Proactive Churn Management: Harnessing Data, AI, and ML to Drive Customer Retention

**Business Challenge:**

* Our client, a Fortune 100 telecom company, sought a solution to proactively manage customer churn and improve customer retention rates across industries.
* With a diverse range of services and impressive annual revenue, they aimed to predict churn and mitigate it effectively, addressing the critical challenge they faced in retaining their B2B clients.

**Our Approach & Solution:**

* **Consulting Session**
  + In a comprehensive consulting session with the client, we aimed to understand their business needs, available data, and obstacles.
  + Recognizing their global operations and varied product portfolio, we developed a churn prediction model that considered both macroeconomic and microeconomic parameters. This ensured precise, valuable insights for the client.
* **Strategy** 
  + Based on our assessment, we devised a strategy to create a minimum viable product (MVP) that could potentially meet the client's requirements. Here's an overview of the steps we took:
    - Analyze sample data headers provided by the client to gain insights into the diverse data present in their database.
    - Generate synthetic data to ensure we have an adequate volume and range of data for analysis.
    - Incorporate macroeconomic factors that can impact B2B sales patterns into our analysis.
    - Develop a machine learning (ML) model with carefully calibrated weights to minimize biases and optimize accuracy and recall.
    - Showcase the model to the client, explaining how it generates value for their business.
  + By following this strategy, we aimed to create an MVP that addresses the client's needs and demonstrates the potential benefits of utilizing data, AI, and ML techniques in their operations.
* **Execution**
  + We assembled a team of two consultants, a software developer, and a project manager. In one month, we developed an AI/ML model using Python and the Flask Framework.
  + We trained multiple neural networks with diverse ML algorithms, selecting the top two models based on accuracy, recall, and precision.
  + We generated synthetic data considering company-specific and geographic metrics such as order frequency, order value, support tickets, product diversity index, regional investment index, client NPS score, and relative revenue.
  + To enable user interaction, we integrated an intuitive UI with Flask Framework.
  + The model was hosted on Google Cloud to enable global accessibility, scalability and reliability. Additionally, we utilized the Plotly API for interactive visualizations.
  + From ideation to delivery, the entire process was completed in just four weeks, demonstrating quick and efficient execution.

**Business Benefits:**

* **Accelerated MVP Development & Value Creation** 
  + In just four weeks, our team of two consultants successfully ideated, executed, and delivered a data-driven minimum viable product (MVP) to our client, enabling effective risk management.
* **Enhanced Decision-Making**
  + Our Churn rate prediction model provided valuable insights into the factors that contribute to customer churn. This information empowers our clients to make informed decisions on product enhancements, service improvements, and customer engagement strategies.
* **Increased Operational Efficiency**
  + Our model automates the process of identifying at-risk customers, allowing businesses to efficiently allocate resources to retention efforts. This leads to improved operational efficiency and optimized resource utilization.
* **Customer-Centric Approach**
  + It enables businesses to adopt a customer-centric approach by understanding customer needs and expectations. By addressing these needs, businesses can build stronger relationships, foster loyalty, and improve overall customer satisfaction.

By addressing the challenges of customer retention and leveraging data-driven insights, our solution empowered the telecom company to make strategic decisions, optimize operations, and deliver enhanced customer experiences, resulting in sustained business growth and success

**Technology Stack: Python, Flask, ML Algorithms, Google Cloud, Plotly API**

**Project Timeline: 1 Month**

**Industry:** **Telecom** | **Domain: eCommerce**

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**Screenshots:**





