Telecom Churn Case Study

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Final Conclusion with no PCA

It is evident that the logistic model devoid of PCA exhibits commensurate sensitivity and accuracy to the models that incorporate PCA. Hence, since logistic regression with PCA explains the key predictor variables and the importance of each variable, we can choose for a simpler model. The model also assists us in determining the factors that need to be taken into consideration when deciding which customers to churn. As a result, the model is better suited to explain things to businesses.

Business recommendation

Top predictors

Below are few top variables selected in the logistic regression model.

Variables	Coefficients
loc_ic_mou_8	-3.3287
og_others_7	-2.4711
ic_others_8	-1.5131
isd_og_mou_8	-1.3811
decrease_vbc_action	-1.3293
monthly_3g_8	-1.0943
std_ic_t2f_mou_8	-0.9503
monthly_2g_8	-0.9279
loc_ic_t2f_mou_8	-0.7102
roam_og_mou_8	0.7135

We observed that the majority of the top variables had negative coefficients. In other words, the churn probability and the variables have an inverse relationship.
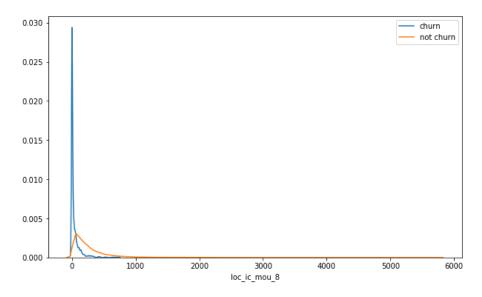
E.g.:-

A higher probability of customer attrition exists if the local incoming minutes of usage (loc_ic_mou_8) is lower in August than in any other month.
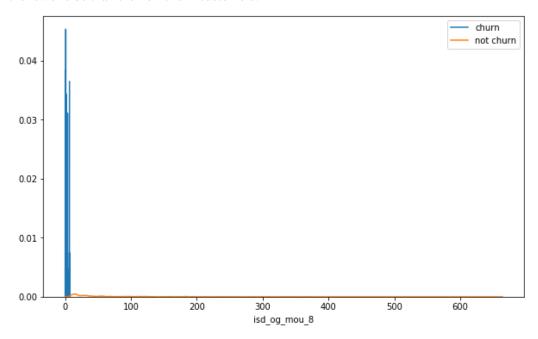
Recommendations:

1. Focus on consumers who, during the action phase (primarily in August), have fewer minutes of usage for incoming local calls and outgoing ISD calls.
2. Focus on clients who have lower outgoing and incoming costs in July and August, respectively.
3. In addition, customers with higher value-based costs during the action phase have a higher churn rate than other customers. Therefore, these clients might be a good target for an offer.
4. Customers are likely to be churned if their August monthly 3G recharge is higher.
5. Customers who use fewer STD incoming minutes for operators T to fixed lines of T in August are more likely to experience attrition.
6. It is likely that customers who reduce their monthly 2g usage in August will churn.
7. Customers are more likely to churn if their incoming minutes of usage for operators T to fixed lines of T for August are declining.
8. The variables in roam_og_mou_8 have positive coefficients (0.7135). This implies that customers are more likely to churn if their roaming outgoing minutes of usage are rising.
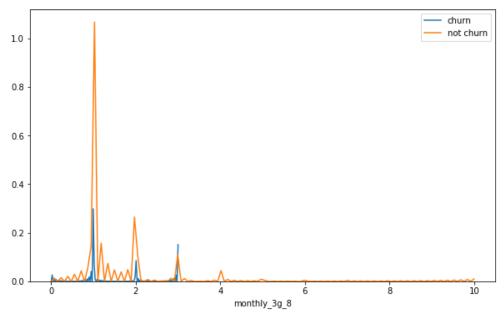
Plots of important predictors for churn and non churn customers

We can see that for the churn customers the minutes of usage for the month of August is mostly populated on the lower side than the non churn customers.

We can see that the ISD outgoing minutes of usage for the month of August for churn customers is densed approximately to zero. On the onther hand for the non churn customers it is little more than the churn customers.

The number of mothly 3g data for August for the churn customers are very much populated aroud 1, whereas of non churn customers it spreaded accross various numbers.

Similarly we can plot each variables, which have higher coefficients, churn distribution.