# Business understanding

**Problem statement:**

Customer churn is an essential challenge for telecommunications companies, resulting in revenue loss and higher customer acquisition expenses. Understanding the main causes of churn can help businesses retain customers and enhance overall service quality. This project will evaluate customer behavior and uncover trends that contribute to churn, allowing the organization to implement focused measures to lower churn rates.

**Success Criteria:**

Sucess criteria will be measured by:

1. Accurate churn prediction: entails creating a model with high precision and recall identifying customers who are likely to leave.
2. Key churn factor identification: determining what factors have the most influence on customer churn.
3. Business impact: Making practical recommendations to lower churn rates by at least 10% while boosting client retention and revenue.

**Project plan:**

##### **1. Data Collection & Preparation**

* Explore and clean the dataset to handle missing values.
* Perform **feature engineering** (convert categorical variables, scale numerical features).
* Conduct **exploratory data analysis (EDA)** to understand key trends in churn behavior.

##### **2. Model Development**

* Split data into **training and test sets** for machine learning.
* Build predictive models like **Logistic Regression, Random Forest, and XGBoost**.
* Evaluate models using **accuracy, precision, recall, and F1-score**.

##### **3. Insights & Strategy Recommendations**

* Identify the **top features influencing churn** (e.g., contract type, monthly charges).
* Provide targeted **business solutions**, such as:
  + Offering **incentives for long-term contracts**.
  + Improving **customer support** for high-risk groups.
  + Developing **personalized retention campaigns**.

##### **4. Deployment & Monitoring**

* Deploy the best-performing model for **real-time churn prediction**.
* Continuously **monitor churn trends** and refine strategies based on new data.