Feature Analysis:

(i) **Age on the network (tenure)** is an important factor that determines the churn in High value customers; the longer a customer stays on the network lesser are the chances of him/her churning out.

(ii) **Total number of recharges done in the action month(8th month)** is an important indicator for churn of high value customers where less number of recharges in action month are a good indicator for customer churning.

(iii) **Minutes of usage (Voice) in the action month** combined is a very good indicator for customer churn. As the MOU in 8th month decreases, the chances of the customer churning out increases.

(iv) Churn customers seems to have a relatively **High ARPU (Average Revenue Per User) in the good phase**, indicating that *a sudden downturn in the ARPU* from good to action phase is a major indicator of the customer churn.

(v) **Total and Max data recharges** for customers that churn out seem to be on a **lower** side as compared to that of non churned customers.

Business Recommendations:

(i) Recently joined customers (Age on Network: 0-2 years) can be provided addon incentives for a fixed period of time.
(ii) Provide recharge incentives(data + voice) to high value customers in the action phase to help drive customer retention.
(iii) Customer with high ARPU in good phase can be provided usage based incentives to drive up the ARPU in action phase.
(iv) Can provide free or discounted local onnet and mobile usage voice minutes during the action phase.

predictions Summary:

Based on the above Prediction Results dataframe we can say that *`Logistic Regression (PCA + Hyperparameter Tuning)`* can be considered as the best model among all as the recall on positive class is the highest for the same. The trend in ROC_AUC of the models also justify the same.