Acquisition analytics
(Portuguese Bank Marketing)

Abstract

The analysis is aimed at achieving a better model to predict the probability of response from each prospect and then target the ones most likely to respond to our upcoming telemarketing campaign.

Business Objective:

Achieve 80% of the total responders at the minimum possible cost.

Challenges with our previous model to be addressed:

• The prospect data does not contain '*duration*' as the call has not been made yet.

• The cost of a phone call should be calculated based on the duration.

Methodology

To workout the model, below is the set of steps we followed:

- Finish the data preparation.

- Remove the `duration` variable from the dataset.

- Derive linear regression model using the k-fold cross validation method.

- Using the model predict the training and test data.

- Use the outcomes to find the top x% prospects we need to target to achieve 80% response.
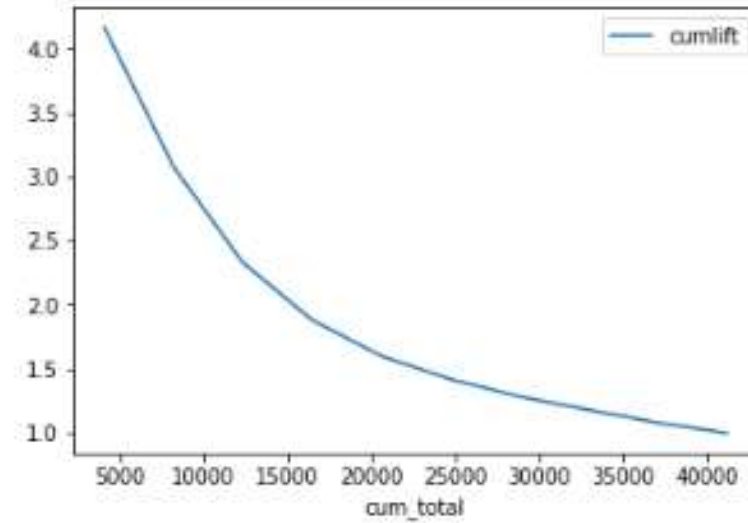
Results

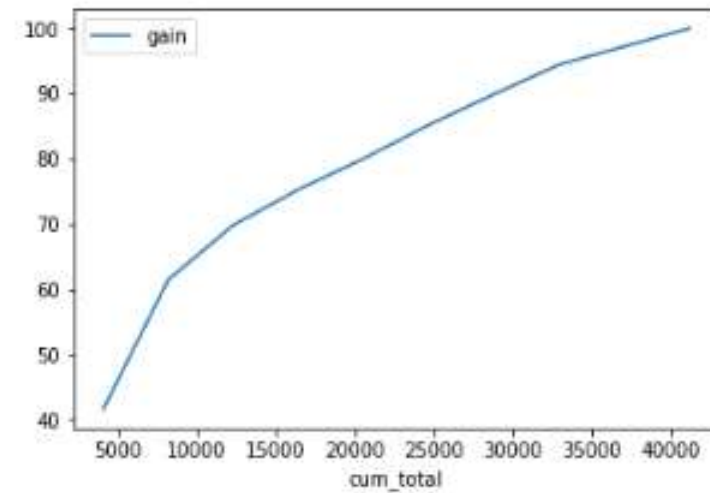In conclusion, we will need to focus top 50% of the prospects to achieve 80% response rate.

	decile	total	actual	cumresp	gain	cumlift
9	1	4119	1930	1930	41.594828	4.159483
8	2	4119	923	2853	61.487069	3.074353
7	3	4119	388	3241	69.849138	2.328305
6	4	4118	253	3494	75.301724	1.882543
5	5	4119	220	3714	80.043103	1.600862
4	6	4119	239	3953	85.193966	1.419899
3	7	4118	218	4171	89.892241	1.284175
2	8	4119	211	4382	94.439655	1.180496
1	9	4119	129	4511	97.219828	1.080220
0	10	4119	129	4640	100.000000	1.000000

Results

- Lift Chart

- Gain Chart

Thank You