

Subject: Reducing Churn with Data-Driven Insights

Dear PowerCo,

I hope this email finds you well. I am writing to discuss a critical challenge faced by PowerCo - customer churn. As you are aware, churn is when a customer discontinues using our services, which can lead to revenue loss, damage to the company's reputation, and hindered growth. To address this issue proactively, we propose leveraging data-driven insights to predict which customers are likely to churn and take preventive actions before they leave.

#### Business Understanding:

Our primary goal is to reduce customer churn and improve customer retention. To achieve this, we need to identify patterns and factors that contribute to customer churn. By analyzing historical customer data, we aim to build a predictive model that can accurately forecast the likelihood of churn for each customer.

#### Hypothesis Framing:

Based on the problem at hand, we have formulated several hypotheses that may impact churn:

1. Customers with a high number of active products and services (nb\_prod\_act) are less likely to churn.
2. Customers who have been with the company for a longer time (num\_years\_antig) are less likely to churn.
3. Customers who have experienced recent modifications in their products (date\_modif\_prod) are more likely to churn.
4. Customers who have upcoming contract renewals (date\_renewal) are less likely to churn.
5. Customers who have received higher forecasted discounts (forecast\_discount\_energy) are less likely to churn.
6. Customers with higher net margins on their power subscription (margin\_net\_pow\_ele) are less likely to churn.
7. Customers with a higher subscribed power (pow\_max) are less likely to churn.

8. Customers who have experienced a significant increase in electricity consumption in the last month (cons\_last\_month) are more likely to churn.

9. Customers who have a higher forecasted electricity consumption for the next 12 months (forecast\_cons\_12m) are less likely to churn.

10. Customers who have both electricity and gas subscriptions (has\_gas) are less likely to churn.

#### Analysis Required:

To tackle the churn challenge effectively, the following data analysis steps need to be undertaken:

##### 1. Data Preprocessing:

- Investigate and handle missing or incomplete data.
- Identify and remove duplicate or irrelevant data.
- Transform data formats if required and encode categorical data.

##### 2. Exploratory Data Analysis (EDA):

- Analyze the distribution of churn in the dataset.
- Explore the relationship between features and churn.
- Identify correlations between features to understand customer behavior patterns.

##### 3. Feature Engineering:

- Create new features that can enhance the churn prediction model.
- Select the most relevant features with significant impact on churn.

##### 4. Model Building:

- Utilize the Random Forest Classifier model for churn prediction.
- Train the model using preprocessed customer data.

#### 5. Model Evaluation:

- Evaluate the model's performance using recall metric.
- Ensure the model has good accuracy and generalization.

#### 6. Interpretation of the Model:

- Identify the most influential features in predicting churn.
- Analyze the reasons behind high churn risk for specific customers.

#### 7. Implementation and Action:

- Implement strategic discount offers for identified high-risk customers, demonstrating PowerCo's commitment to customer satisfaction.
- Use the model to predict churn for new customer data.
- Take preventive actions or offer special incentives to high-risk customers.
- Implement targeted marketing and retention strategies to reduce churn.

#### 8. Monitoring:

- Regularly monitor the model's performance and update if necessary.
- Continuously monitor overall churn rates and analyze trends over time.
- With proper analysis and appropriate preventive strategies, PowerCo can reduce churn and enhance customer retention.

Let's collaborate on this data-driven approach to address customer churn effectively. By using advanced analytics and insights, we can develop a proactive and targeted strategy to retain our valuable customers and drive business growth.

Looking forward to working together on this important initiative.

Best regards,

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