Subject: Exploring Customer Churn Insights for PowerCo: A Data Science Approach

Dear Associate Director,

I hope this email finds you well. As we delve into addressing customer churn for PowerCo, it's imperative to outline our approach using the quintessential 5-step data science process. Here's a breakdown of the major steps required to tackle this challenge:

Problem Formulation:

Our primary concern revolves around understanding and mitigating customer churn within PowerCo's gas and energy services. The overarching problem statement is to identify the key factors influencing customer decisions to either stay with PowerCo or switch to other energy providers.

Data Collection:

To investigate the reasons behind customer churn, we need to gather relevant data encompassing various aspects of customer interactions and preferences. Key data points include:

- Customer purchasing trends over the past 5 years, detailing consumption patterns and expenditure.

- Demographic information such as location, age, and household size.

- Service-specific data like pricing plans, contract lengths, and usage statistics.

- Feedback and complaints data reflecting customer satisfaction levels and experiences with PowerCo's services.

Data Preprocessing:

Once the data is collected, it needs to be cleaned and prepared for analysis. This involves handling missing values, removing duplicates, and standardizing formats to ensure data integrity and consistency.

Exploratory Data Analysis (EDA):

EDA involves examining the collected data to uncover meaningful insights and patterns. In the context of customer churn, we'll explore correlations between various factors such as:

- Pricing competitiveness compared to other providers.

- The proportion of clean energy in PowerCo's offerings.

- Customer service quality metrics including response times and issue resolution rates.

- Geographical distribution and its impact on customer preferences.

Modeling and Visualization:

To test the impact of different factors on customer churn, we'll employ advanced analytics techniques such as machine learning models and statistical tests. These models can predict churn probabilities based on historical data and identify the most influential factors.

Additionally, visualization techniques such as:

- Geographic heatmaps illustrating churn rates across different regions.

- Trend analysis plots showcasing changes in customer behavior over time.

- Comparative charts highlighting PowerCo's performance against competitors on various metrics.

By following this data science framework, we aim to gain deeper insights into the underlying reasons driving customer churn and formulate targeted strategies to enhance customer retention for PowerCo.

Looking forward to discussing this further and initiating the next steps in our data-driven journey.

Best regards,

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