Telecom Churn Analysis EDA

Instructions:

i) Please fill in all the required information.

ii) Avoid grammatical errors.

Name__&__email:
1: Mohmmad sohel Email: sohilk9350678@gmail.com 1) Data acquisition and preparation a. Import csv file, libraries b. Head, tail, describe, info 2) Data Cleaning a. Missing/Null values b. Duplicates 3) Data Wrangling a. Area code wise b. Churn by state c. International plan d. Voice mail plan e. Combination of International and Voice mail plan 4) Data Visualization a. Visualization of Dependent Variable b. Distribution and Box plot c. State with most/least churn percentage d. Account length with churn e. International plan f. Area code g. Overall calls h. Customer service calls i. Voice mail plan

j. Correlation plot
k. Pair plot

5) Data Summarization/ solution / conclusion
   a. Insights from visualizations
   b. Summary
   c. Technical Documentation

Please paste the GitHub Repo link.

GitHub Link: - https://github.com/khansohel001/telecom-churn-analysis

Please write a short summary of your Capstone project and its components. Describe the problem statement, your approaches and your conclusions. (200-400 words)

Problem Statement

Telecom churn analysis is the process of identifying customers who are likely to cancel their service or switch to a different service provider. This is an important problem for telecom companies, as churn can have a significant impact on their revenue and profitability.

Orange S.A., formerly France Telecom S.A., is a French multinational telecommunications corporation. The Orange Telecom's Churn Dataset, consists of cleaned customer activity data (features), along with a churn label specifying whether a customer cancel the subscription. Explore and analyze the data to discover key factors responsible for customer churn and come up with ways/recommendations to ensure customer retention.

Business Objective

Identify key cause of customer churn

Provide steps to retain valuable customers

Approach

Here are the key steps for conducting an exploratory data analysis (EDA) for telecom churn analysis:

1. Data acquisition: Obtain a representative sample of the data from the

telecom company, including customer demographic information, usage patterns, and churn status.

2. Data cleaning: Remove any missing or incomplete data, and ensure that the data is in a format that can be easily analyzed.
3. Data visualization: Use plots and charts to visualize the data and identify trends and patterns. For example, you might create histograms to understand the distribution of customer tenure or usage patterns, or scatter plots to identify correlations between different variables.
4. Data summarization: Use statistical techniques to summarize the data and understand the relationships between different variables. For example, you might calculate means, medians, and standard deviations to understand the distribution of customer tenure or usage patterns.

Overall, the goal of EDA for telecom churn analysis is to understand the factors that contribute to churn and to develop strategies to reduce churn by targeting those factors.

Solution to Business Objective

To reduce churn and improve customer retention, it is important to take a proactive approach. One effective strategy is to modify the International Plan so that the charges are the same as the normal plan. This will help to address any potential dissatisfaction with higher charges for international usage. In addition, being proactive with communication and asking for feedback often can help to identify and address any issues that may lead to churn. Offering promotions periodically can also help to retain customers, as can focusing on customers experiencing problems in states with high churn rates. Another important consideration is to pay attention to your best customers and make sure they are receiving the support they need. Regular server maintenance and addressing poor network connectivity issues can also help to reduce churn. Developing a roadmap for onboarding new customers can help to ensure a smooth onboarding process and reduce the likelihood of churn. Analyzing churn when it occurs can provide valuable insights into the factors contributing to churn, which can inform

strategies for reducing churn. Finally, it is important to stay competitive by keeping up with industry trends and continuously improving the customer experience.

Conclusion

The telecommunications market is already well-established, and the rate of new customers is slow. As a result, companies in this industry prioritize retention and reducing customer churn. This project analyzed a churn dataset to identify the main factors contributing to churn and gain valuable insights. Through exploratory data analysis, we were able to gain insight into the churn dataset, listed below:

1. The charge fields are directly related to the minute fields.
2. The area code may not be relevant and can be excluded.
3. Customers with the International Plan tend to churn more often.
4. Customers who have had four or more customer service calls churn significantly more than other customers.
5. Customers with high day and evening minute usage tend to churn at a higher rate.
6. There is no clear relationship between churn and the variables such as day calls, evening calls, night calls, international calls, night minutes, international minutes, account length, or voice mail messages.