

Telecom Churn Analysis

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Abstract:

According to Wikipedia, churn rate or customer churn when applied to a customer base, refers to the proportion of contractual customers or subscribers who leave a supplier during a given time period.

Telephone service companies, Internet service providers, pay TV companies, insurance firms, and alarm monitoring services, often use customer churn analysis and customer attrition rates as one of their key business metrics because the cost of retaining an existing customer is far less than acquiring a new one. Companies from these sectors often have customer service branches which attempt to win back defecting customers, because recovered long-term customers can be worth much more to a company than newly recruited customers. These churn analysis, they are effective at focusing customer retention marketing programs on the subset of the customer base who are most vulnerable to churn.

1.Problem Statement

The Orange Telecom's Churn Dataset, consists of cleaned customer activity data (features), along with a churn label

specifying whether a customer canceled the subscription.

The main objective is to Explore and analyze the data to discover key factors responsible for customer churn and come up with ways/recommendations to ensure customer retention.

- State: In this Telecom Churn Dataset, the data has 51 States given in which Orange S.A. has customers spread about.
- Account length: In the Dataset, it tells us how long customer account has been active.
- Area code: In the Dataset, it shows the area code of the customer.
- International plan: It tells us whether a customer has subscribed to International plan or not.
- Voice mail plan: It tells us whether a customer has subscribed to Voice mail plan or not.
- Number vmail messages: It shows number of voice mail messages sent by customer.
- Total day minutes: It tells us number of minutes a customer spent on call in daytime.
- Total day calls: It tells us number of calls made by a customer in daytime.
- Total day charge: It tells us the charges incurred by a customer in daytime only.

- Total eve minutes: It tells us number of minutes a customer spent on call in evening.
- Total eve calls: It tells us number of calls made by a customer in evening.
- Total eve charge: It tells us the charges incurred by a customer in evening only.
- Total night minutes: It tells us number of minutes a customer spent on call in night time.
- Total night calls: It tells us number of calls made by a customer in night time.
- Total night charge: It tells us the charges incurred by a customer in night time only.
- Total intl minutes: It tells us number of minutes a customer spent on an International calls.
- Total intl calls: It tells us number of International calls made by a customer.
- Total intl charge: It tells us the charges incurred by a customer for making International calls.
- Customer service calls: It tells us number of times a customer called customer service.
- Churn: In this Dataset, churn tells us whether a customer is likely to discontinue telecom service.

2. Steps involved:

- **Exploratory Data Analysis**

After loading the dataset we performed this method by comparing our target variable that is Churn with other independent variables. This process helped us figuring out various aspects and relationships among the target and the independent variables.

- **Encoding of categorical columns**

We used Encoding to introduce binary integers of 0 and 1 to encode our categorical features because categorical features that are in string format cannot be understood by the machine and needs to be converted to numerical format.

3. Conclusion:

In many industries it is more expensive to find a new customer then to entice an existing one to stay. So, our aim is to accurately identify the cohort who is likely to leave early enough so that the relationship can be saved.

In Conclusion, if we want to increase Customer Retention then we have to improve Customer Service Calls feature. And convince Customers to subscribe to either International plan or Voice Mail Plan as they are helpful in Customer retention.

References-

1. Wikipedia

2. Stackoverflow
3. GeeksforGeeks