Subject: Proposal for Testing the Hypothesis on Churn Driven by Price Sensitivity for the client PowerCo

Dear Associate Director,

I hope this email find you well. I am writing this email to present my understanding and hypothesis testing for the customer churn problem put forth by the client Powerco.

PowerCo is a major gas and electricity utility that supplies to corporate, SME (Small & Medium Enterprise), and residential customers. The power-liberalization of the energy market in Europe has led to significant customer churn, especially in the SME segment.

A reasonable assumption is that alterations in pricing impact customer attrition. Consequently, understanding the likelihood of customers churning at their current pricing is crucial. Furthermore, for customers identified as being at risk of churning, offering a discount could serve as an incentive to retain their business. Therefore, the head of the SME division is contemplating a substantial 20% discount, intending to dissuade almost any customer from leaving, particularly those for whom pricing is the primary factor influencing their decision.

Business Problem: A predictive model to test the hypothesis that the churn is driven by the customers’ price sensitivities.

Below are the steps that are proposed to tackle the business problem.

Step1: Data Collection

Gathering relevant data from the client about the customer history is very crucial. Data indicating the historical usage, pricing and demographic details will be obtained. These details are as listed but not limited to

customer ID,

customer’s join date,

current customer paying price per annum,

Increase in customer paying price per annum,

customer age with company,

customer churn (data if available),

customer annual income,

number of incidents raised by customer per annum on an average or total number of incident raised by the customer to the client,

location of the customer

Step2: Constructing a Data Frame:

Create a data frame where each row represents an SME customer and each column includes relevant features such as customer ID, usage patterns, contract details, historical pricing, and the churn status.

Step3: Exploratory Data Analysis (EDA)

To understand the feature trends and distributions, EDA is performed on the relevant fields. The correlation between the price factor and the customer churn is analysed. Moreover, other potential factors contributing to churn, such as contract length, customer type, and demographic information will be explored.

Step4: Feature Engineering

Derive additional features that might be indicative of price sensitivity, such as the percentage change in pricing, customer tenure, and usage patterns.

Step5: Modelling

Based on the EDA outcome and the data distribution, appropriate predictive model will be used to fit and transform the cleaned data and predict the churn factor. The model will be trained using historical data and its performance will be validated using a suitable evaluation metric.

Step6: Testing the Hypothesis

Apply the trained model to predict which customers are at a higher risk of churning. Testing if offering the product at a discounted price alter the outcome of customer churn. Then, recommend offering the 20% discount to customers identified as high-risk by the model.

Step7: Monitoring and Continuous Improvement

Implement the model on the 1st working day of every month and monitor its performance.

Then, collect feedback from the sales team and adjust the model as needed to improve accuracy.

I believe this approach will provide valuable insights into the relationship between price sensitivity and churn in the SME segment, enabling us to make data-driven recommendations for the proposed 20% discount incentive.

Looking forward to your feedback and further guidance.

Best regards,

Kasturi Sai Tejaswini