Assignment Acquisition Analytics

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- we wanted to predict the probability of a response from each prospect and target the ones most likely to respond to the next telemarketing campaign.
- This Problems solved in three models
- 1. logistic regression
- 2. Decision trees
- 3. Random forest
- Then after picked the best model with better results

Problem Statement

- To solve these problems, we should resolve to build another model without including the variable 'duration'. This will help you understand the relationship of the other variables with the response.
- Also, set the business objective to achieving 80% of total responders at the minimum possible cost. The total number of responders is the total number of prospects who responded, from the available data of about 45,000 prospects.

- Based on this information, calculate the X in the top X%, i.e., how many prospects should be called to meet the business objective. Further, create a presentation for the CMO highlighting the results and the methodology employed.

Tasks

Checkpoints/Procedure to solve the problem as follows:

- Perform data preparation
- Build a logistic regression model without using the variable 'duration`
- Create a data frame with the variables prospect ID, actual response, predicted response, predicted probability of response, duration of the call in seconds and cost of the call
- Find the number of top X% prospects you should target to meet the business objective
- Create a lift chart
- Determine the cost of acquisition
- Create a small presentation for the CMO highlighting your findings and the methodology used

- Using logistic regression model we got 89% accuracy prediction
- We found that contact_telphone, month's may, june, aug, nov and march, cons price features are high weighted prediction features
- Sensitivity is 0.193
- Specificity is 0.98
- False positive rate is 0.01
- Positive predictive value is 0.69
- And roc curve cutoff at 0.1 with 89% accuracy
- With above results we conclude that in the month's mar, apr, may, jun and nov with telphone campain more convert chances occurred.

Observations

- Thank You