# TELECOM CHURN – DOMAIN ORIENTED CASE STUDY

BUSINESS PROBLEM: IN THE TELECOM INDUSTRY, CUSTOMERS CAN CHOOSE FROM MULTIPLE SERVICE PROVIDERS AND ACTIVELY SWITCH FROM ONE OPERATOR TO ANOTHER. IN THIS HIGHLY COMPETITIVE MARKET, THE TELECOMMUNICATIONS INDUSTRY EXPERIENCES AN AVERAGE OF 15-25% ANNUAL CHURN RATE. GIVEN THE FACT THAT IT COSTS 5-10 TIMES MORE TO ACQUIRE A NEW CUSTOMER THAN TO RETAIN AN EXISTING ONE, CUSTOMER RETENTION HAS NOW BECOME EVEN MORE IMPORTANT THAN CUSTOMER ACQUISITION.

PROBLEM STATEMENT: IN THIS PROJECT, WE AIM TO REDUCE CUSTOMER CHURN, TELECOM COMPANIES NEED TO PREDICT WHICH CUSTOMERS ARE AT HIGH RISK OF CHURN.

CHURN RATE BASED ON MOU

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.
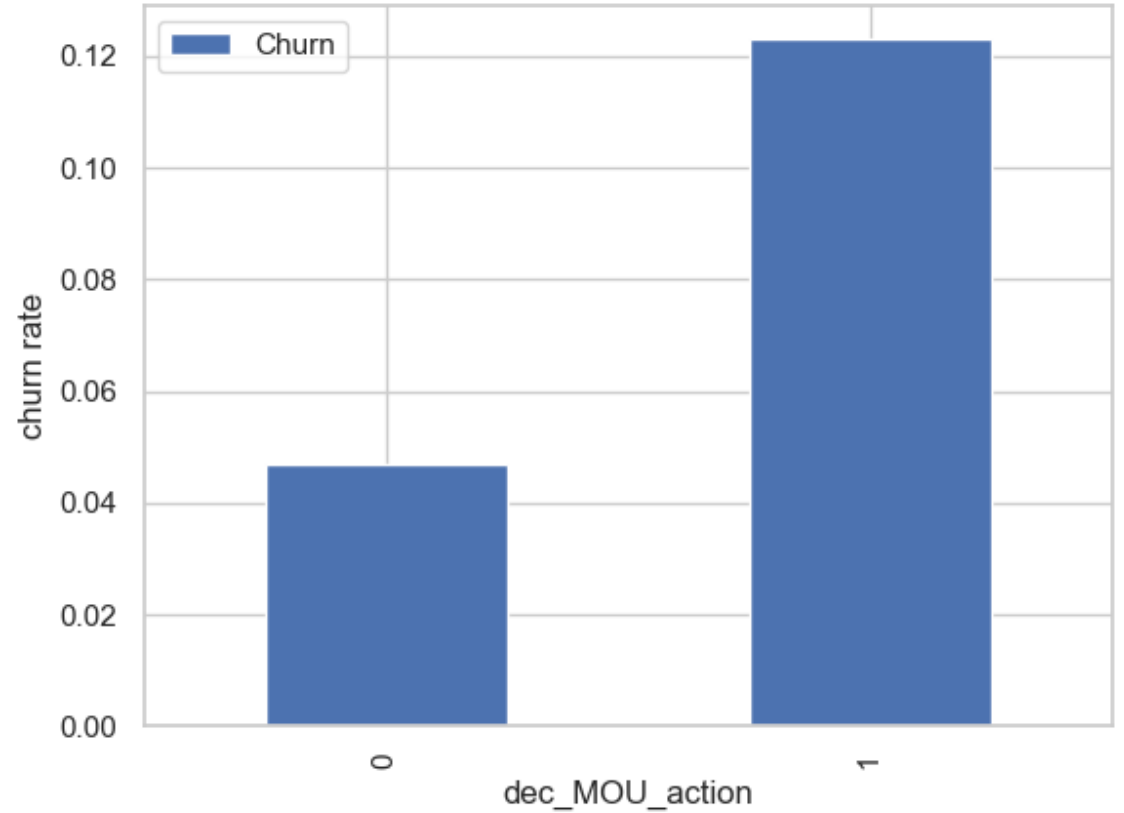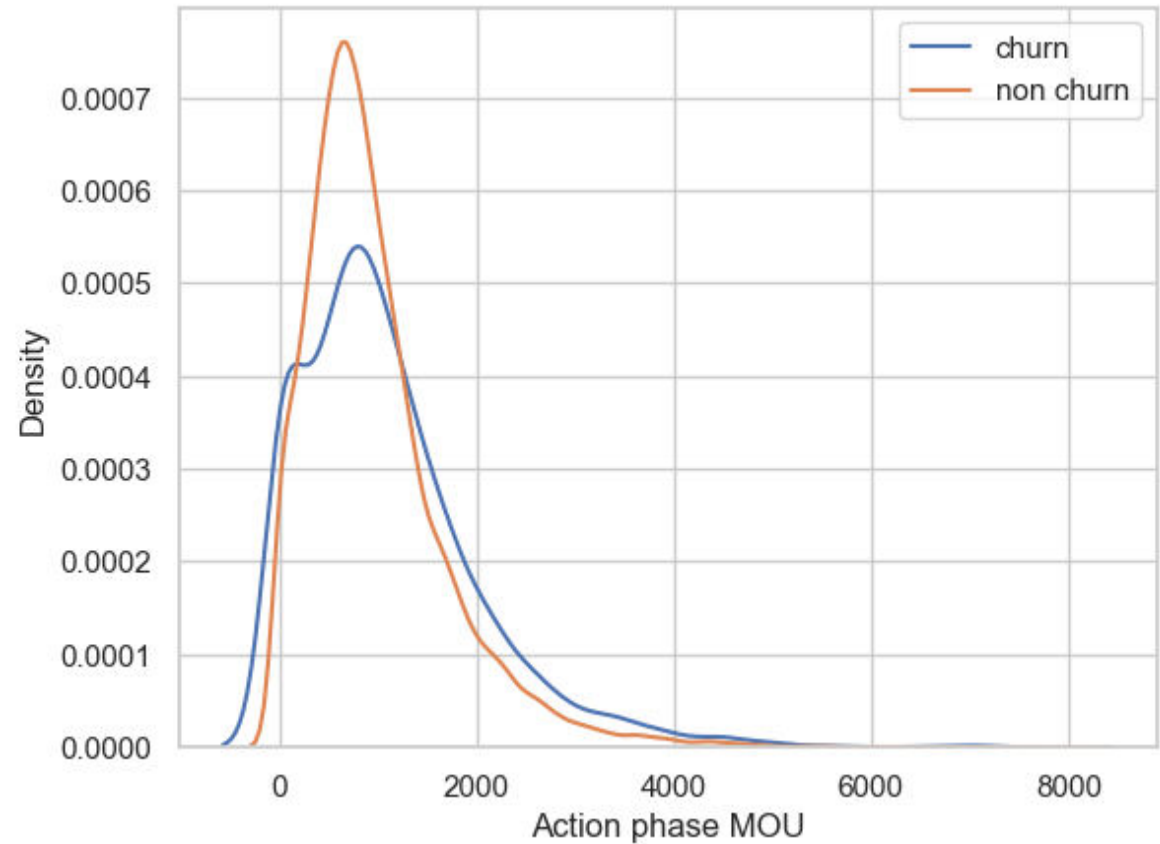
CHURN RATE BASED ON DEC RECHARGED AMOUNT ACTION

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
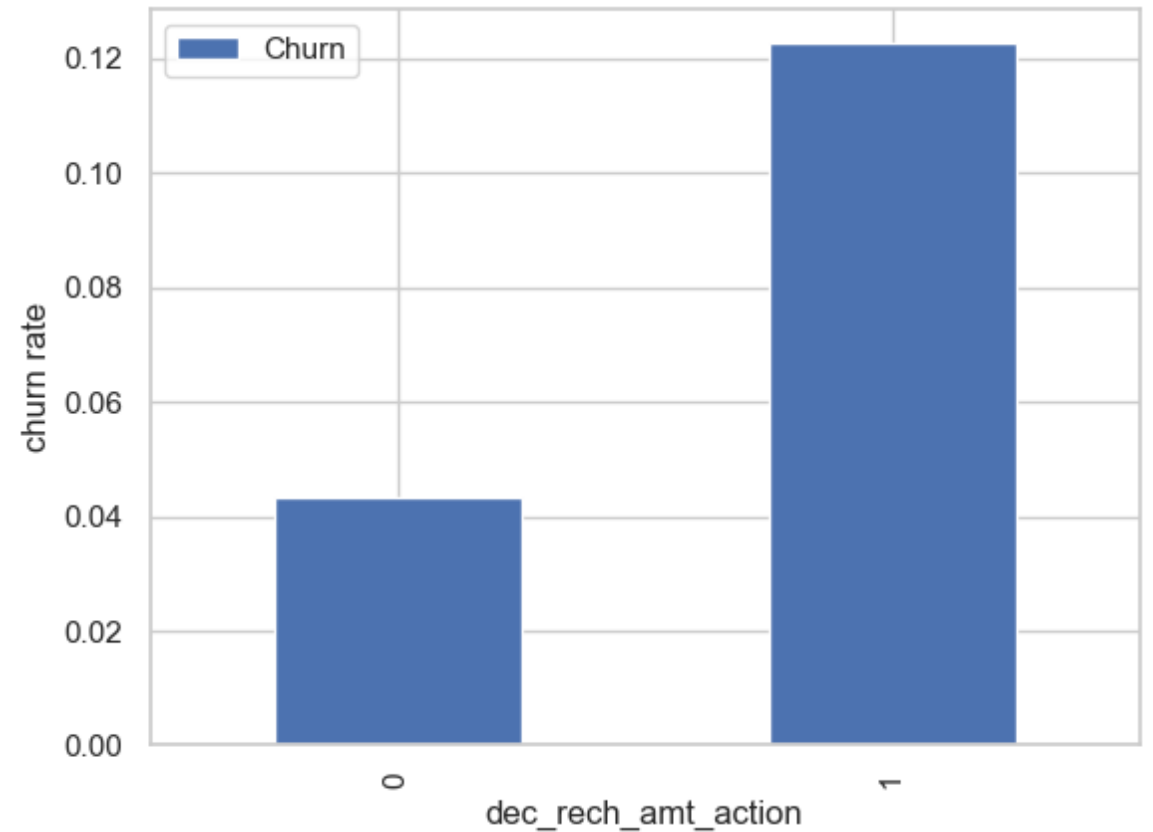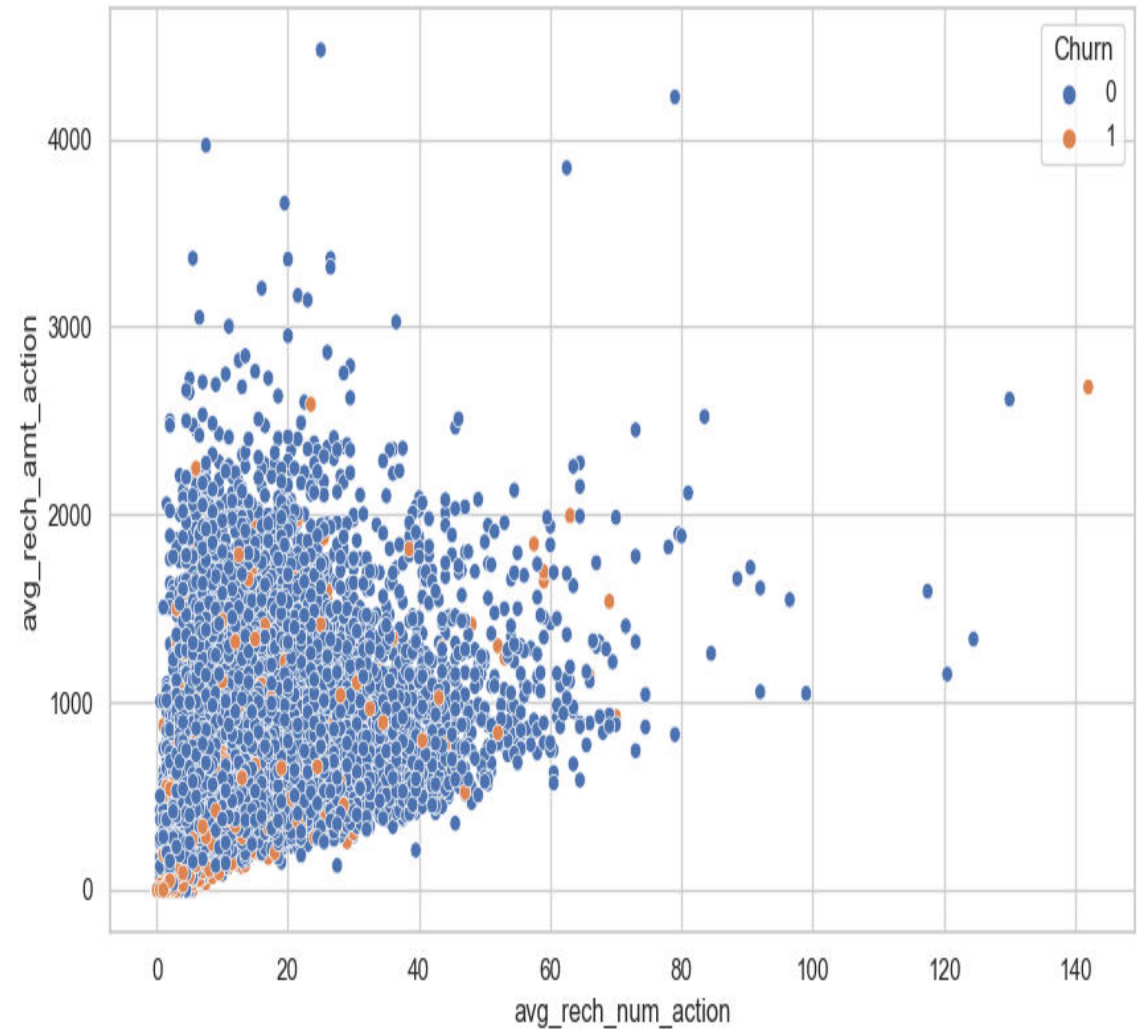
ACTION PHASE MOU

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

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.
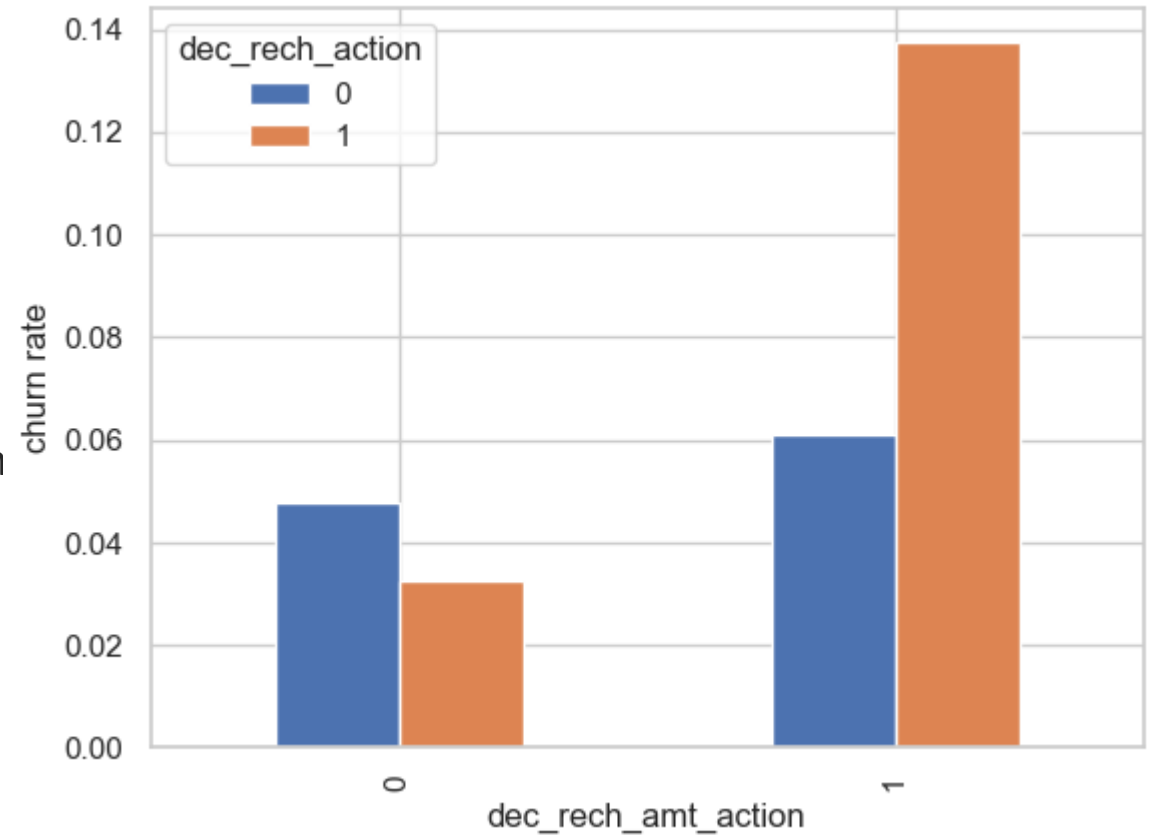
Model	Recall	Test accuracy	Roc_auc_score
Decision Tree with PCA	0.87	0.84	0.77
Random Forest with PCA	0.87	0.84	0.77
Logistic Regression with PCA	0.86	0.82	0.89
Logistic without PCA	0.78	0.86	0.76

CONCLUSION AND STRATEGY AHEAD

1.Based on 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 moving out and appropriate actions should be taken.

3. Local Minutes of usage (outgoing) are the most important reason 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

FOLLOWING STRATEGIES CAN BE INCORPORATED

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 attract them.

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

• Promotional offers can also be very helpful