



Telecom Churn Prediction Project

TEAM N

TEAM LEAD: TANVI BARVE | CO-TEAM LEAD: SWAPNALI PATIL

Project Overview

- ▶ The Telecom Market Churn Prediction System predicts regional subscriber churn trends to help telecom operators manage investments, optimize marketing, and improve customer retention.
- ▶ It leverages machine learning models to forecast churn probabilities and support strategic decisions.

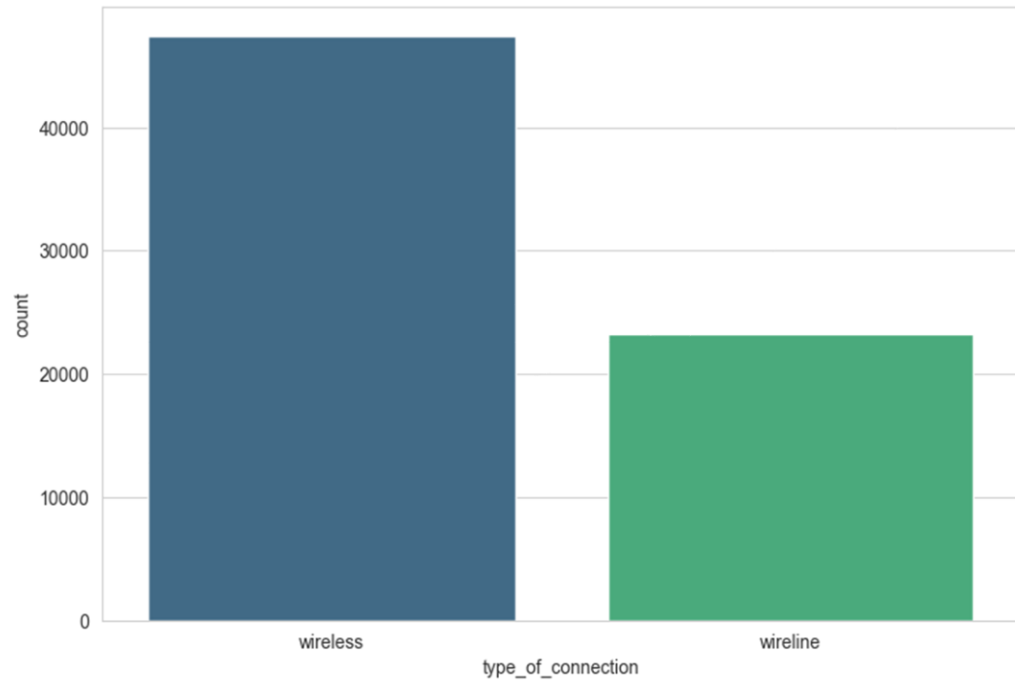
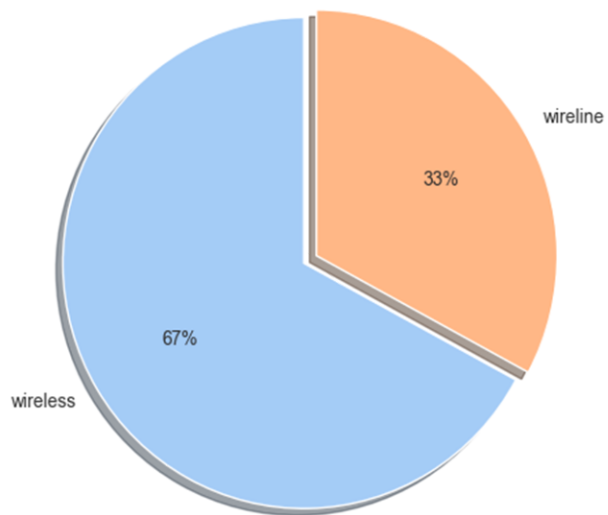
Team N - Members & Roles

- ▶ **Team Lead:** Tanvi Barve
- ▶ **Co-Team Lead:** Swapnali Patil
- ▶ **Foundation & Market Analysis:** Sumit Bhardwaj
- ▶ **Feature Engineering & Target Definition:** Suhani Kumari
- ▶ **Baseline Model Development:** Sumithi Pandian
- ▶ **Advanced Model Development:** Subhash Patel
- ▶ **Business Analysis & Deployment:** Swapnali Patil

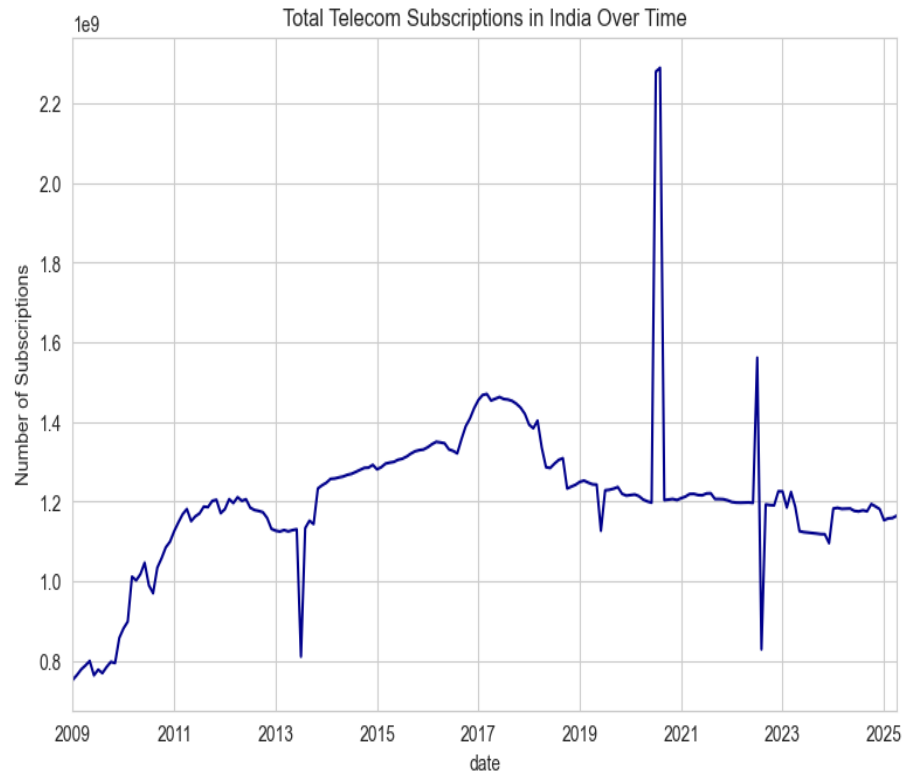
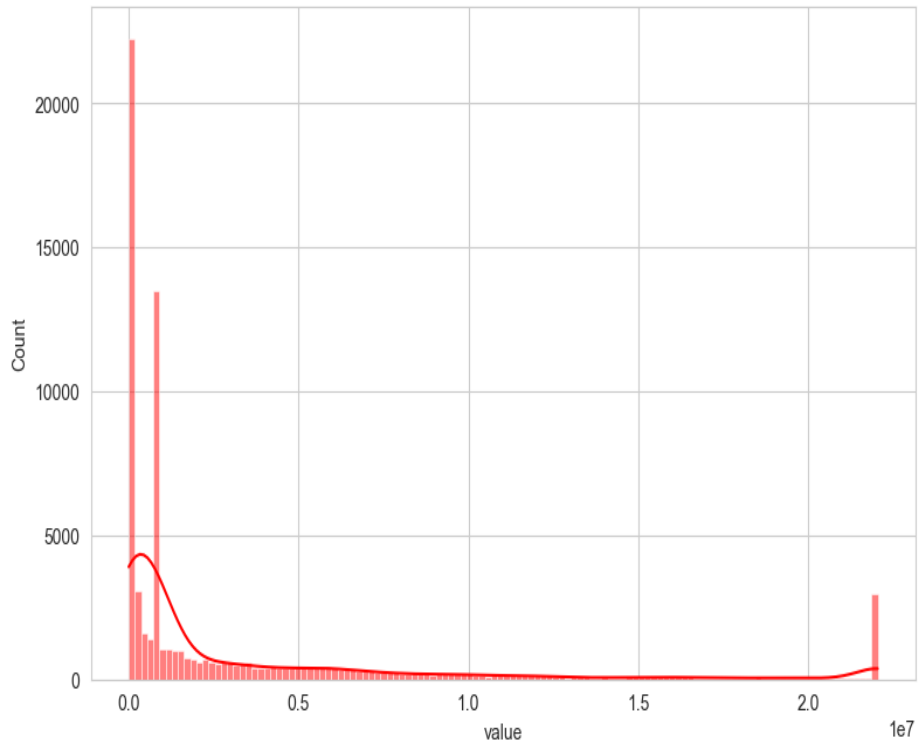
Project Workflow

- ▶ **1. Data Collection & Preparation**
- ▶ **2. Exploratory Data Analysis (EDA)**
- ▶ **3. Feature Engineering & Target Definition**
- ▶ **4. Baseline Model Development**
- ▶ **5. Advanced Model Development (Random Forest, XGBoost)**
- ▶ **6. Business Analysis & Deployment**

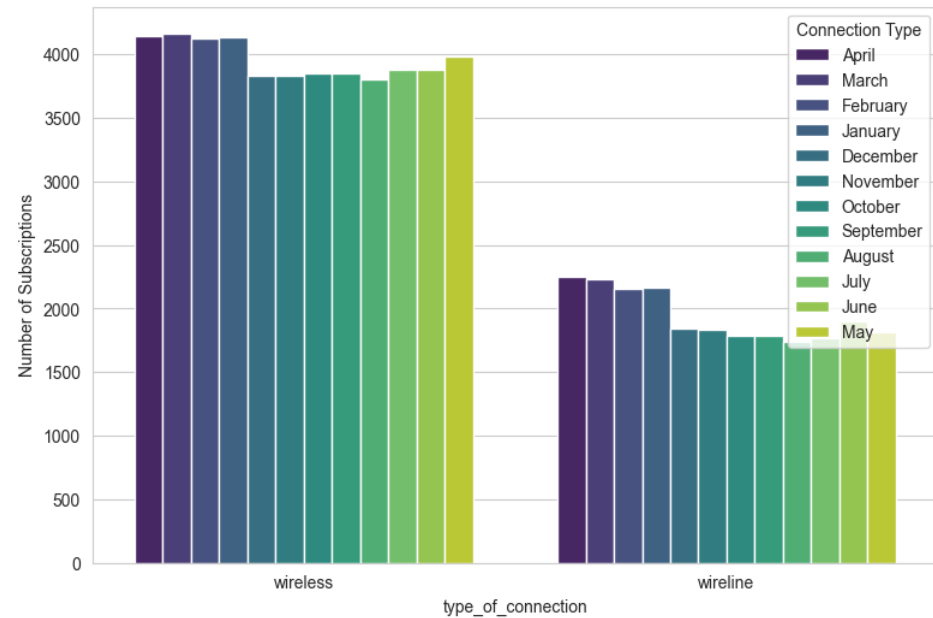
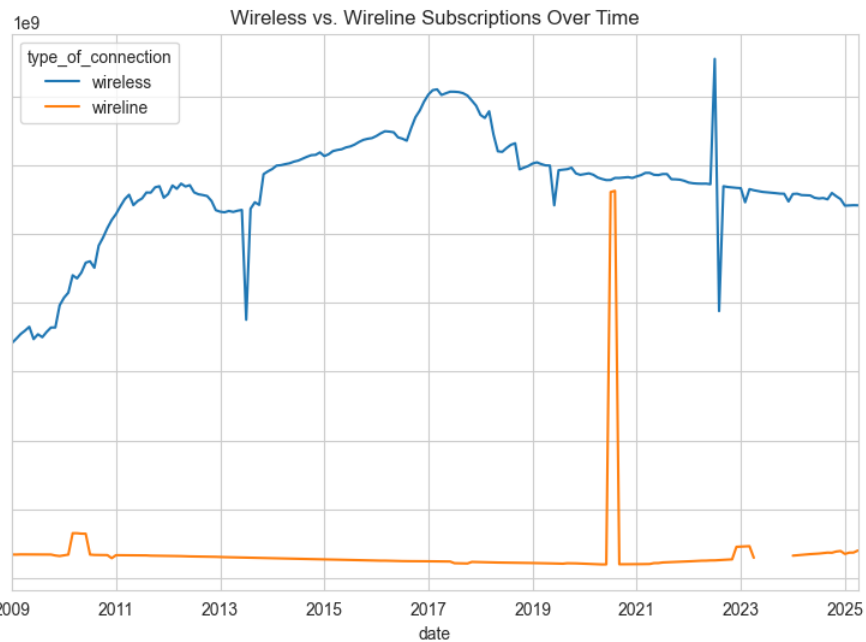
Type of Connection



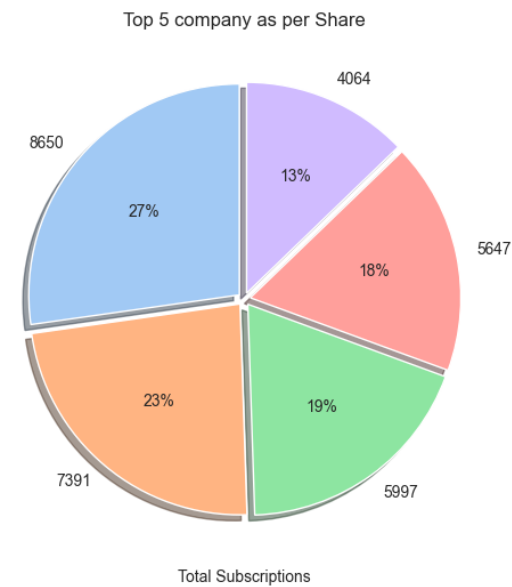
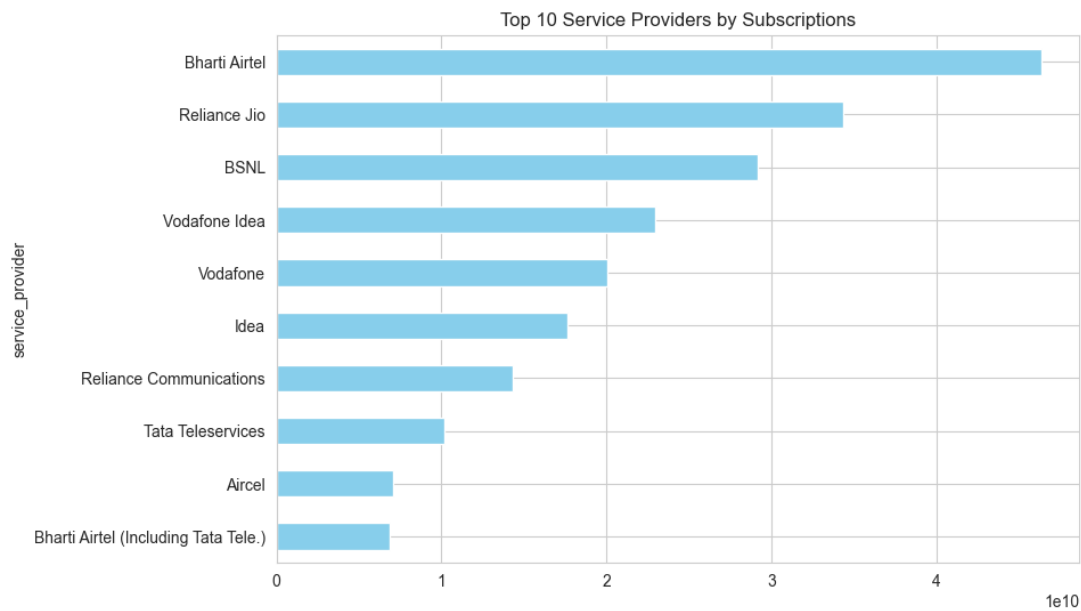
Telecom Subscription in India



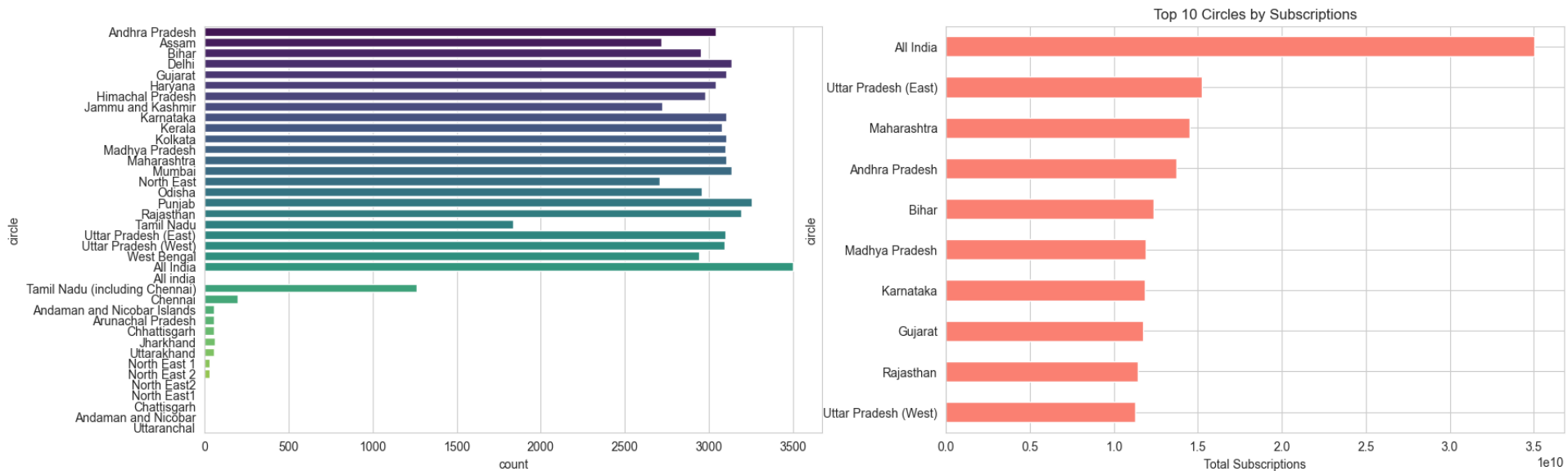
Subscriptions Over Time



Top 10 Service Providers



Top 10 Circles/Regions



Model Performance Summary

- ▶ • Logistic Regression – Accuracy: 0.85 | ROC-AUC: 0.61
- ▶ • Random Forest – Accuracy: 0.92 | ROC-AUC: 0.97
- ▶ • XGBoost (Final) – Accuracy: 0.95 | ROC-AUC: 0.9847
- ▶ • Stacked Ensemble – Accuracy: 0.93 | ROC-AUC: 0.9720

Business Impact

- ▶ • Customer Retention: Identify at-risk segments early
- ▶ • Revenue Protection: Prevent potential losses
- ▶ • Marketing Optimization: Enable targeted campaigns
- ▶ • Strategic Planning: Support investment & engagement decisions



Thank You

PRESENTED BY SWAPNALI PATIL