Telecom Churn- Domain Oriented Case Study

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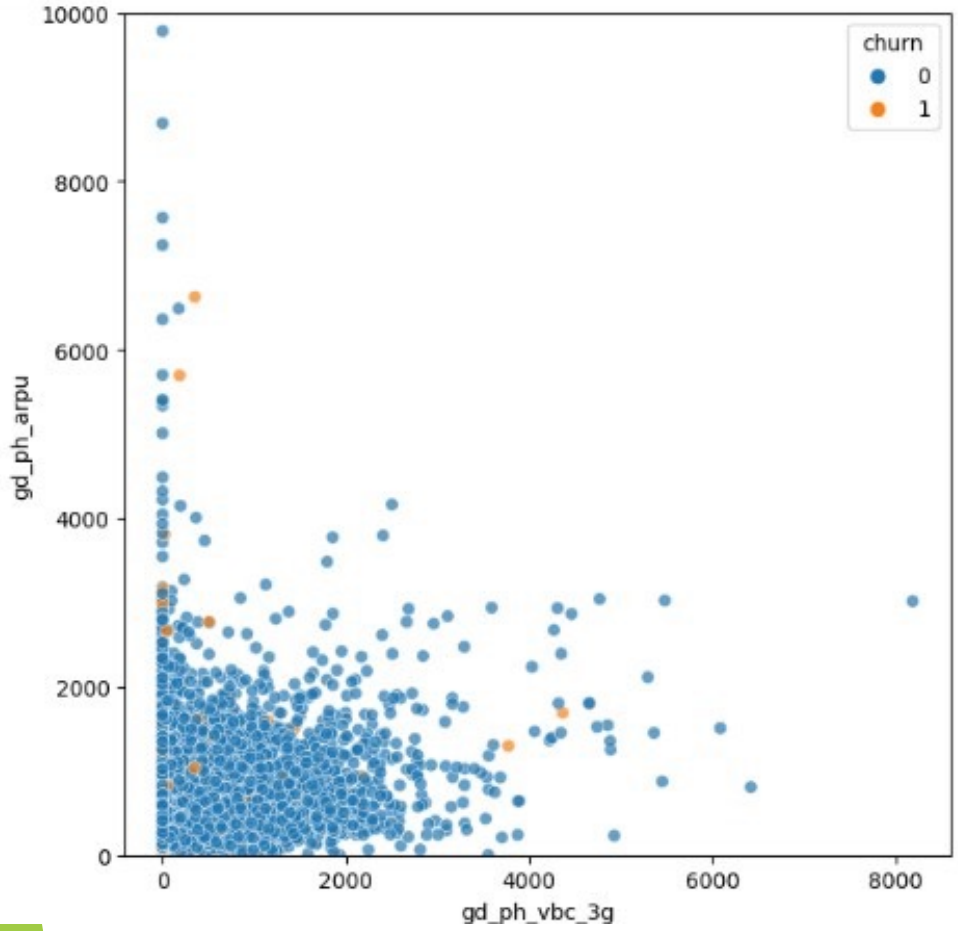
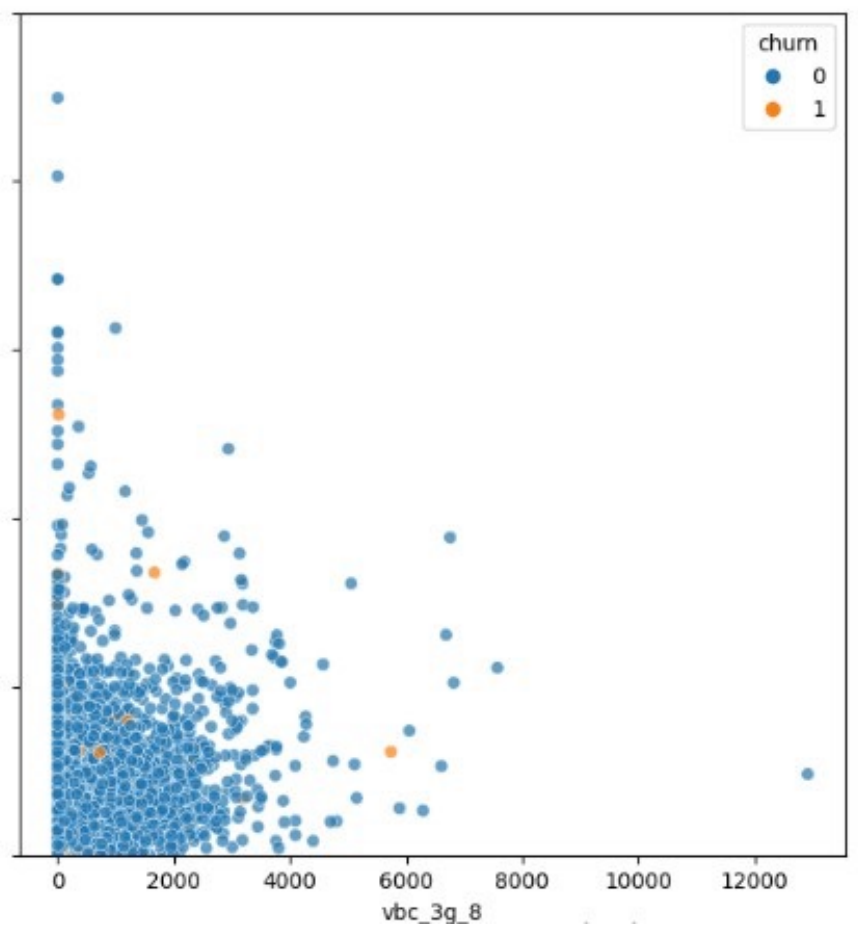
Problem Statement

- To analyze customer level data of a leading telecom firm and to build predictive models to identify customers at a high risk of churn

- To identify the main indicators of churn.

Checking how total Minutes of Usage(MoU) affects revenue

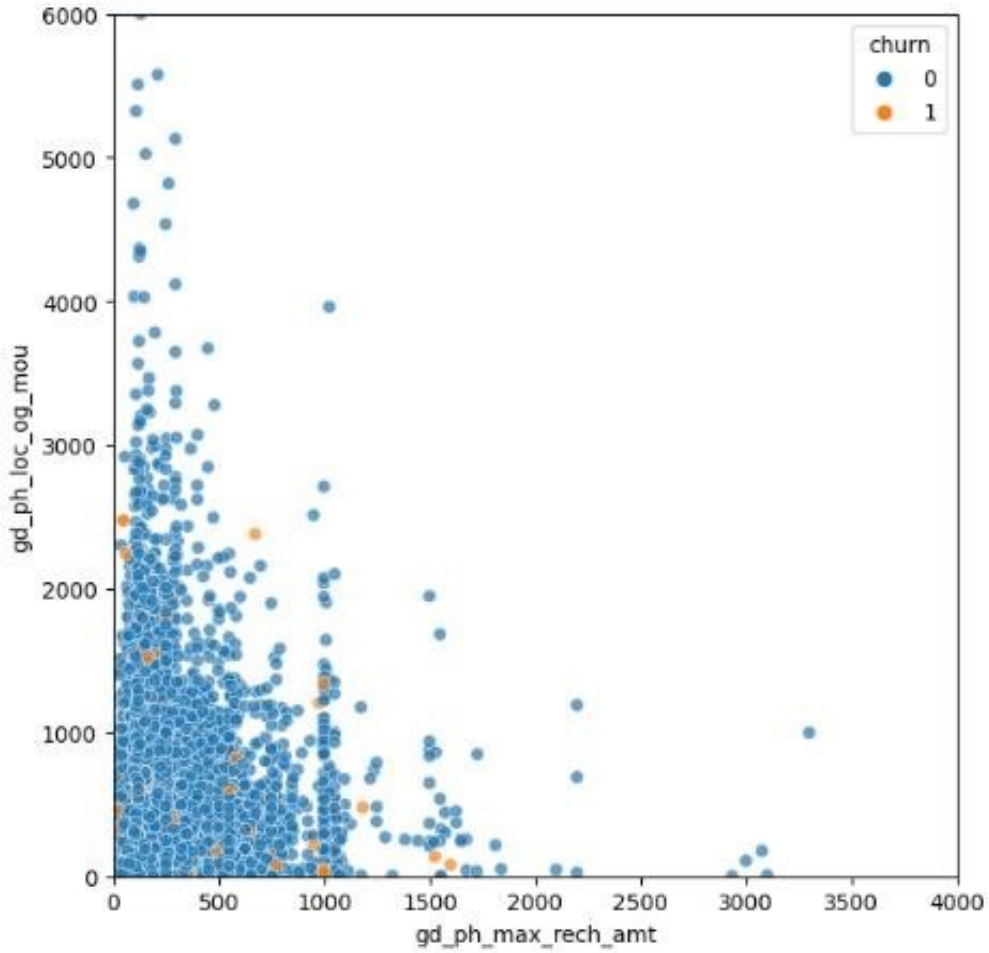


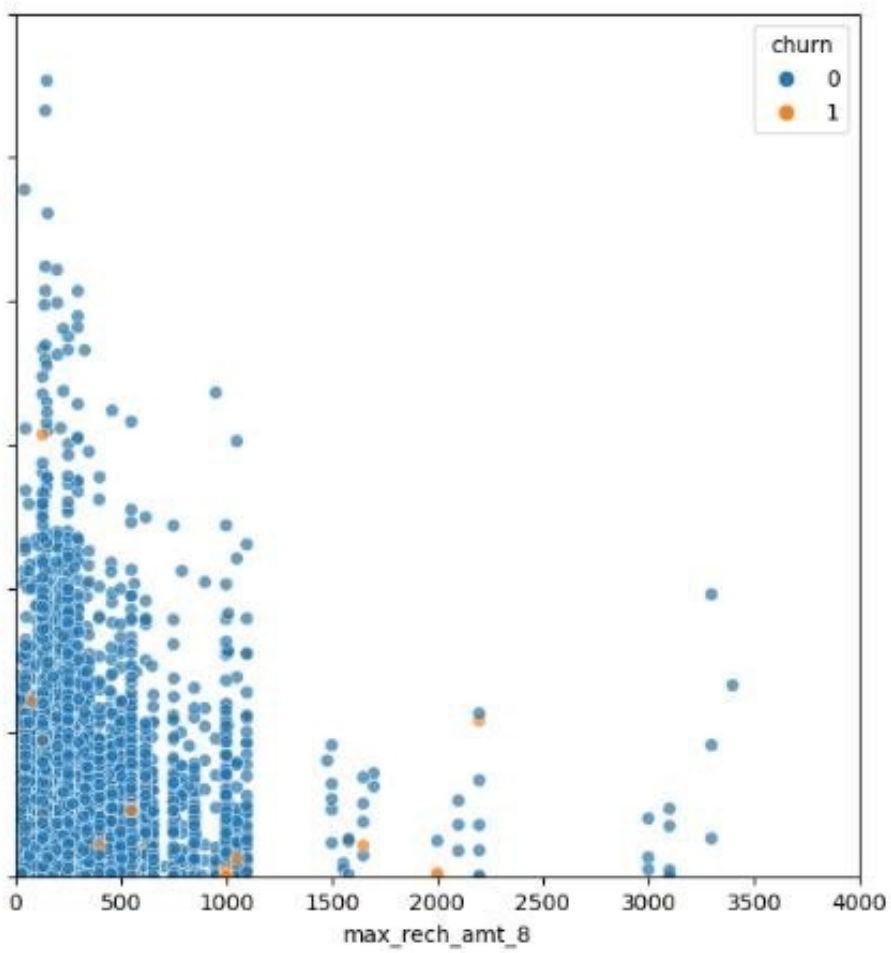


Observation

- We can see that the users who were using very less amount of VBC data and yet were generating high revenue churned
- Yet again we see that the revenue is higher towards the lesser consumption side

Relation between recharge amount and local outgoing calls



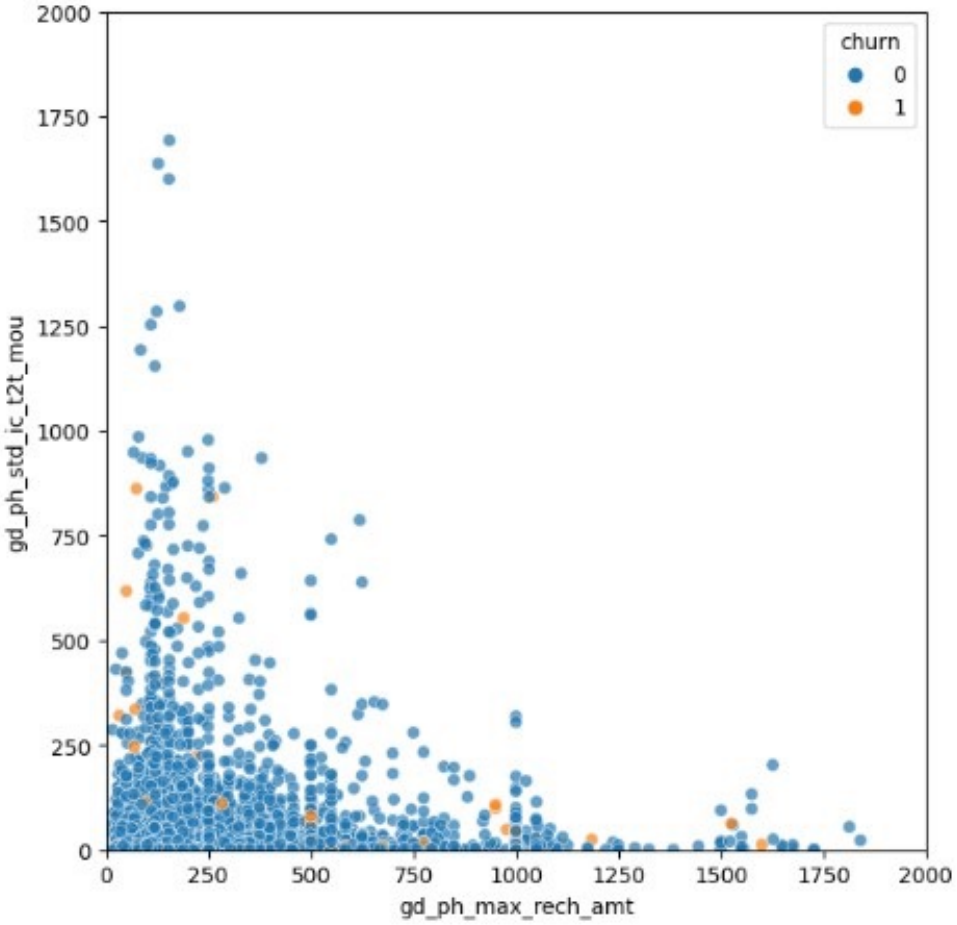


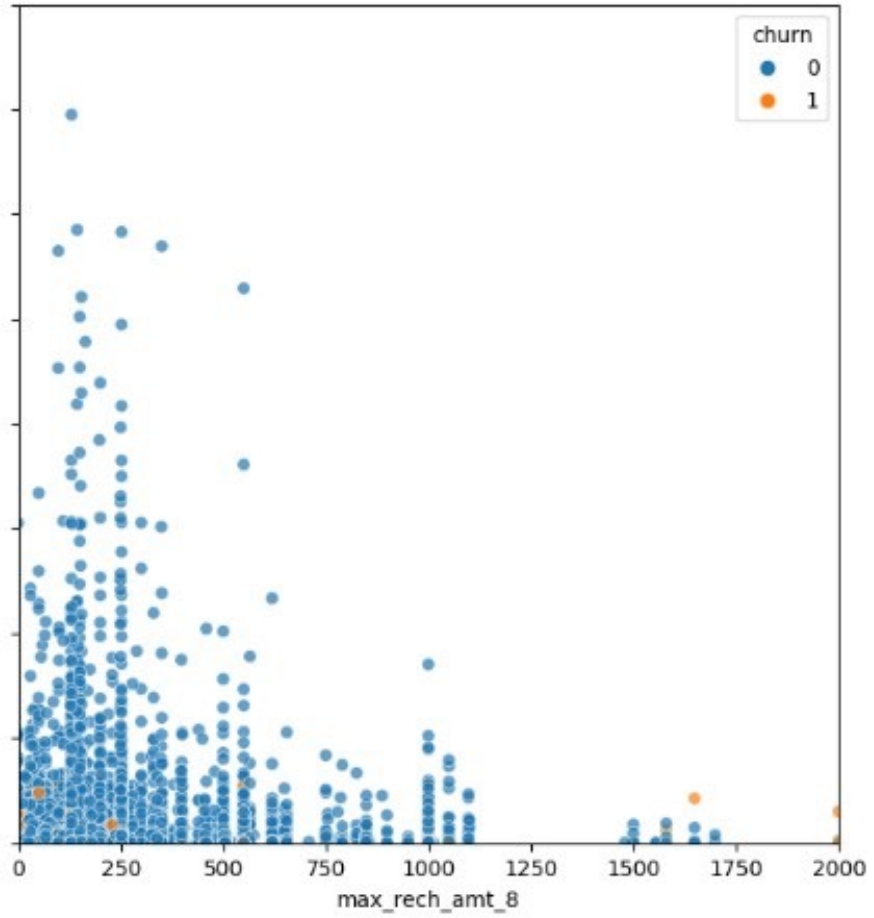
Observations

•Users who were recharging with high amounts were using the service for local uses less as compared to user who did lesser amounts of recharge

•People whose max recharge amount as well as local out going were very less even in the good phase churned more

Incoming from the same service provider vs the recharge amount

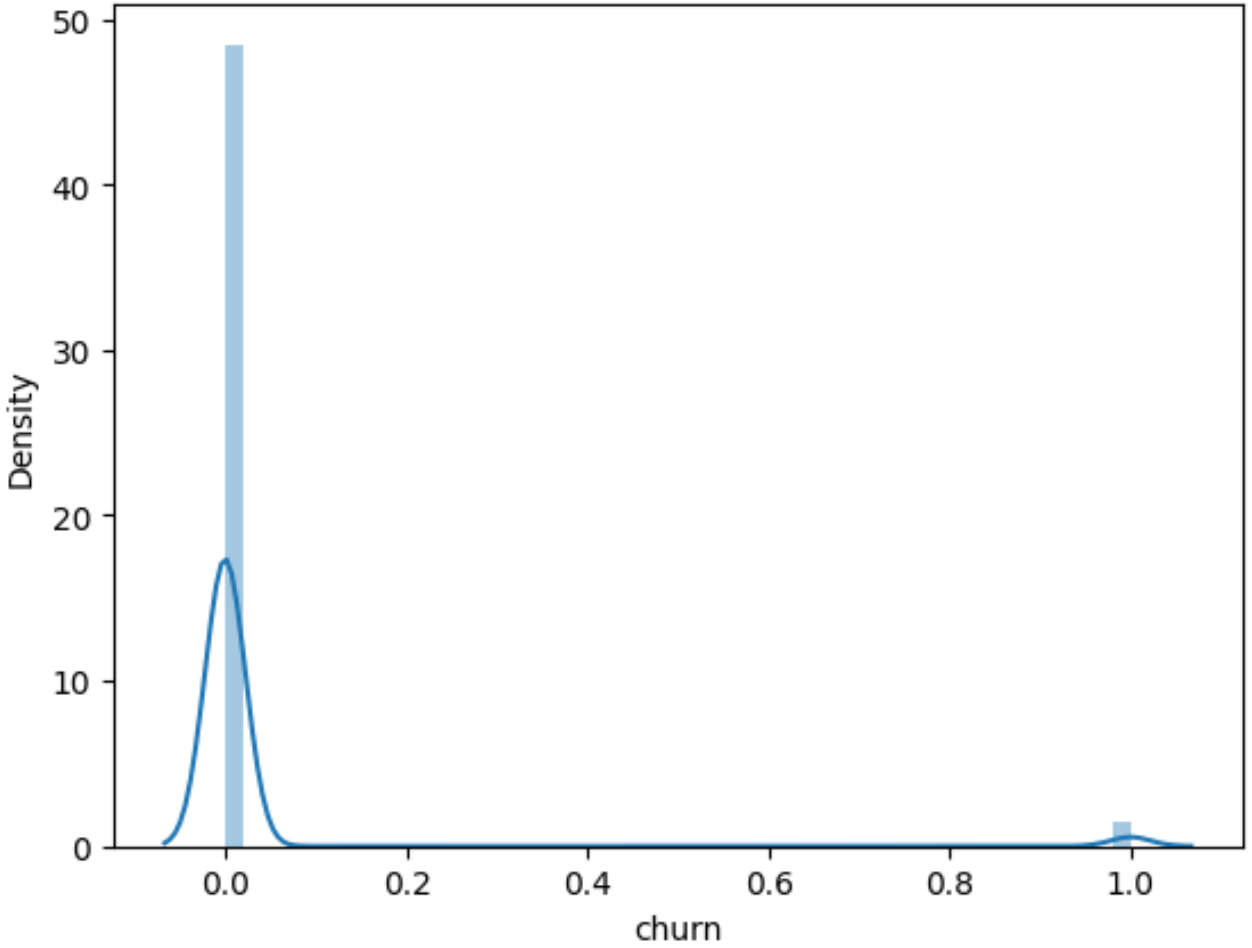




Observation

•Users who have max recharge amount on the higher end and still have low incoming call MoU during the good phase, churned out more

Distribution of target variable



Observation

- Though the variable is not skewed it is highly imbalanced, the number of non-churners in the dataset is around 94%
- We will handle this imbalance using SMOTE algorithm

Achieved parameters after analysis

- Using Logistic regression we are getting an accuracy of 78.5% on train data and 78.8% on test data
- We are getting an accuracy of 90% on test data, with decision tree
- We are getting an accuracy of 95% on test data, with Random forest

Conclusion

- Given our business problem, to retain their customers, we need higher recall. As giving an offer to an user not going to churn will cost less as compared to loosing a customer and bring new customer, we need to have high rate of correctly identifying the true positives, hence recall.
- When we compare the models trained we can see the tuned random forest and Ada boost are performing the best, which is highest accuracy along with highest recall i.e. 95% and 97% respectively. So, we will go with random forest instead of Ada boost as that is a simpler model.