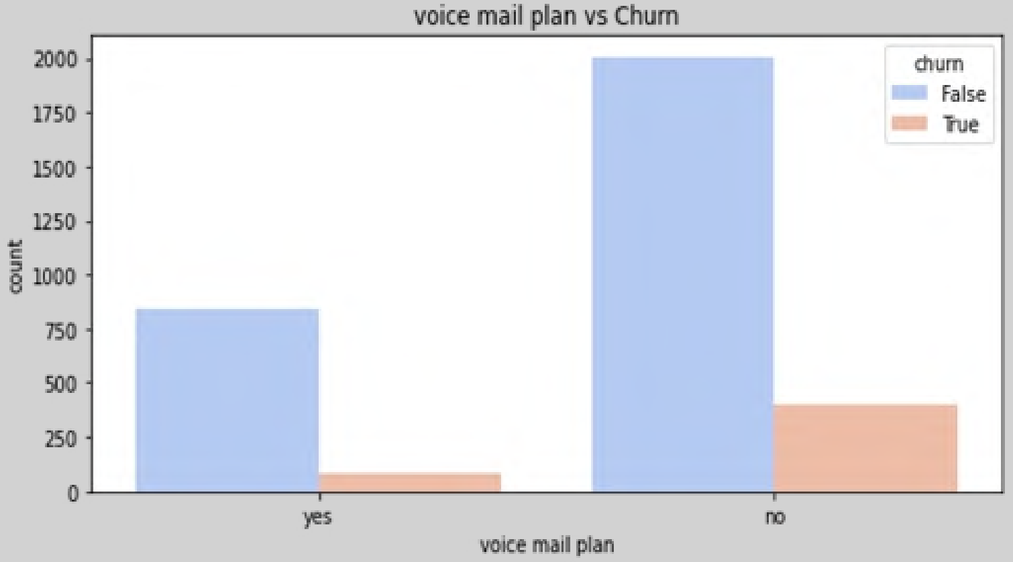
Bivariate Analysis

Here are some of the relationships between categorical variables and target variable(churn).

The number of customers that did not churn is higher than those that churned.

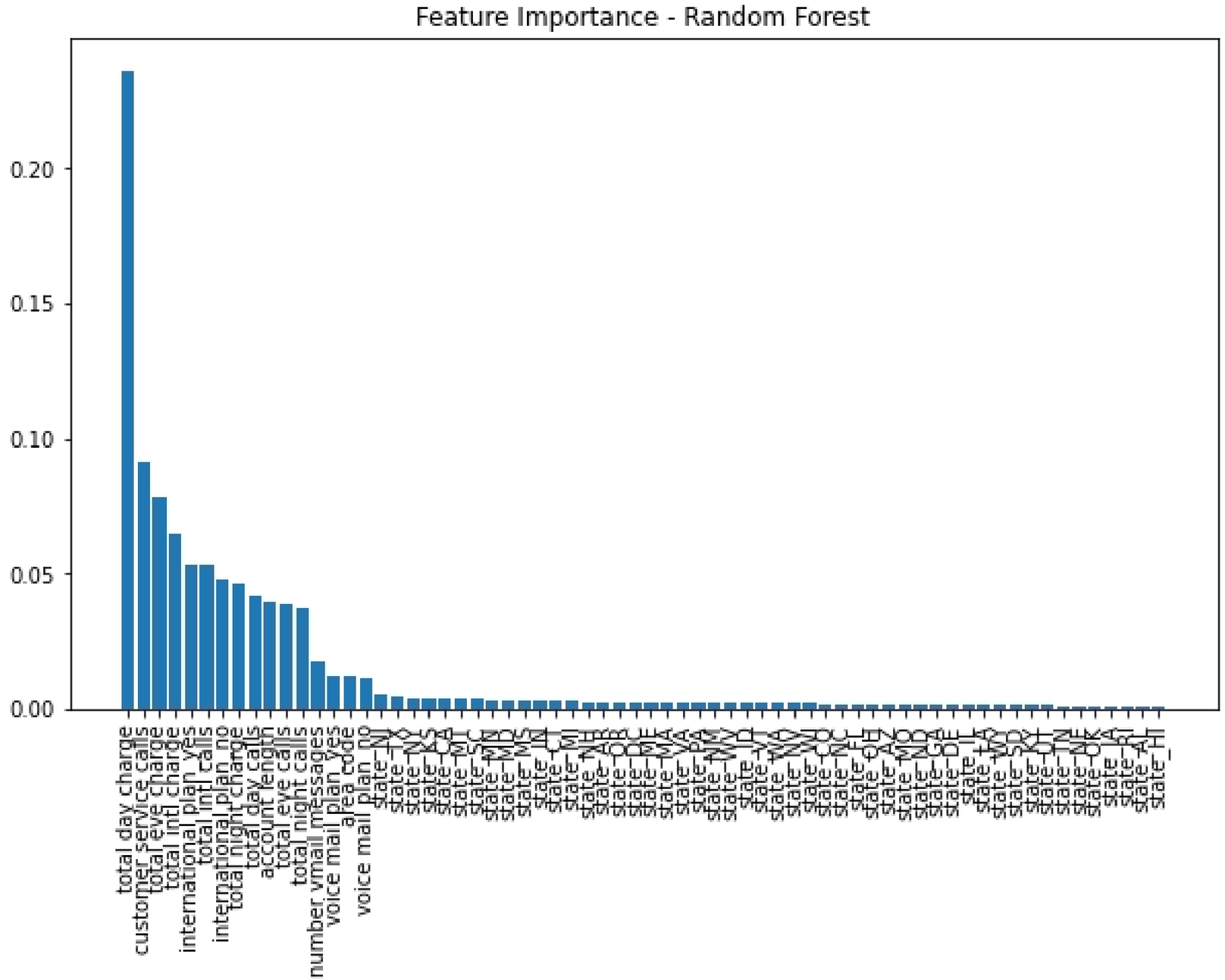






Modeling

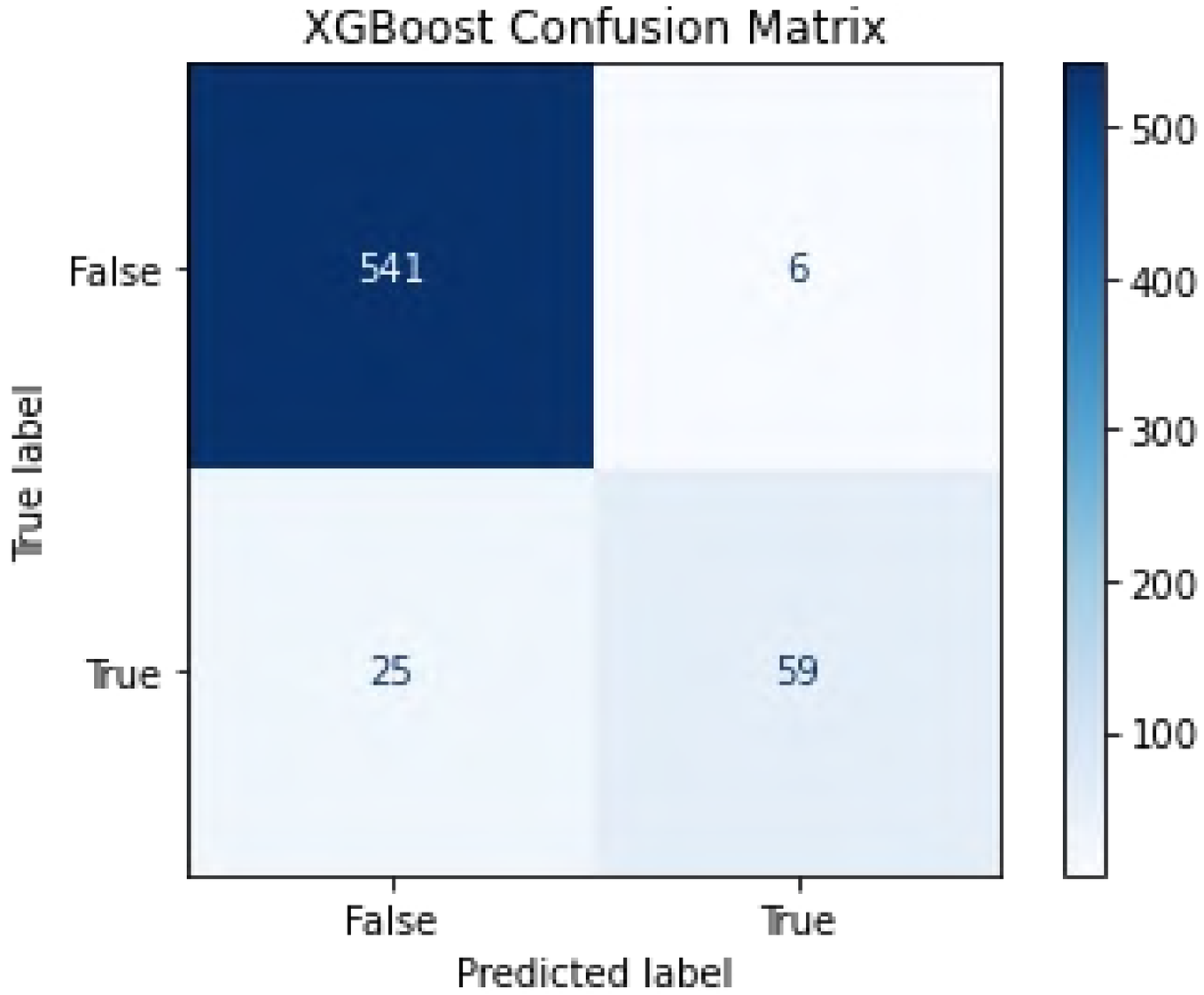
These are the feature importance in the random forest model from the best to the least important with total day charge in the lead. This model also had an accuracy score of 0.93 and F1 score of 0.67.



Try Pitch

Modeling

Best performing model is the XGBoost with an accuracy of 0.95 and f1 score of 0.79. In as much as it is a good metric, there might be overfitting and we need to perform hyperparameter tuning to reduce



Evaluation

We used accuracy, precision, F1 Score and recall to evaluate model performance. In this case recall show how many positive cases were able to be predicted correctly. We are concerned with the false negative more than the false positives. Failure to predict the customer will churn, we are at risk of loosing money to a customer. Precision ensures targeted and accurate interventions, while recall captures a significant portion of actual churn instances. The balanced F1 score reflects a harmonized trade-off between precision and recall.

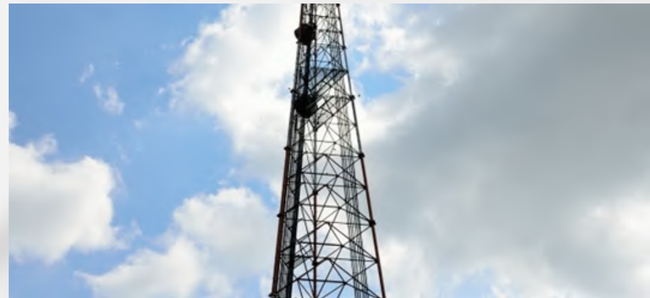
Recommendations

1. Integrate customer feedback mechanisms to enhance the model's predictive capabilities

2. Establish a system for ongoing monitoring of the model's performance.

3. Leverage the model's insights to implement targeted retention strategies

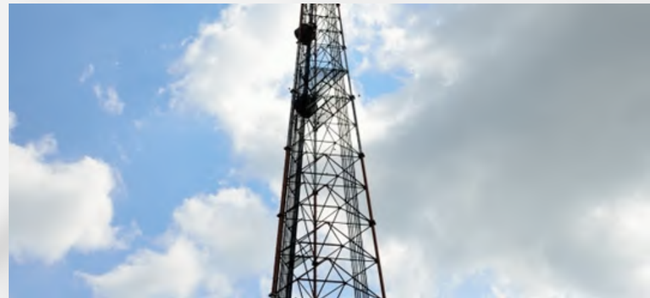
4. Incorporate qualitative insights to refine retention strategies and improve customer satisfaction.



Next Steps

1. Documentation and Communication: Document the entire process including monitoring procedures, data update schedules, feedback integration mechanisms, and retention initiatives.

2. Continuously optimize the model and retention initiatives based on new data, feedback, and evolving business needs.



Pitch

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