

# PREDICTING FINANCIAL ACCOUNT CHURN

## IN RETAIL BANKING

Elder Research partnered with a diversified bank to predict account closures, prioritize marketing interventions, and understand precursors to customer churn. We built a model that was 20% more effective at predicting customer churn than existing techniques.

### INDUSTRY

- » Retail Banking and Financial Services

### BUSINESS NEED

- » Improve performance of an existing model used to predict account closures
- » Determine key factors that influence customer churn

### SOLUTION

- » Used historical data to model how account transactions predicted churn
- » Applied best practices in model selection and testing to build a more effective churn model to analyze the account portfolio monthly

### BENEFIT

- » Increased retention of profitable accounts by avoiding churn triggers and prioritizing retention incentives

## THE CHALLENGE

Elder Research was engaged by the client to improve the predictive performance of an existing account churn model that was based on heuristics. The goal was to reduce account churn rates by at least 10% using only internal data.

## THE SOLUTION

Elder Research guided the client through the steps of building an improved churn model:

- Aggregated and transformed historical account transactions for trends, amounts, counts, and variability, from hundreds of attributes to be considered for modeling, together with other static account attributes.
- Used a disciplined cross-validation scheme to reduce the model inputs to about 30 features that were the most helpful for building a predictive model.
- Tested multiple transformations and alternative algorithms to optimize the predictive model's performance, such as regression, decision trees, nearest neighbor, neural networks, support vector machines, and random forests.
- Tested the final model's performance on a holdout sample.
- Deployed the final model to analyze the account portfolio on monthly basis.

This process resulted in a predictive and stable model with 25 selected features based strictly on the client's internal data.

## RESULTS

The model was 20% more accurate at predicting account churn compared to the existing business rules based on heuristics and provided the client with a better understanding of triggers for customer churn.

## ABOUT ELDER RESEARCH

Elder Research is the U.S.'s leading consulting company in the science, practice, and technology of advanced analytics. We have helped government agencies and Fortune Global 500® companies solve real-world problems across diverse industries by amplifying the productivity of their analysts.

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# ELDER RESEARCH

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