Telecom churn case study

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Business Problem

- The telecom sector sees high competition to add and retain its customers.
- It is particularly focused on retaining high-value customers which helps in growing the top line and bottom line of the company.
- However, due to price wars and different levels of service provided, customers often migrate to different telecom carriers
- The study is to find out customers who are likely to churn and suggest steps to stop the customers from churning.

Data Analysis Approach

- Build a model to predict Telecom churn of the existing customers.
- Model can be chosen from Random Forest , Logistic Regression and Principal Component Analysis.
- The raw data is first handled using EDA.
- The resultant data is then manipulated using Data Engineerining concepts such as using derived variable.

- The customers who are high value are isolated
- Determine the current churn rates of such high value customers
- Build different models on the data using train and test data.
- Models build include: PCA, Random Forest and Logistics Regression.
- The suitable model is chosen using the analysis of fitting, specificity, sensitivity and AUC_ROC.

- The better model among all is the PCA and Logistic Regression Model.

- The important variables of churn are isolated such as total_ic_mou_8, total_rech_amt_diff,total_og_mou_8, ARPU, roam_ic_mou_8,std_og_mou_8,std_ic_mou_8

Business Suggestions

- Concentrate on users with 1.27 std devations lower than average incoming calls from fixed line. They are most likely to churn.
- Concentrate on users who recharge less number of times (less than 1.2 std deviations compared to avg) in the 8th month. They are second most likely to churn.
- Models with high sensitivity are the best for predicting churn. Use the PCA + Logistic Regression model to predict churn. It has an ROC score of 0.87, test sensitivity of 100%

- Give additional discounts to users according to their usage .
- Lower the tarriff on data usage.
- Better customer support line .
- Additional data on reduced prices -Expansion of 3g Service area.