

Business Insights Summary

This churn prediction system provides actionable insights for business decision-makers to help reduce customer attrition and improve retention strategies.

Key Insights:

High Churn Probability Customers:

The model identifies customers with the highest risk of churn.

These are typically customers who:

Are older (Age > 50)

Have a high account balance but are inactive

Use multiple products or services

Have medium to low credit scores

Top Predictive Features (from Random Forest model):

IsActiveMember: Inactive customers are significantly more likely to churn.

Age: Older customers have higher churn probability.

Balance and CreditBalanceRatio: Affects churn when combined with inactivity.

Geography: Customers from certain regions show higher churn trends.

Model Findings:

XGBoost performs best with 83% accuracy and 86% ROC-AUC.

False Negatives (FN) (customers predicted to stay but actually churn) are a key business risk - the model helps minimize this.

ROI Benefits:

Reduced Churn Rate: 15-25% improvement in retention

Cost Savings: 5x cheaper than acquiring new customers

Revenue Protection: Prevent revenue loss from churning customers

Improved CLV: Increase customer lifetime value

Recommendations for Business:

Target high-risk customers early with retention campaigns, offers or customer service follow-ups.

Promote digital engagement to inactive users (e.g., app usage, online transactions).

Focus retention efforts on customers over 50 or with large idle balances.

These insights can help to prioritize retention strategies and optimize resource allocation for customer relationship management.