Precision Consulting

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About the Company

- Online Marketing company
- Specializes in optimizing ROI for online marketing campaigns
- Manages newsletter and mailing lists
- Additional areas of expertise include SEO, mobile advertising and affiliate marketing

Goals

- Minimize length of online survey used for client acquisition, to increase the response rate
- Identify characteristics of leads that are related with increased revenue
- Find geographic location of high-revenue leads, to optimize client targeting

Approach

- Develop a statistical model relating lead characteristics with expected conversion rate and revenue
- Minimize the size of the model to aid in shortening the number of variables that must be collected from leads
- Estimate the models separately for various clusters

Online Marketing Company Retains Precision Consulting to Develop a Statistical Model to Optimize Campaign Targeting.

The company specializes in Online Marketing. Their main objective is to optimize the marketing campaigns' ROI, which involve maximizing the conversion rate and revenue generated by their advertisers.

To optimize ROI, the company must be able to clearly identify which of the leads have the highest associated expected revenue, to concentrate their marketing efforts on those leads. This also allows saving money by stopping showing ads to low-revenue leads.

One of the ways in which the company aims to identify the value of leads is by having them complete an online survey form. Precision Consulting was approached to examine data collected through this form, which comprised approximately 1 million leads. The form included information about their age, address, income and several other variables. The objectives of the project were:

- Develop a statistical model that would help relate the leads' characteristics with their expected value
- Identify which specific characteristics have the strongest impact on expected lead value
- Suggest possible items to remove from the online survey form in order to:
  - reduce its length
  - increase the response rate
  - retain predictive power on expected lead value

Solution

Precision Consulting worked with the company to understand its goals and analysis objectives. We developed a statistical model that would take the leads' characteristics as inputs, and would produce the expected lead value as an output. The inputs and output would be related through a formula that could be implemented in third-party applications, to help the company identify high-value leads on their end.

One of the challenges for this project was the relatively large size of the database provided by the client. Precision's expertise in Big

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Results

- Formula to compute each lead's expected value based on their reported characteristics
- Over 70% of the items in the survey form were found to be unnecessary to predict revenue
- Identified zip codes with high expected revenue, to focus marketing efforts

Data handling allowed us to process the information in a streamlined way, through custom scripts written in the R programming language.

Another challenge present in this project was that there were some clusters of interest with a relatively low sample size. For instance, the company was interested in assessing expected revenue by geographical location down to the zip code level, but some of the zip codes had very few leads in the database and could thus produce biased results that would not be generalizable. Precision Consulting used Mixed Effects modeling to address this issue, shrinking estimates based on low sample sizes toward the population mean, and thus avoiding artificial variability due to insufficient data for some groups.

Benefits

Results from the model allowed creating a predictive formula that could be implemented by the company in order to estimate lead value after the online form is completed. This would help the company make better-informed decisions regarding what to do with that lead, such as whether to increase marketing expenditure in that lead, what kind of ads to display, etc.

Additionally, Precision Consulting was able to identify a large number of items from the online survey that did not impact the expected value of the lead. Precision recommended deleting these items from the survey form. This would help reduce the time it takes to fill the survey, increasing the response rate without sacrificing the predictive power of the model.

Finally, Precision Consulting identified several geographical locations that had above average expected revenue, even after taking into account possible low sample sizes for some of them. This helped the company shift marketing expenditure toward those areas, thus increasing their campaign ROI.