

Customer Churn Analysis – Telecom Company

1. Project Overview

Customer churn is one of the biggest revenue threats in the telecom industry. This project analyzes customer data to identify key factors influencing churn and provide actionable business recommendations to reduce customer attrition.

Objective:

To identify which customer segments are most likely to churn and uncover patterns that explain churn behavior.

2. Dataset Overview

The dataset contains information on 7,043 telecom customers, including:

- Demographics (Senior Citizen, Dependents, Partner)
- Account information (Contract type, Tenure)
- Services subscribed (Internet, Online Security, Backup, Tech Support)
- Payment methods
- Monthly charges
- Churn status (Yes/No)

3. Key Metrics

- **Total Customers:** 7,043
- **Churned Customers:** 1,869
- **Active Customers:** 5,174
- **Churn Rate:** 27%
- **Average Monthly Charges:**
 - Active Customers: 61
 - Churned Customers: 74

Customers who churn pay significantly higher monthly charges on average.

4. Key Findings

4.1 Contract Type is the Strongest Churn Driver

- Customers on **Month-to-Month contracts** show the highest churn.
- Customers on **One-Year and Two-Year contracts** show significantly lower churn.

Insight:

Longer contract commitments reduce churn risk.

4.2 New Customers Are More Likely to Churn

- Customers with tenure between **0–12 months** have the highest churn rate.
- Churn decreases as tenure increases.

Insight:

The first year is the most critical retention period.

4.3 Higher Monthly Charges Increase Churn Risk

Churned customers have a higher average monthly charge (74 vs 61).

Insight:

Price sensitivity plays a major role in churn behavior.

4.4 Customers Without Additional Services Churn More

Higher churn observed among customers who:

- Do NOT have Online Security
- Do NOT have Online Backup
- Do NOT have Tech Support
- Do NOT have a Partner or Dependents

Insight:

Customers with fewer bundled services and weaker household ties are more likely to churn.

4.5 Fiber Optic Customers Show Higher Churn

Despite higher adoption of fiber optic services, churn remains high among these customers.

Possible Hypotheses:

- Service reliability concerns
- Price dissatisfaction
- Competitive alternatives

Further investigation is recommended.

5. Customer Profile Most Likely to Churn

Based on the analysis, a high-risk churn customer typically:

- Is on a Month-to-Month contract
- Has 0–12 months' tenure
- Pays higher monthly charges
- Has no partner or dependents
- Does NOT subscribe to additional services (security, backup, tech support)

6. Business Recommendations

1 Incentivize Long-Term Contracts

Offer discounts or benefits for switching from month-to-month to annual contracts.

2 Strengthen First-Year Retention Strategy

- Onboarding campaigns
- Loyalty rewards in first 6 months
- Early satisfaction check-ins

3 Bundle Services Strategically

Encourage adoption of add-on services through:

- Discounted bundles
- Personalized offers

4 Review Pricing Strategy

Analyze pricing competitiveness, especially for fiber optic customers.

5 Target High-Risk Segments

Create churn prediction alerts for:

- New customers
- High monthly charge customers
- Month-to-month subscribers

7. Limitations

- The dataset does not include customer satisfaction scores.
- No historical churn trend analysis was performed.
- No predictive modeling was applied.

Future improvements could include:

- Logistic regression churn prediction
- Cohort analysis
- Revenue impact analysis
- Lifetime value modeling

8. Conclusion

This analysis reveals that churn is strongly influenced by contract type, tenure, pricing, and service adoption. The highest risk group consists of new, month-to-month customers with higher monthly charges and limited bundled services.

By focusing on early retention, contract incentives, and service bundling strategies, the company can significantly reduce churn and improve long-term revenue stability.