**Project Overview**

To proactively reduce customer churn using a machine learning-based predictive model. The final **stacking model** achieved an impressive **80.3% accuracy** and a **ROC AUC of 85.7%**, making it a reliable solution for identifying high-risk customers and improving retention strategies.

**Key Insights & Business Recommendation**

**1. New Customers Are Churning Early**

* **Insight:** Short-tenure customers are more likely to leave.
* **Impact:** Higher acquisition costs with minimal returns**.**
* **Recommendations:**
  + Launch a **“First 90-Day Engagement Program”** with onboarding support and personalized offers.
  + Use **push notifications** to guide new users through key features and promote early engagement.

**2. Low Service Usage = High Risk**

* **Insight:** Underutilization of calls, SMS, and data is a strong churn indicator.
* **Impact:** Perceived lack of value leads to disengagement**.**
* **Recommendations:**
  + Roll out a **“Usage Booster Campaign”** recommending customized plans.
  + Provide **bonus incentives** (free data, discounts) to increase daily engagement.

**3. Regional Churn Patterns**

* **Insight:** Some states and cities show significantly higher churn rates.
* **Why it matters:** Loss of regional revenue and brand presence.
* **Recommendations:**
  + Conduct **deep-dive churn analysis** for high-risk areas.
  + Improve **network quality** and deploy **localized retention offers**.

**4. Service Complaints = Red Flags**

* **Insight:** Customers with billing issues, slow data, or dropped calls are more likely to leave.
* **Impact:** Poor experience undermines loyalty.
* **Recommendations:**
  + Deploy **AI-driven chatbots** for quicker resolution.
  + Introduce **“Loyalty Compensation”** (e.g., discounts, bonus data).
  + **Proactively engage** at-risk customers before complaints arise.

**5. Competitor Offers Are Luring Customers**

* **Insight:** Many users churn due to better deals elsewhere—not dissatisfaction.
* **Impact:** Even satisfied customers are at risk.
* **Recommendations:**
  + Use **AI models** to identify and retain at-risk customers with personalized offers.
  + Launch **win-back campaigns** with exclusive deals.
  + Boost retention through **referral programs**.

**Strategic Value Delivered**

This project doesn’t just crunch numbers—it empowers smarter decision-making:

* **Data-Driven Retention** –Predictive insights enable focused interventions**.**
* **Cost Efficiency** –Reduces acquisition costs and improves customer lifetime value**.**
* **Competitive Edge** –Helps counter rival offers and retain market share.
* **Customer Satisfaction** –Personalized solutions improve experience and brand loyalty**.**

**Conclusion**

By integrating these insights into your retention strategy, you can **significantly reduce churn**, **increase revenue**, and **enhance customer satisfaction**. This project highlights the power of machine learning in transforming raw data into meaningful business action—offering a clear path to competitive advantage in the telecom sector.

Let’s move forward with implementing these strategies to unlock real business impact.