



Auto Insurance Customer Retention Model

Challenge

A top 5 auto insurance carrier's primary focus is to improve customer retention. They've been using a model on their current book of business that predicts the likelihood that policyholder will renew. They wanted to evaluate if Powerlytics proprietary database of over 1,000 consumer financial data variables and data transformations could improve their existing model. This would enable them to deploy customer retention strategies on the customers most likely to leave.

They also believed it would be beneficial to understand, at the time of quote, whether a prospect will be a shopper or a long-tenured customer. If they can predict the retention rate of a prospect, they can deploy more effective Underwriting and Pricing strategies at new business. Unfortunately, since their current predictive model contains internal policy variables that are not available at time of quote, they cannot currently predict a prospect's retention rate.

Since Powerlytics' variables are not policy dependent and are available at time of quote, the insurance carrier decided to build an effective retention model using only Powerlytics' variables that can apply to both prospects and policyholders.

Solution

Powerlytics provided the Top 5 insurance carrier with nearly 1,000 consumer financial data variables and their data transformations. The variables were tested and over 30 Powerlytics variables were highly correlated with customer retention. The following is a small sample of the 30 predictive variables:

- 3-year % change in Average number of returns filed as single
- 1-year % change in Average Disposable Income
- Wealth Income / Adjusted Gross Income
- Business Income / Adjusted Gross Income

Two new predictive models were built, one consisting of only Powerlytics data and one consisting of a combination of Powerlytics and internal data. Each model was evaluated to determine which one delivered the greatest value and improvement compared to their current model.



POWERLYTICS

POWERFUL DATA, SMARTER DECISIONS

Results

To assess the value of each model, the Top 5 carrier used a ROC Curve AUC metric. The AUC metric, a number from 0 to 1, measures how well a predictive model is able to rank order actual outcomes. The higher the AUC metric, the more effective the predictive model.

The AUC metrics of the three models are as follows:

Model	Data Source	AUC
Model #1	Internal Customer Data	0.75
Model #2	Powerlytics Data	0.79
Model #3	Combined Data	0.80

By using Powerlytics' data, not only does the Top 5 carrier now have an improved model for their current book of business, but they can also do the following:

- ✓ Understand new customers likely to leave (e.g. short-term customer) and adjust the premium at onboarding
- ✓ Better target customers that are likely to stay
- ✓ Retain customers that are likely to leave through targeted retention strategies

When applied to over 20 million auto policies there is a significant financial impact to using the Powerlytics data in their predictive model.