Predicting Churn for Credit Card Customers using Data Mining Methods

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GitHub Repository: https://github.com/rcancel3/ADS505

Purpose:
This project aims to create an optimal classification model for identifying customers at risk of churning, given some qualitative predictors (age, income, gender) and factual information about a customer's relationship with the business (time on book credit limit, etc.).

Background:
A manager at the bank is disturbed by more and more customers leaving their credit card services. They have contacted the data science team to see if there's viability to predict which customers are going to churn – the insights generated by this process would allow the company to proactively reach out through customer service channels and utilize available retention efforts.

Current Situation:
The bank's customer service department currently does not have a standardized, system-wide method for identifying which customers are likely to churn. As a result, there is very little correspondence between marketing and customer service. Representatives often determine which customers to reach out to use their intuition without a rigid, data-driven approach.

Conclusion:
Given an increasing attrition rate of 16.07% and no scalable way to address the problem, we developed a model that correctly classifies 63% of churned customers and 96% of existing customers. We also determined that banking relationship-related customer attributes explain most of the attrition (84%), rather than demographic attributes. Our recommendations are broken into three distinct time intervals. The bank should immediately contact the top 60% of customers identified as likely to churn. In the interim, the bank should monitor the impact of these contacts and dive deeper into their product offerings. Our long-term recommendation is to segment the churning customers to identify profiles to tailor banking features, options, rewards, and offerings to these segments to decrease churn and increase retention.