

1. Which are the top three variables in your model which contribute most towards the probability of a lead getting converted?

Solution:

Based on the coefficient values from below screenshot, the following are the top three variables that contribute most towards the probability of a lead getting converted :

- a) Total Time Spent on Website
- b) Lead Add Form (from Lead Origin)
- c) Had a Phone Conversation ( from Last Notable Activity)

|  | coef    |
|--|---------|
| const  | -2.3134 |
| Do Not Email                                 | -1.1067 |
| TotalVisits                                  | 1.5038  |
| Total Time Spent on Website                  | 4.5275  |
| LeadOrigin_Landing Page Submission           | -0.3253 |
| LeadOrigin_Lead Add Form                     | 3.7313  |
| LeadSource_Olark Chat                        | 1.5706  |
| LeadSource_Welingak Website                  | 2.1406  |
| LastActivity_Email Bounced                   | -0.9859 |
| LastActivity_Not Sure                        | -1.5943 |
| LastActivity_Olark Chat Conversation         | -1.3427 |
| LastActivity_SMS Sent                        | 1.3544  |
| CurrentOccupation_No Information             | -1.3041 |
| CurrentOccupation_Working Professional       | 2.6421  |
| LastNotableActivity_Had a Phone Conversation | 3.2904  |
| LastNotableActivity_Unreachable              | 1.7567  |

2. What are the top 3 categorical/dummy variables in the model which should be focused the most on in order to increase the probability of lead conversion?

Solution:

Again, based on the coefficient values from the screen shot in the question above, the following are the top three categorical/dummy variables that should be focused the most in order to increase the probability of lead conversion :

- a) Lead Add Form (from Lead Origin)
- b) Had a Phone Conversation ( from Last Notable Activity)
- c) Working Professional ( from What is your current occupation)

3. X Education has a period of 2 months every year during which they hire some interns. The sales team, in particular, has around 10 interns allotted to them. So during this phase, they wish to make the lead conversion more aggressive. So they want almost all of the potential leads (i.e. the customers who have been predicted as 1 by the model) to be converted and hence, want to make phone calls to as much of such people as possible. Suggest a good strategy they should employ at this stage.

Solution:

In the below image, the final prediction is calculated based on a optimal cut off value of 0.37.

In order to make the sales aggressive, the company may contact all the leads which have a conversion probability (value = 1) under a cut off 0.3 (column 0.3 highlighted in yellow).

|    | Converted | Converted_Prob | LeadId | predicted | 0.0 | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 | final_predicted | lead_score |
|----|-----------|----------------|--------|-----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----------------|------------|
| 0  | 0         | 0.600894       | 2240   | 1         | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0   | 0   | 0   | 1               | 60         |
| 1  | 0         | 0.794876       | 113    | 1         | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0   | 0   | 1               | 79         |
| 2  | 1         | 0.802664       | 4132   | 1         | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0   | 1               | 80         |
| 3  | 0         | 0.089476       | 5573   | 0         | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0               | 9          |
| 4  | 0         | 0.029809       | 1109   | 0         | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0               | 3          |
| 5  | 0         | 0.041753       | 2282   | 0         | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0               | 4          |
| 6  | 1         | 0.767093       | 2976   | 1         | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0   | 0   | 1               | 77         |
| 7  | 0         | 0.418665       | 8431   | 0         | 1   | 1   | 1   | 1   | 1   | 0   | 0   | 0   | 0   | 0   | 1               | 42         |
| 8  | 1         | 0.805010       | 2770   | 1         | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0   | 1               | 81         |
| 9  | 1         | 0.995568       | 5790   | 1         | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1               | 100        |
| 10 | 1         | 0.950498       | 2943   | 1         | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1               | 95         |
| 11 | 0         | 0.197985       | 1196   | 0         | 1   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0               | 20         |
| 12 | 1         | 0.648304       | 8874   | 1         | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0   | 0   | 0   | 1               | 65         |
| 13 | 0         | 0.106911       | 1491   | 0         | 1   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0               | 11         |
| 14 | 0         | 0.110507       | 7676   | 0         | 1   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0               | 11         |
| 15 | 1         | 0.490611       | 8750   | 0         | 1   | 1   | 1   | 1   | 1   | 0   | 0   | 0   | 0   | 0   | 1               | 49         |
| 16 | 1         | 0.805010       | 5049   | 1         | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0   | 1               | 81         |
| 17 | 0         | 0.648304       | 5691   | 1         | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0   | 0   | 0   | 1               | 65         |
| 18 | 1         | 0.380602       | 5773   | 0         | 1   | 1   | 1   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 1               | 38         |
| 19 | 0         | 0.032619       | 3906   | 0         | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0               | 3          |

4. Similarly, at times, the company reaches its target for a quarter before the deadline. During this time, the company wants the sales team to focus on some new work as well. So during this time, the company's aim is to not make phone calls unless it's extremely

necessary, i.e. they want to minimize the rate of useless phone calls. Suggest a strategy they should employ at this stage.

**Solution:**

In order to minimize the rate of useless phone calls, the company may contact all the leads which have a conversion probability (value = 1 highlighted in yellow color) under column 0.7. However, the flipside here would be that, we may miss out on those leads that are actually converted but then the model wrongly predicted them as not converted. (See red highlights in the image below). This should not be a major cause for concern as the target has already be achieved.

[illegible]