Reducing E-commerce Churn with **AI 360**

Leveraging AI 360 to predict and prevent customer churn for an e-commerce company

Case Study

Overview

Predicting Churn Better: Speed and Accuracy

A thriving e-commerce company specializing in selling handcrafted goods, providing personalized gift boxes, and offering a curated selection of sustainable products has experienced significant growth in recent years, attracting a large and diverse customer base. However, alongside this growth, they also faced a rising concern: a growing customer churn rate. This trend posed a significant threat to the company's long-term profitability and sustainable growth. Recognizing the critical importance of customer retention, they sought to understand the underlying drivers of churn and develop proactive strategies to minimize customer attrition.

💡 Our Solution

Machine Learning for Predictive Churn in E-commerce

Data Collection and Preparation

To address this challenge, we collected comprehensive user data, including user_id, age, city, state, postal_code, rent_or_own, more_than_one_mobile_device, job_industry, payment_history, and past usage data history. This data was then rigorously cleaned to handle missing values, outliers, and inconsistencies. Subsequently, we employed feature engineering techniques such as correlation plots and Chi-Square tests to identify key relationships between variables and reduce data complexity. We also created new features like Customer Lifetime Value (CLTV), Usage Frequency, Recent Usage, and Payment Delinquency to enrich the dataset and provide deeper insights.

Churn Prediction Model

To predict customer churn accurately, we selected a Random Forest Classifier as our machine learning model. This choice was driven by the model's ability to handle high-dimensional data effectively and capture non-linear relationships between features. We further enhanced the model's performance by utilizing GridSearchCV to optimize hyperparameters such as n_estimators, min_samples_leaf, and l1/l2 regularization. To ensure robust model evaluation, we employed cross-validation with accuracy as the scoring metric.

Market Segmentation

Based on the insights gained from the churn prediction model, we segmented customers into distinct groups based on their churn risk, usage patterns, and demographics. This segmentation enabled us to develop highly targeted retention strategies for each customer segment. For high-risk customers, we implemented proactive outreach initiatives, including personalized offers, exclusive discounts, and improved customer support. For low-risk customers, we focused on targeted marketing campaigns and loyalty programs to encourage continued engagement and strengthen their relationship with the company.

Impact

Reduced Churn, Increased CLTV, and Enhanced Profitability

The implementation of these targeted retention strategies yielded significant positive results. We successfully reduced the overall churn rate by **39%**, leading to a substantial increase in Customer Lifetime Value (CLTV). Furthermore, personalized interventions improved customer satisfaction and loyalty, fostering stronger customer relationships. These improvements directly translated to increased revenue and profitability for the client solidifying its position in the market.

39% Churn Rate Reduction: A significant decrease in customer attrition, demonstrating the effectiveness of the implemented retention strategies.

Increased Customer Lifetime Value (CLTV): A substantial improvement in the long-term value generated by each customer, indicating higher customer loyalty and repeat purchases.

Enhanced Customer Satisfaction & Loyalty: Improved customer satisfaction scores and increased customer loyalty, fostering stronger and more enduring customer relationships.

Increased Revenue & Profitability: Direct translation of reduced churn and increased CLTV into higher revenue and improved overall business profitability.

Business Outcome

Data-driven insights for sustainable growth

The solution transcended churn reduction, becoming a cornerstone of the company's digital transformation. By leveraging AI 360, the company enhanced productivity, streamlined data management, and empowered data-driven decision-making across departments, solidifying its position as a data-centric organization.
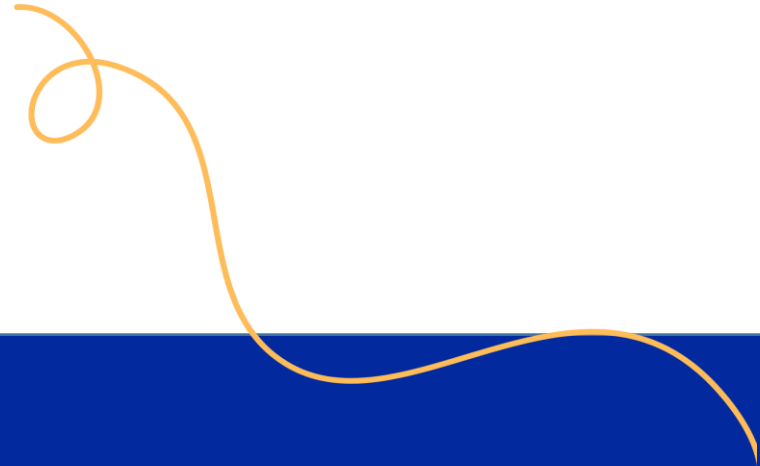
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