**Industry: Telecom**

To analyze who are likely customers to leave ABC Telecom service provider

**Business Requirements**

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. Churn or churn rate measures the number of individuals or items moving out of a brand over a period. 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.

For ABC Telecom, retaining high profitable customers is the number one business goal.

To reduce customer churn, ABC Telecom need to predict which customers are at high risk of churn. The company needs a predictive service for the prediction of leaving customers and offer them attractive benefits for retention.

**Tasks**

* Data Ingestion using Azure Data Factory and store the results in Azure Data Lake Storage.
* Data Visualization: For better understanding of data
* Data processing: Azure Databricks/ Azure ML to preprocess and clean the raw data from the Data Lake Storage. Store the data in Azure Data Lake Storage.
* Feature engineering: Can use Azure ML/ Azure Databricks to load data from the Data Lake Storage and carry out feature engineering tasks.
* Model training: Analyze appropriate models for training. Use Azure ML tools or ML Flow for logging and orchestration of model training.
* Model Validation and Evaluation.
* Hyper Parameter Tuning: Use MLFLow / Azure ML
* Visualize the Evaluation results and select best model
* Ensure Fairness and differential privacy of the customers
* Explain the best model
* Deploy the best model as a Web Application
* Predict the future data using the deployed model
* Create a data drift detector to detect change in dataset over time.

**Dataset**

https://www.kaggle.com/datasets/blastchar/telco-customer-churn