

You've landed a great job with Green Giant Consulting (GGC), managing an analytical team that is just building up its data science skill set. GGC is proposing a data science project with TelCo, the nation's second-largest provider of wireless communication services, to help address their problem of customer churn. Your team of analysts has produced the following proposal, and you are reviewing it prior to presenting the proposed plan to TelCo. Do you find any flaws with the plan? Do you have any suggestions for how to improve it?

Churn Reduction via Targeted Incentives — A GGC Proposal

We propose that TelCo test its ability to control its customer churn via an analysis of churn prediction. The key idea is that TelCo can use data on customer behavior to predict when customers will leave, and then can target these customers with special incentives to remain with TelCo. We propose the following modeling problem, which can be carried out using data already in TelCo's possession.

We will model the probability that a customer will (or will not) leave within 90 days of contract expiration, with the understanding that there is a separate problem of retaining customers who are continuing their service month-to-month, long after contract expiration. We believe that predicting churn in this 90-day window is an appropriate starting point, and the lessons learned may apply to other churn-prediction cases as well. The model will be built on a database of historical cases of customers who have left the company. Churn probability will be predicted based on data 45 days prior to contract expiration, in order for TelCo to have sufficient lead time to affect customer behavior with an incentive offer. We will model churn probability by building an ensemble of trees (random forest) model, which is known to have high accuracy for a wide variety of estimation problems.

We estimate that we will be able to identify 70% of the customers who will leave within the 90-day time window. We will verify this by running the model on the database to verify that indeed the model can reach this level of accuracy. Through interactions with TelCo stakeholders, we understand that it is very important that the V.P. of Customer Retention sign off on any new customer retention procedures, and she has indicated that she will base her decision on her own assessment that the procedure used for identifying customers makes sense and on the opinions about the procedure from selected firm experts in customer retention. Therefore, we will give the V.P. and the experts access to the model, so that they can verify that it will operate effectively and appropriately. We propose that every week, the model be run to estimate the probabilities of churn of the customers whose contracts expire in 45 days (give or take a week). The customers will be ranked based on these probabilities, and the top N will be selected to receive the current incentive, with N based on the cost of the incentive and the weekly retention budget.