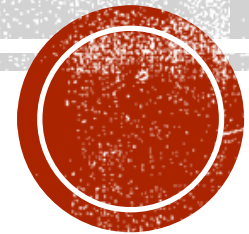# TELECOM CHURN
PREDICTING BEFORE IT HAPPENS

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Specialisation: Business Analytics

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THE MAIN BUSINESS OBJECTIVE

- In the Telecom industry, the worst nightmare for any Operator is the churn in its Customer base. This is because it costs about 5-10% more to acquire a new customer than to retain an existing customer.

- Customer retention is, therefore, of utmost importance to any Service provider.

- To reduce customer churn, telecom companies need to **predict which customers are at high risk of churn.**

  And so ….

  - For many incumbent operators, *retaining high profitable customers is the number one business goal*.
  - This is core objective of conducting this analysis.

THE OVERALL APPROACH

- Apart from what is already specified in the ' Understanding the data' section of the Upgrad portal, the following key aspects were undertaken to ensure better data understanding and the selection of model that best helps to predict a Churn in customer-
  - Various measures to clean the data. Outlier detection, dealing with missing data, reducing the irrelevant columns (variables) in the data, Class imbalance was addressed
  - Understanding the data was done by conducting various univariate and multivariate analysis.
  - Finally, various models were evaluated before arriving at the final one. In this case we selected Random Forest (amongst Logistic regression, Decision Tree and Random Forest)
    - Precision, Accuracy, Recall, Sensitivity vs Specificity were considered.
    - Random Forest was found to have the highest accuracy of 94%in test and 98% in train data. The recall and precision measures were also very high(in a similar range). More details are available in the Python workbook.
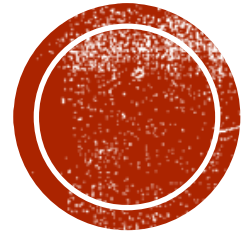
WHAT MUST TELECOM OPERATORS DO TO ADDRESS THE CHURN

We found that the month before the Churn or the Action period was very critical in assessing the possibility of a Churn in customers. Hence, the following are some of the recommendations for Telecom operators to prevent churn

THE NUMBER OF RECHARGES DROPPED CONSIDERABLY DURING THE ACTION PERIOD AS AGAINST THE GOOD PHASE. WHILE OVERALL REVENUES DID NOT DROP.

THIS REQUIRES TELECOM COMPANIES TO KEEP A CLOSE TAB ON THE NUMBER OF RECHARGES DONE BY THE CUSTOMERS. CALLING THESE CUSTOMERS AS SOON AS A DROP IS OBSERVED, CAN HELP IDENTIFY REASONS FOR THE DROP AND ALSO ADDRESS THOSE, BEFORE A CUSTOMER MOVES OUT/ CHURNS
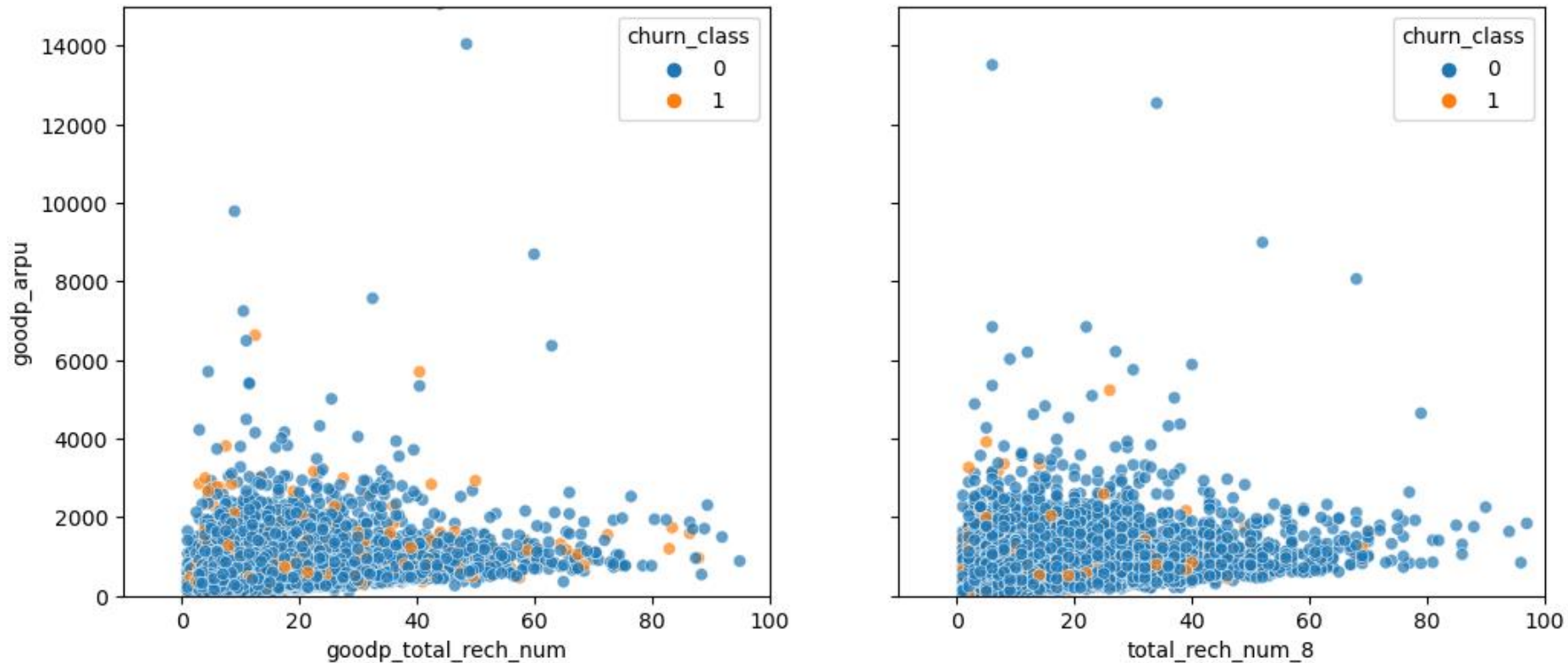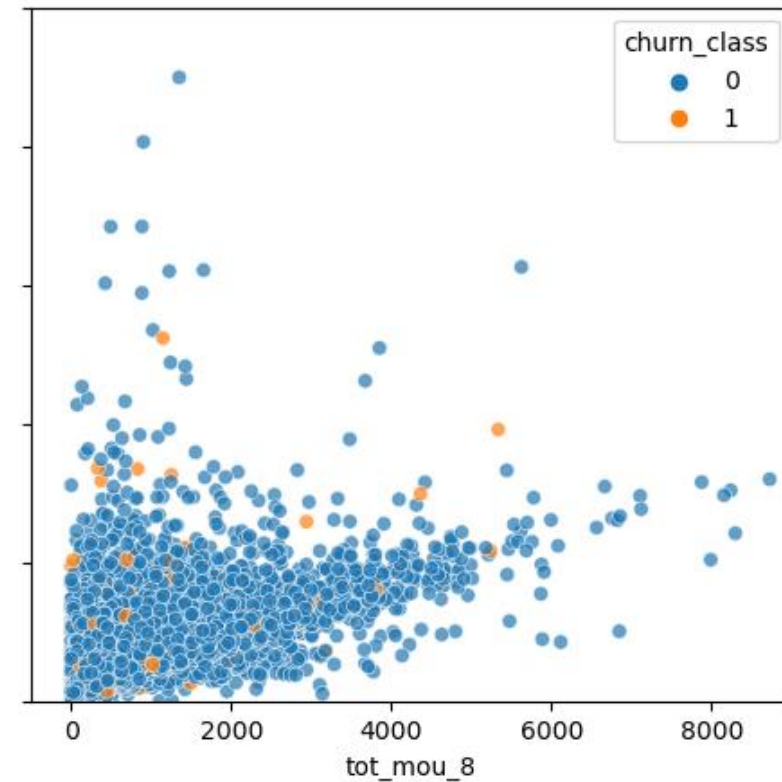

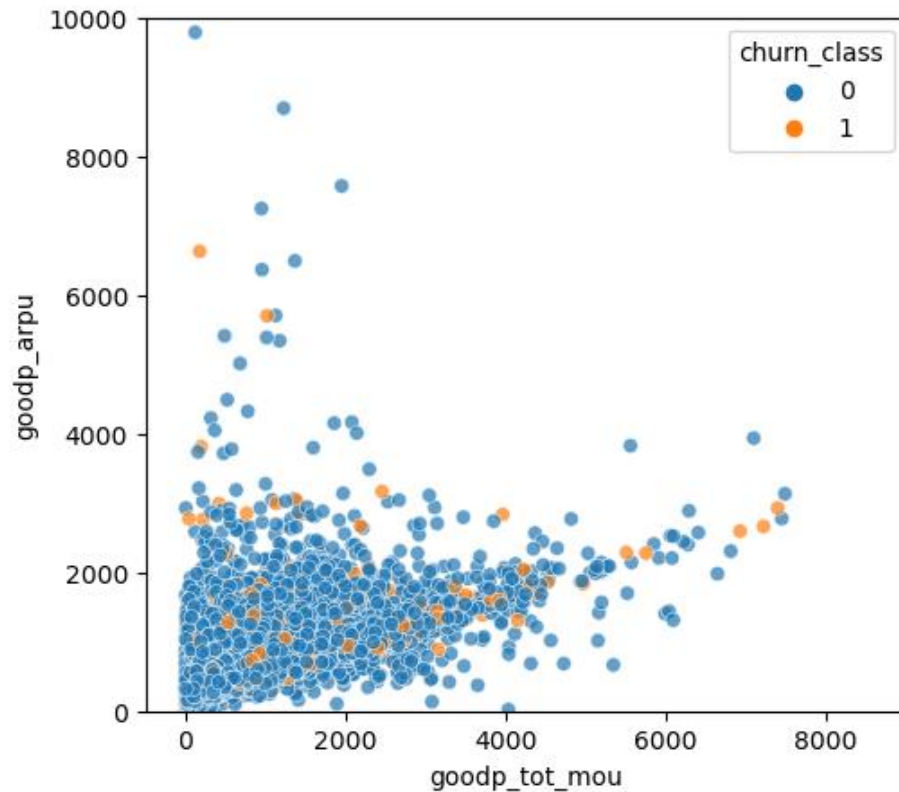The overall revenue per user and the number of recharges

A DROP IN MINUTES OF USAGE FOR VOICE CALLS..

AGAIN, WHILE REVENUES DO NOT WITNESS A CLEAR DROP, THE ABSOLUTE TIME SPENT ON THE VOICE CALLS DROPS CONSIDERABLY IN THE ACTION PHASE.
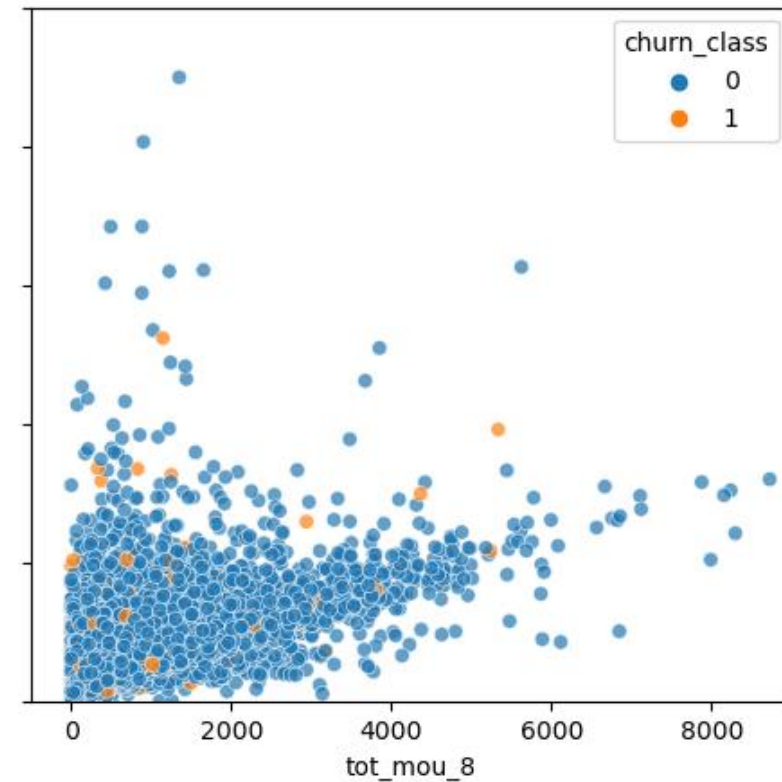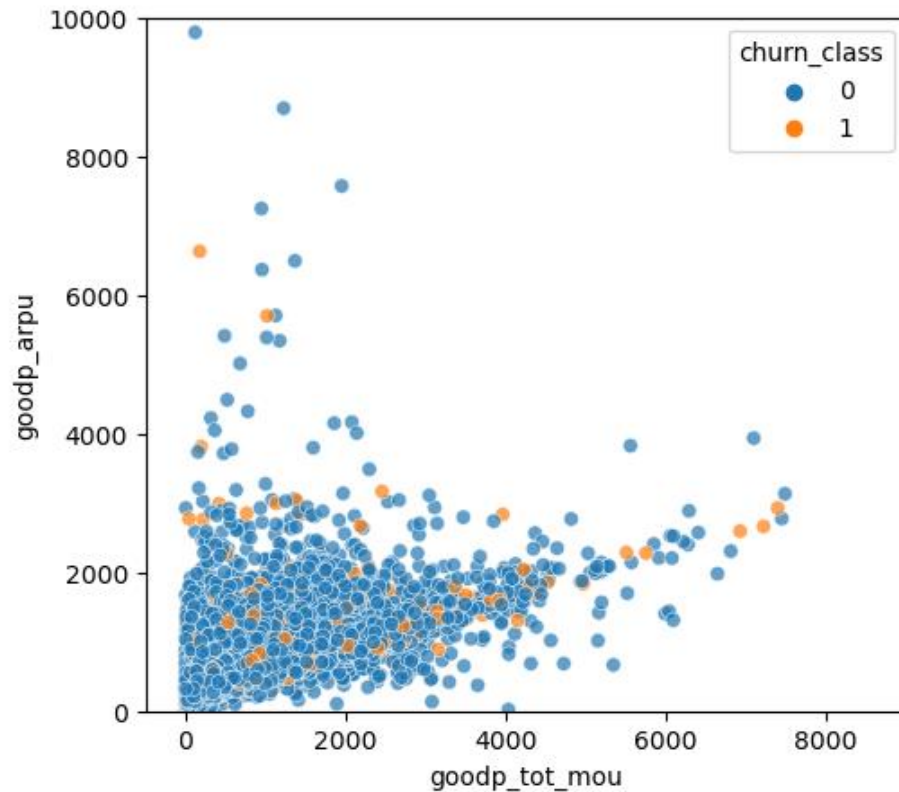IF VARIOUS OFFERS ARE EXTENDED TO THESE CUSTOMERS ON TALK TIME, IT WOULD HELP RETAIN THEM

# A DROP IN MINUTES OF USAGE FOR VOICE CALLS..

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IF VARIOUS OFFERS ARE EXTENDED TO THESE CUSTOMERS ON TALK TIME, IT WOULD HELP RETAIN THEM

CHURN CUSTOMERS ARE ALSO THE ONES THAT ARE COMPARATIVELY, NEW (TIME WITH THE SERVICE PROVIDER IN LESS THAN 40 MONTHS)

THE CUSTOMERS THAT FALL IN THIS RANGE SHOULD BE OFFERED SCHEMES IN THE INITIAL PERIODS, FOLLOWED BY BUILDING RELATIONSHIPS – BY MEANS OF LOYALTY POINTS, FAMILY PLANS, GIFT VOUCHERS THAT KEEP THE CUSTOMER STICKING ON THE OPERATOR.
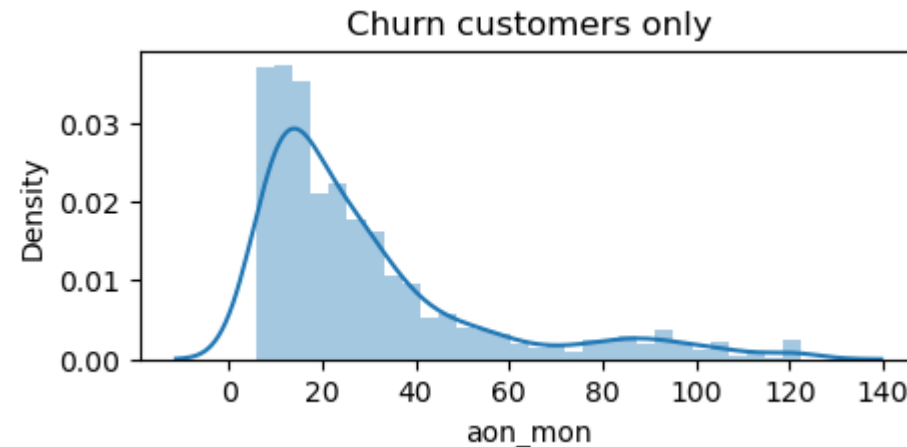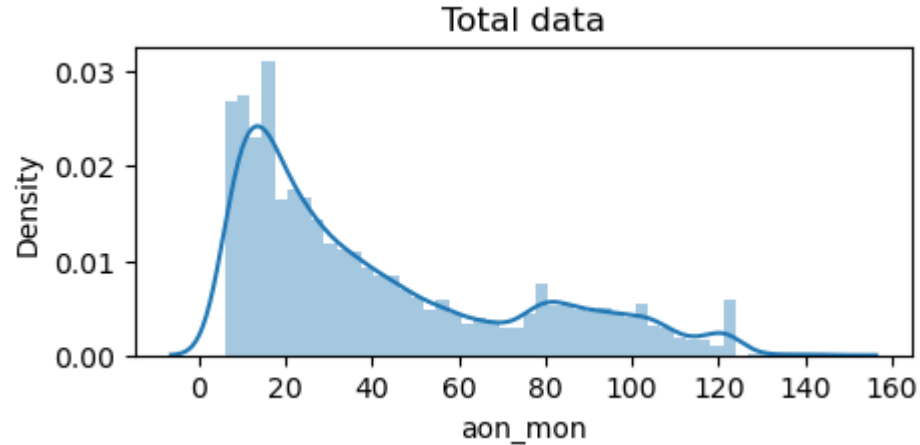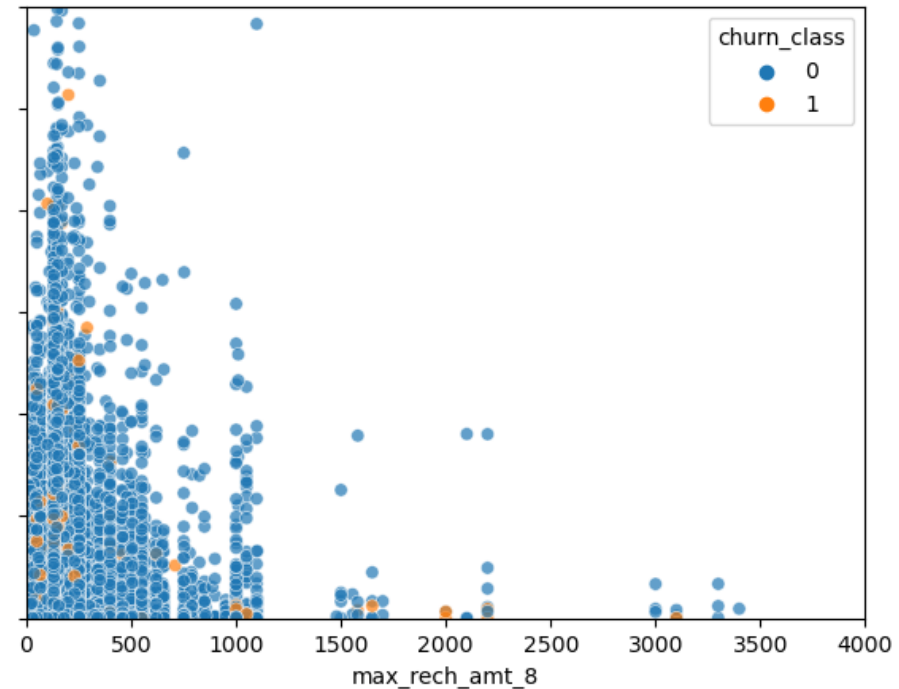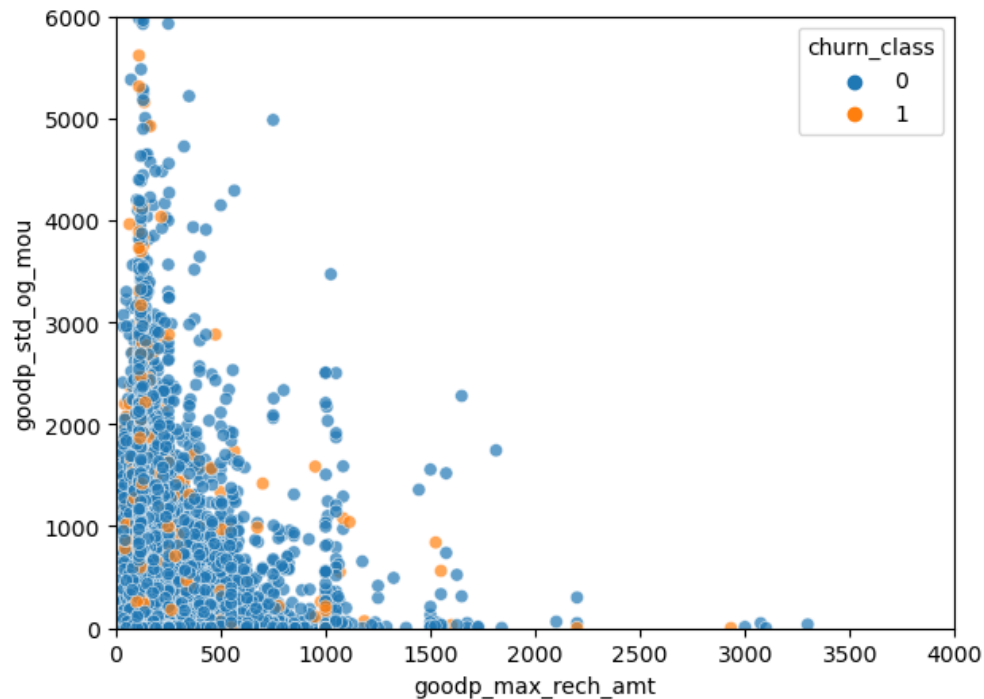
LOCAL OUTGOING CALLS SEE A HEAVY DECLINE IN THE ACTION PHASE AS AGAINST THE GOOD PHASE
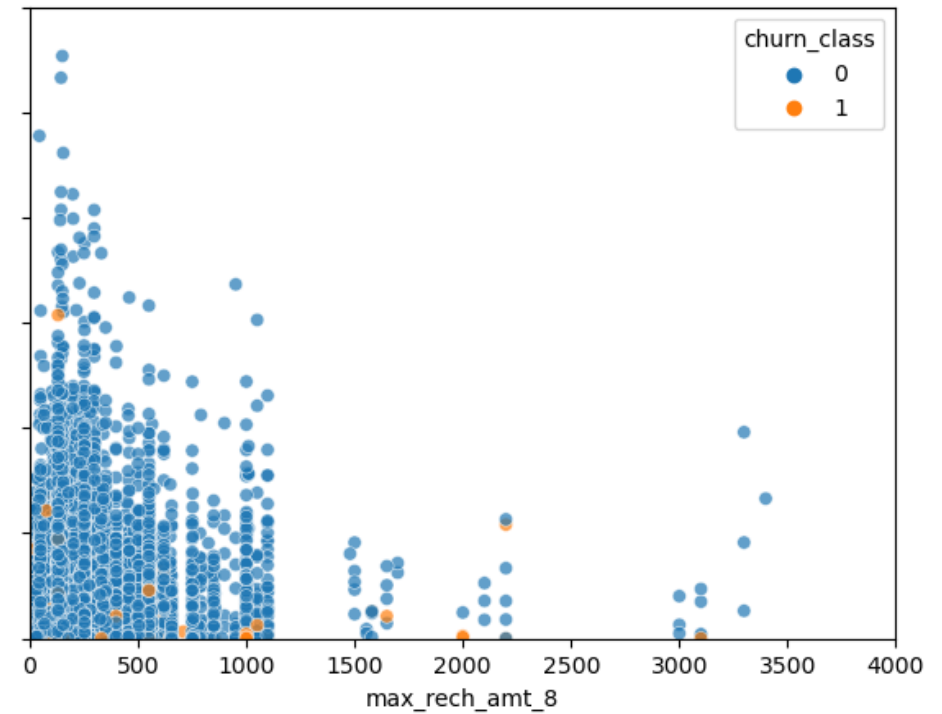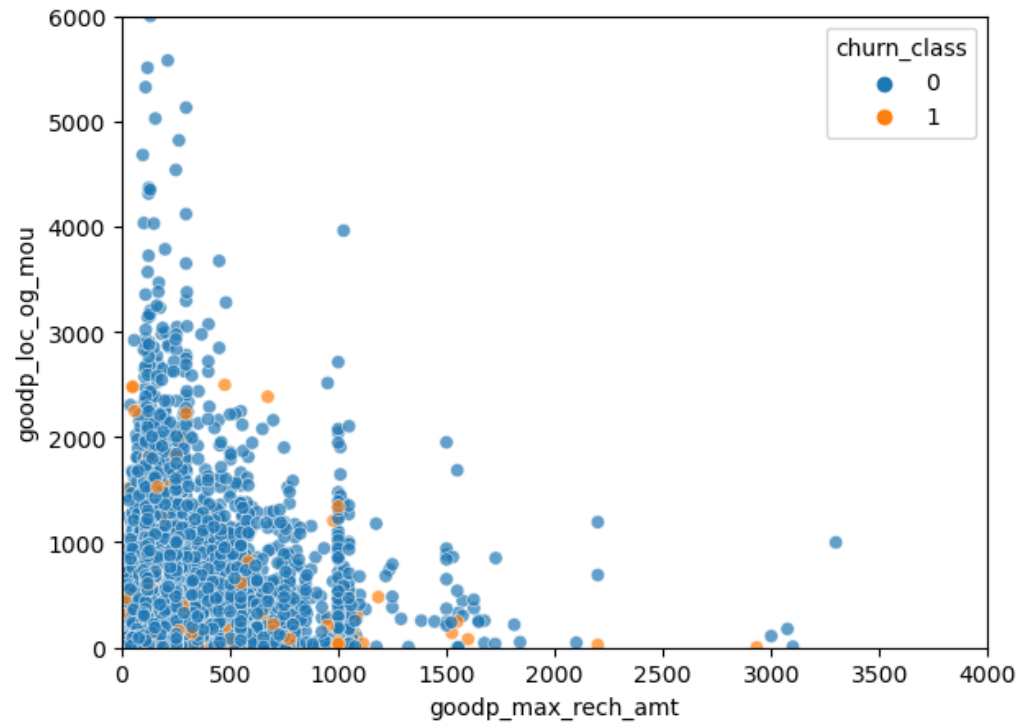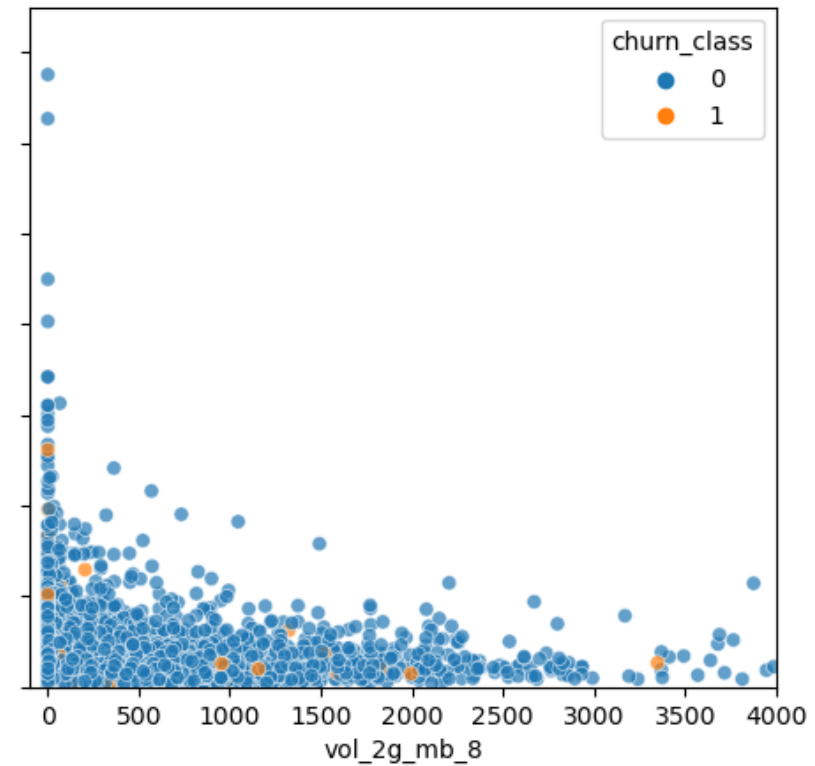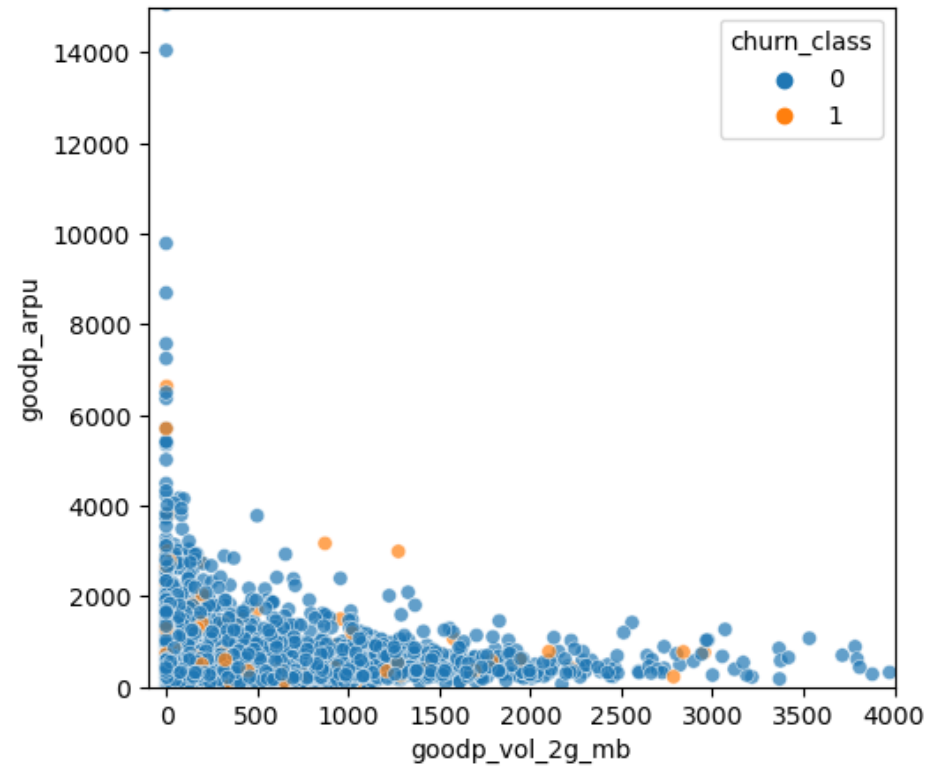
AN EVEN HEAVIER DECLINE IS SEEN IN OUTGOING STD CALLS.

THE IS ONE OF THE MOST STARK INDICATORS FOR A CUSTOMER CHURN. HENCE ADDRESSING THIS IS VERY IMPORTANT. BETTER OFFERS FOR OUTGOING STD CALL PLANS
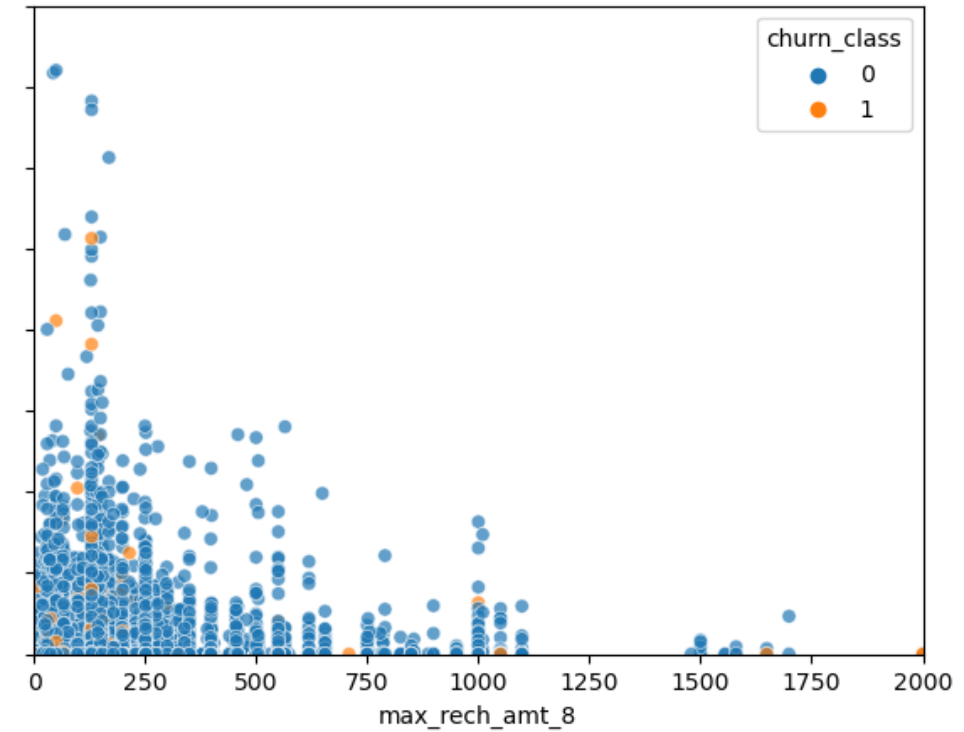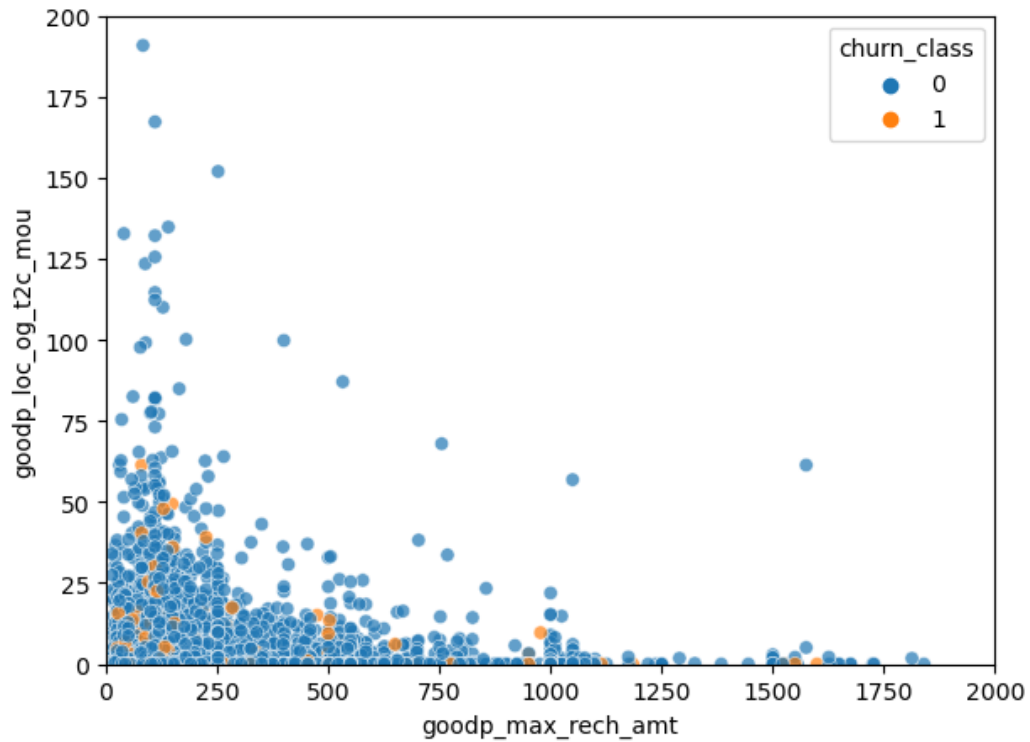
DATA USAGE IN 2G WITNESSES A DROP TOO..

AN INCREASE IN CALLS TO THE TELECOM OPERATOR'S CALL CENTRE IS SEEN IN THE ACTION PHASE

THIS IS AN ATTEMPT FROM CUSTOMERS TO CONNECT WITH THE OPERATOR TO RESOLVE THEIR ISSUES, PROBABLY.

ATTENTION SHOULD BE PAID TO EARLY RESOLUTION OF THESE QUERIES/CONCERNS

CONCLUSION

- There are enough and more indicators, before a customer churns out from a telecom operator. The approach should be as follows:

- Since, the churn is high in customers that are new to the network, it is important to help them stay for long so that they continue being loyal to the Service provider

  - Addressing queries is important for these customers. This not only helps a customer feel comfortable but also the fact that the customer feels important. A strong resolution team in call centres, also a better resolution mechanism is critical.

  - Churn happens, when customer stops/ reduces the use of critical services like outgoing local calls, STD calls, data usage. Offers, schemes and better plans to help these customers stay are critical.

  - Recharge frequency is important – this might also be because of ease with which a customer can recharge. Therefore, the easiest ways should be provided to customers, which would also be an edge against competition.

  - It is important that a relationship is established with customers. This should be done by regular calls from call centres to understand if everything is fine, Loyalty programs and point systems could be thought of.

  - Also, a constant analysis of information about the customer behavior should be done. This helps in very targeted approach to help retain customers.