Telecom Customer Churn Analysis – Executive Summary

1. Executive Overview

This report provides an end-to-end analysis of telecom customer churn patterns, identifying the major factors that drive attrition and highlighting actionable strategies for improving customer retention. The insights are derived from a dataset of **7,043 customers**, focusing on demographics, services, contract types, and payment behaviors.

2. Dataset Overview

Attribute Category	Key Columns	Description
Demographics	Gender, SeniorCitizen, Partner, Dependents	Basic customer information
Services	InternetService, OnlineSecurity, TechSupport, StreamingTV	Product and service subscriptions
Contracts	Contract, Tenure, PaperlessBilling	Customer lifecycle and engagement
Payments	PaymentMethod, MonthlyCharges, TotalCharges	Revenue and billing characteristics
Target	Churn	Whether a customer left the service

3. Key Findings

- Overall Churn Rate: 26.5% (aligned with telecom industry average).
- **Contract Type:** 85% of churned users are on *month-to-month* plans; long-term contracts retain 80–85%.
- Payment Behavior: Electronic check users churn at 45%, while auto-pay users churn only 16%.
- **Demographics:** Senior citizens have 1.6× higher churn risk; customers with dependents show better retention.
- **Service Usage:** Users lacking *Tech Support* or *Online Security* churn 50% more often.
- **Tenure:** Early-tenure (<6 months) customers churn twice as fast as long-term users.

4. Analytical Approach

1. Exploratory Data Analysis (EDA):

- o Visualized churn patterns by demographics, contracts, and payments.
- o Identified correlations between service usage and churn.

2. Feature Correlation:

• Found strongest churn correlations with *tenure*, *contract type*, and *payment method*.

3. Machine Learning (Placeholder Results):

o Accuracy: 85%

o Precision: 82%

o Recall: 78%

(Model used logistic regression and tree-based classifiers for churn

prediction.)

5. Business Insights

Insight	Description	Business Impact
Contract Length	Short-term plans are the top churn driver	Promote annual contracts
Payment Mode	Manual billing drives attrition	Encourage auto-pay setups
Customer Tenure	Early lifecycle = high churn risk	Build onboarding retention campaigns
Service Support	Lack of security/support increases churn	Bundle tech support with plans
Price Sensitivity	High monthly charges = low satisfaction	Offer targeted pricing tiers

6. Strategic Recommendations

1. Transition short-term users to long-term plans via loyalty incentives.

- 2. **Promote auto-pay adoption** with discounts or cashback offers.
- 3. Bundle support and security services for fiber and month-to-month users.
- 4. **Launch early retention programs** for customers within the first 3 months.
- 5. **Deploy churn prediction model** to identify at-risk users proactively.

7. Expected Impact

Metric Current Target Projected Improvement

Churn Rate 26.5% 22% ↓ 15–20% reduction

Retention Rate 73.5% 78% +6–8%

ARPU (Avg. Revenue per User) ₹65 ₹72 +10-12%

Customer Lifetime Value Baseline +15% Improved ROI

8. Conclusion

This analysis reveals that churn is primarily driven by *contract flexibility, manual payment processes*, and *service dissatisfaction*.

Implementing data-driven retention initiatives and predictive monitoring can reduce churn by up to **15%** while boosting customer lifetime value and long-term profitability.