Telecom_Churn

Domain Oriented Group_Case_Study

Objective: To predict the churn in the 9th month using the Historical Data of the Last 3 Months

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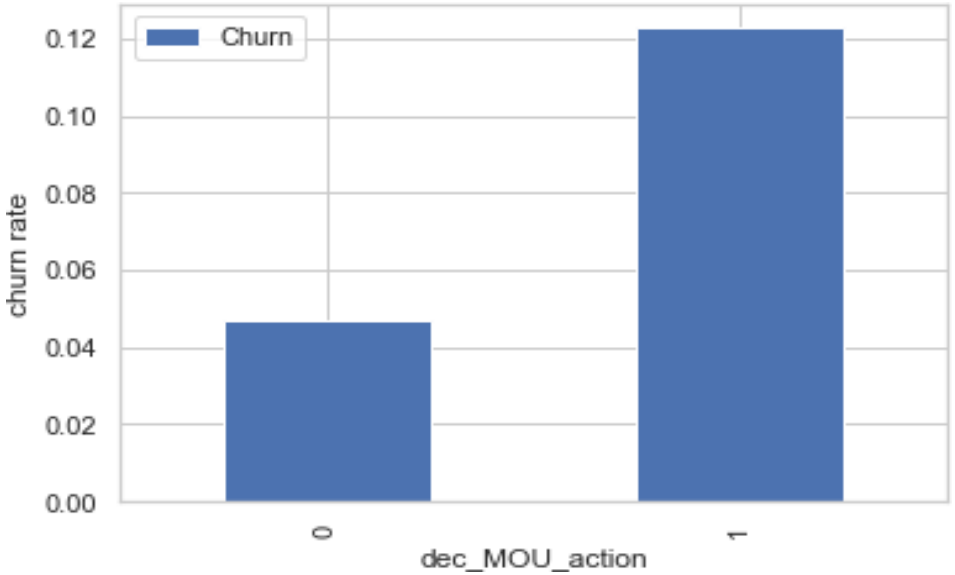
Problem Statement

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

Objective: MOU in the action month



Observation:

Customers whose minutes of usage (MoU) decreased in the action phase have a higher churn rate than those whose usage increased in the good phase.

Churn Rate

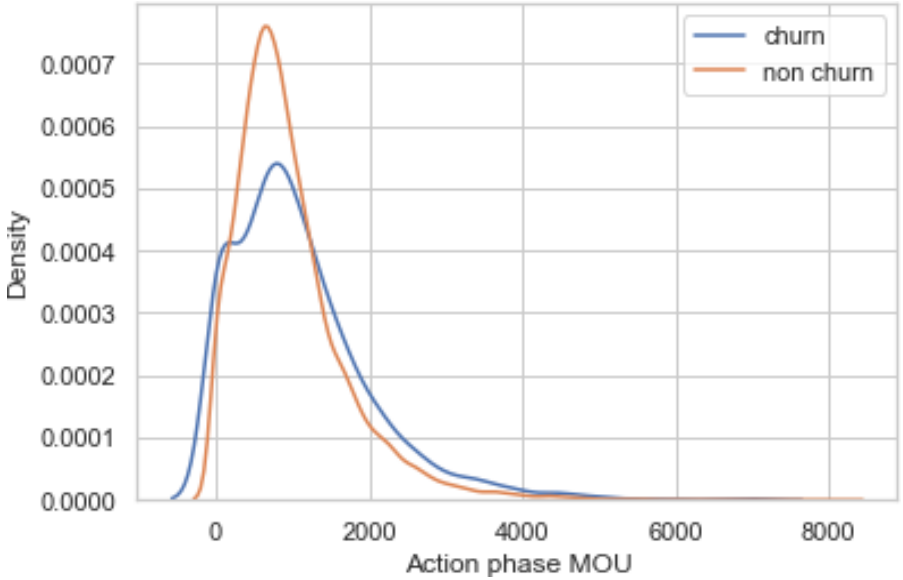
Objective: Recharge the Amount in the action month

Observation:

The churn rate is more for the customers, whose recharge amount in the action phase is less than in the good phase.

Churn Rate

Objective: MOU (churn and not churn) in the action phase

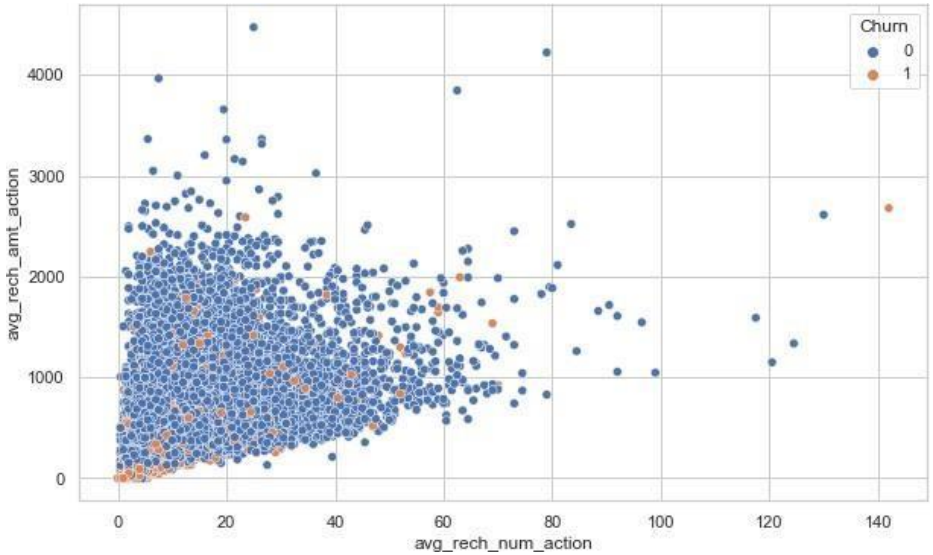


Observation:

Customers that churn tend to have minutes of usage (MOU) that range from 0 to 2500. The higher the MOU, the lesser the churn probability

Churn Rate

Objective: Recharge amount & No. of Recharges in action month



Observation:

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 recharge amount.

Churn Rate

Decrease in recharge amount & No. of recharges during the action phase

Observation:

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

1. From our Exploratory Data Analysis (EDA), we observed a significant decline in recharge, call usage, and data usage during the 8th month, referred to as the Action Phase. The key features identified are:

•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. The average revenue per user (ARPU) in the 7th month is crucial in predicting churn. A sudden drop in ARPU may indicate that a customer is considering churning, and appropriate actions should be taken.

3. Local outgoing minutes of usage are the most influential factors in customer churn. Additionally, roaming minutes of usage (both incoming and outgoing) and total outgoing minutes of usage are significant factors affecting churn.

Strategy

A sudden drop in local minutes of usage may indicate unsatisfactory customer service due to poor network quality or unsuitable plans. Efforts should be made to improve network performance and enhance customer satisfaction.

Based on usage patterns, last recharge, and net usage, routine feedback calls should be conducted to understand customer grievances and expectations. Appropriate actions should be taken to prevent churn.

Introducing attractive offers to customers who show a significant decrease in spending on calls and data during the action phase can help retain them. Customized plans should be provided to these customers to prevent churn. Promotional offers can also be very effective.