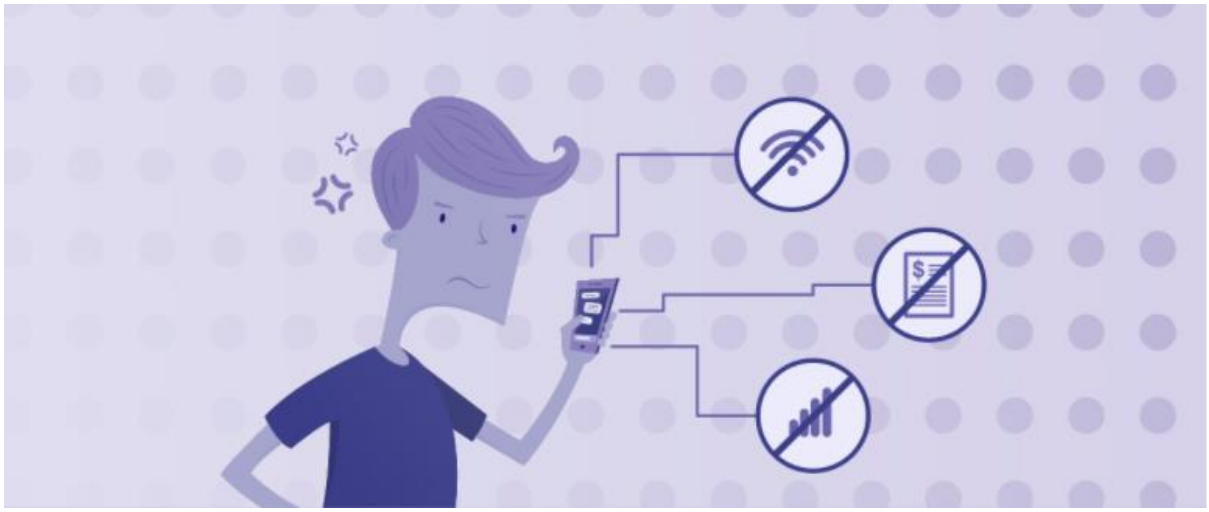
Context:

Predicting Customer Churn in the Telecom Industry



The major problem of Telecom companies is customer churn (loss of a customer to a competitor). The acquisition of a new customer is very expensive compared to retention of existing customers. Small percentage of reduction in churn improves huge margins to Telecom companies. The companies perform various target marketing activities or reward customer through offers and incentives, to retain a customer if he is identified before he churns. The current challenge is to develop a machine learning based engine that predicts customers who are likely to churn.

Dataset:

- customerID: Unique ID of the customer
- gender: Whether the customer is a male or a female
- SeniorCitizen: Whether the customer is a senior citizen or not (1,0)
- Partner: Whether the customer has a partner or not (Yes, No)
- Dependents: Whether the customer has dependents or not (Yes,No)
- tenure: Number of months the customer has stayed with the company
- PhoneService: Whether the customer has a phone service or not (Yes, No)

- MultipleLines: Whether the customer has multiple lines or not (Yes, No)
- InternetService: Customer's internet service provider (DSL, Fiberoptic, No)
- OnlineSecurity: Whether the customer has online security or not (Yes, No)
- OnlineBackup: Whether the customer has online backup or not (Yes, No)
- DeviceProtection: Whether the customer has enabled device protection or not (Yes, No)
- TechSupport: Whether the customer has assisted technical support or not (Yes, No)
- StreamingTV: Whether the customer has streaming TV or not (Yes, No)
- StreamingMovies: Whether the customer enabled the streaming services or not (Yes, No)
- Contract: Whether customer opted for short-term or long-term contracts (Month-to-Month, One year, Two year, Credit card (automatic),Bank transfer (automatic))
- PaperlessBilling: Whether the customer has opted for paperless billing or not (Yes, No)
- PaymentMethod: Modes of payment (Electronic check, Mailed check)
- MonthlyCharges: Monthly charges
- TotalCharges: Total Charges
- Churn: Whether the customer churned out or not (Yes, No)

Objective:

Build a Machine Learning Model to predict whether a customer would Churn out or not

Final Output:

1. Univariate and Multivariate Analysis in Python or Excel
2. End to End Model in Python
    a. Data Pre-processing
    b. Feature Engineering (if necessary)

    c. Visualisations
    d. Model Iterations
        i. Feature Selection
        ii. Hyperparameter Tuning
3. PowerPoint Presentation with all the analysis and Model information (Models Used and Iterations, Performance, Assumptions if any etc.)