

27th April, 2023

Associate Director
PowerCo Ltd.
Europe

Dear Sir/Ma,

CUSTOMER CHURN DRIVEN BY PRICE SENSITIVITIES

I hope this email meets you well. Thank you for the opportunity into going deeper to test the hypothesis that customer churn is driven by price sensitivities. Based on our initial meeting i will like to propose a data science approach to test this hypothesis of the price sensitivities. Without much ado, here are the step and approaches for testing this hypothesis:

1)

Data collection:

We will need customer data to make reasonable analysis:

- Customer information: this includes name(name of customer or business),address(residential, business), size(size of family or organisation),contract(start date, ending or method of determination).
- Price charged for each customer: historical data and changes made over time.

Churn Data: Possible reason for Churn (if any) and details of customers.

2) Data Preprocessing:

Preprocessing the data and transforming it into suitable mode for analysis, which should include:

- Feature Engineering: Categorical encoding, merging of datasets
- Data Cleaning: removing outliers, removing the Nan values, making sure the mean is not far from the standard deviation for the numerical columns, in all that the data is not skewed and it is not an imbalanced dataset.

3) Exploratory analysis:

- Plot graphs to try to view and determine if any relationship between churn customers and anything else.
- Use of clustering algorithms like K-Nearest neighbours to visualise relationships in the data.

4) Predictive analysis:

Using machine learning algorithms we can predict the likelihood of churn per each customer.

We can begin the approach through:

- Feature selection: dropping of irrelevant columns either manually or by machine learning algorithms such as Boruta or Random Forest.
- Model Training: split the dataset into training and testing used for classification algorithms like XGBOOST or Random forest.
- Model evaluation: Evaluate the accuracy of the model with modes such as precision,accuracy,recall.
- Model deployment: deploying the model into production.

5) Discount strategy:

Based on our model, the discount strategy can be targeted at our customers paying a high tariff to incentivize them to stay and not churn . it will be wise to regularly evaluate this discount strategy to know how effective it is playing out in the bigger scheme of things.

I am of the opinion that this approach will allow us to gain reasonable insight into the hypothesis that churn is driven by customers' price sensitivities. Will be glad to answer any follow up questions as regards to my email.

Yours sincerely
Tony Akalonu