

Problem Statement:

PowerCo, a major gas and electricity utility, is facing significant customer churn in the SME (Small & Medium Enterprise) segment. They have partnered with BCG to identify the root cause of this churn. One potential hypothesis is that price changes may impact customer churn, and PowerCo is considering offering a 20% discount to incentivize at-risk customers to stay.

Complication:

PowerCo is unsure which customers are most likely to churn at their current price, making it difficult to effectively target the discount. Additionally, they need to ensure that the discount will have a significant impact on customer retention, and not just be a temporary fix.

Question:

How can PowerCo test the hypothesis that price changes are driving customer churn and determine which customers should be offered the 20% discount?

Answer:

After analyzing the data, PowerCo's team found that numeric data was not normally distributed and required log transformations, and there were many outliers. Additionally, only 18.2% of customers subscribed to gas, with non-subscribers having a higher churn rate. However, price did not seem to be a significant factor in determining churn.

To identify which customers were most likely to churn, the team engineered features, including a difference in off-peak prices between December and the previous January, which showed predictive power. They also handled imbalance in the dataset using SMOTE and trained a Random Forest classifier to predict customer churn.

The results showed that the model correctly predicted a high number of true positives and true negatives, with a low number of false positives and false negatives. The model also performed well in accuracy, precision, recall, and AUC.

Based on these findings, PowerCo can confidently use the predictive model on the first working day of every month to identify which customers should be offered the 20% discount. This approach will help them retain customers who are at risk of churning due to price sensitivity. Additionally, PowerCo can use the insights gained from this analysis to improve their pricing strategies, identify and discontinue unfruitful campaigns and sales channels, and ultimately reduce customer churn.