Reducing Telecom Customer Churn: A Predictive Analytics Approach

# Problem Statement:

Customer churn is an enormous challenge for telecom firms, as consumers switch to competitors or end their contracts early. The task at hand is to create predictive models capable of identifying and comprehending the aspects that contribute to client attrition. The following questions will be addressed by this project:

1. What are the primary factors influencing telecom customer churn?

2. Can we create an accurate predictive model to anticipate which customers would churn?

3. How may these information be used to build targeted retention tactics and lower client churn?

# Background:

Customer retention is crucial in the telecommunications sector since it is extremely competitive and consumer-centric. The rising cost of client acquisition, along with the possible revenue loss associated with churn, has increased the importance of solving this issue. The origins of this problem may be traced back to the rising availability of telecom service providers, which provides consumers with more options, as well as customers' growing expectations for improved service quality, competitive pricing, and tailored experiences.

# Significance:

Reduced telecom customer turnover is critical for various reasons, including:

1. Economic Impact: Customer turnover results in considerable revenue loss since gaining new customers is more expensive than maintaining existing ones.

2. Market Competition: The telecom sector is very competitive, with several service providers competing for clients. Reduced turnover can provide you a competitive edge.

3. Customer happiness: Churn is a reflection of discontent with services, and resolving it leads to increased customer happiness and loyalty.

4. Data-Driven Insights: Using predictive analytics to better understand consumer behavior may help telecom firms customize their services and marketing efforts more successfully.

# Contribution:

This initiative has the potential to significantly benefit the telecom industry:

1. Predictive Modelling: By developing accurate predictive models, this project will be able to provide telecom companies with valuable insight into which customers are at risk of churning, allowing for pre-emptive retention efforts.

2. Data-Driven Decision Making: The initiative will enable telecom firms to make data-driven choices by identifying and prioritizing the most significant churn drivers.

3. Cost Savings: Lowering churn rates can result in significant cost savings since businesses can devote more energy on maintaining existing customers rather than constantly gaining new ones.

4. Improved Customer Experience: Addressing churn reasons improves the customer experience, which can lead to long-term loyalty and advocacy.

# Data Source:

This study' dataset was taken from Kaggle, a library of publicly available datasets used for different data science and machine learning projects. The dataset was chosen for its relevance to the topic at hand, forecasting client attrition. Here are the data source's specifics:

* **Source:** Kaggle / IBM Sample Data Sets

• **Dataset Name**: Telco Customer Churn

• **Description**: This dataset contains customer information about their churn behaviour as well as numerous factors such services subscribed, customer account details, and demographic information.

**Rationale for Dataset Selection**

The necessity for a comprehensive dataset that could be utilized to investigate client retention tactics drove the choice to use this dataset. Customers who departed within the last month are included in the dataset, as are the services they signed up for, account information, and demographic information. It has about 7000 rows and 21 columns, which provides a big enough sample size for significant data analysis and predictive modelling.

In summary, the dataset utilized in this study was obtained from IBM Sample Data Sets and was selected due to its relevance to customer churn analysis. It satisfied the criterion of having a sufficient amount of records (over 2000 rows) and the relevant columns to satisfy the Phase 1 objectives.