Telecom Churn : Case Study
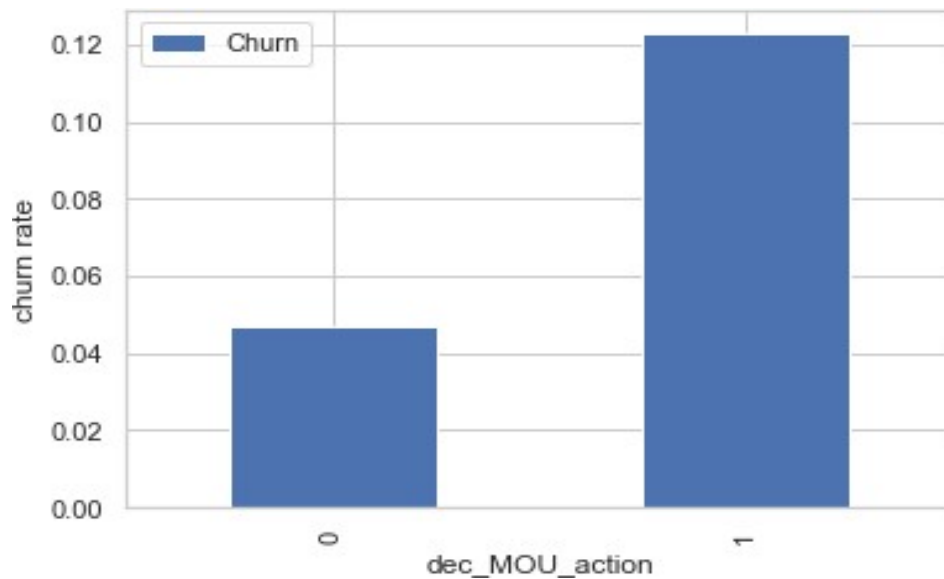
Churn prediction

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Problem Statement

Analyze customer-level data of a leading telecom firm, build predictive models to identify customers at high risk of churn, and identify the main indicators of churn.

Churn rate based on whether the customer decreased her/his MOU in the action month

Customers whose minutes of usage (MoU) decreased in the action phase have a higher churn rate than those whose minutes of usage increased in the good phase.
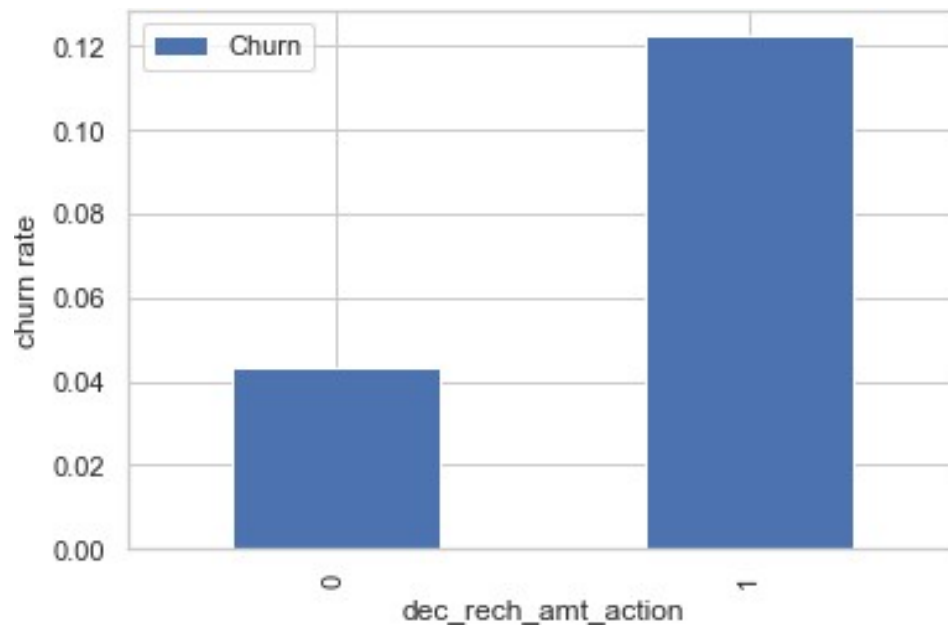
Churn rate on the basis of whether the customer decreased the amount of recharge in the action month

Here also we see the same behavior. The churn rate is more for the customers, whose amount of recharge in the action phase is lesser than the amount in the good phase.
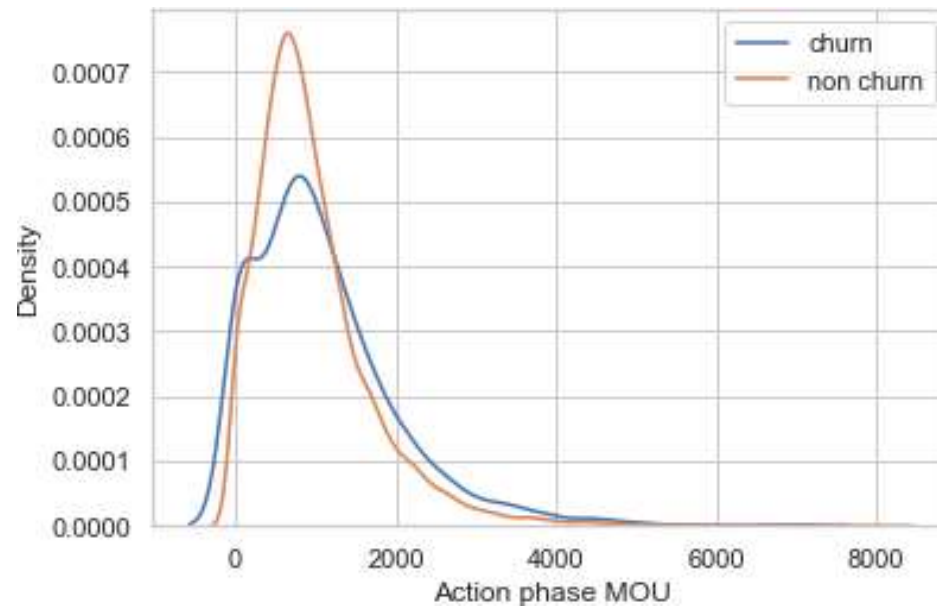
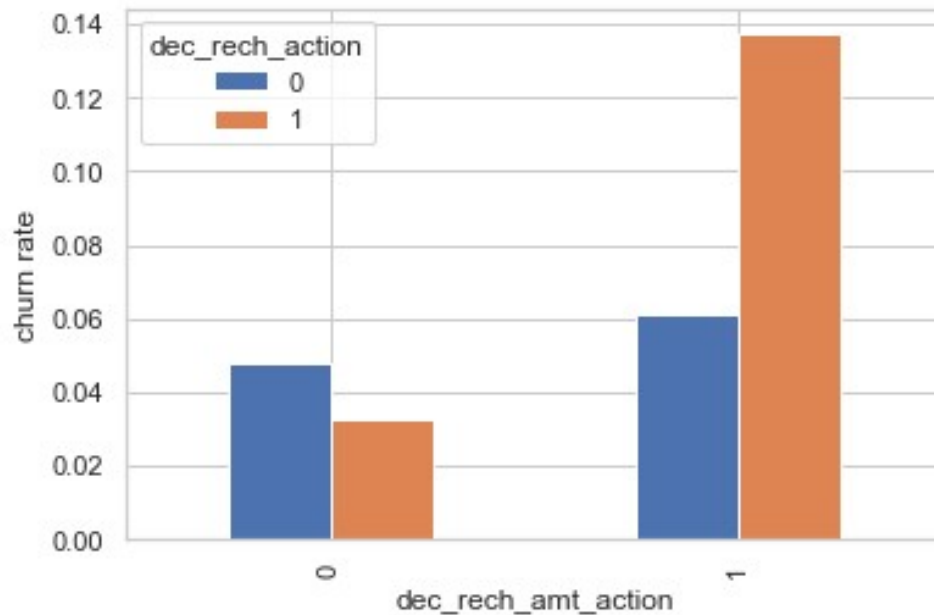**...rn) in the action phase**

...ners that churn tend to have
...s of usage (MOU) that range from
...00. Higher the MOU, the lesser the
...robability
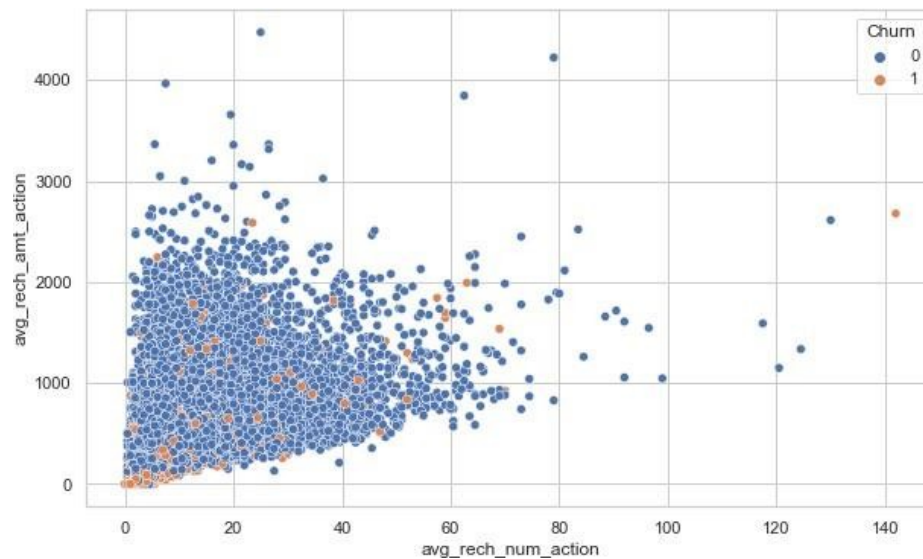
Analyzing recharge amount and number of recharge in action month

We can see from the pattern that the recharge number and the recharge amount are almost proportional. The higher the number of recharges, the Higher the amount of the recharge.

Analyzing churn rate WRT the decreasing recharge amount and number of recharge during the action phase

We can see from the above plot, that the churn rate is higher for the customers, whose recharge amount as well as the number of recharges have decreased in the action phase when compared to the good phase.

COMPLETE MODEL STATS

	Model	Recall	Test Accuracy	Roc_auc_score
1	Decision Tree with PCA	0.89	0.83	0.77
0	Logistic Regression with PCA	0.87	0.83	0.88
3	Logistic without PCA	0.82	0.79	0.76
2	Random Forest with PCA	0.70	0.87	0.88

Conclusion and STRATEGY ahead

1. From EDA, we observed that there is a considerable drop in recharge, call usage and data usage in the 8th month which is the `Action Phase`. Below are the important features:
loc_og_t2m_mou_7, total_og_mou_6, loc_og_t2t_mou_7, roam_ic_mou_7, onnet_mou_7, arpu_7,loc_og_t2c_mou_7, onnet_mou_8, roam_og_mou_8, arpu_6

2. Average revenue per user in the `7th month` plays a vital role in deciding churn. A sudden drop in it might indicate that the customer might be thinking about churning and appropriate actions should be taken.

3. Local Minutes of usage (outgoing) are the most affecting features on the customer churn.

4. Roaming Minutes of usage (incoming & outgoing) are also affecting features on the customer churn.

5. Total minutes of usage for outgoing is also an important factor affecting the churn.

Strategies to minimize the churn.

- A sudden drop in Local Minutes of usage might be because of unsatisfactory customer service because of poor network or unsuitable customer schemes/plans. Efforts shall be made to provide a better network and focus on customer satisfaction.

- Based on the usage / last recharge/ net usage, routine feedback calls should be made for customer satisfaction and services that can understand their grievances & expectations. Appropriate action should be taken to avoid them from churning.

- Various attractive offers can be introduced to customers showing a sudden drop in the total amount spent on calls & data recharge in the action phase to lure them.

- Customized plans should be provided to such customers to stop them from churning.

- Promotional offers can be very helpful