

TELCO CUSTOMER CHURN — SUMMARY REPORT

1. Executive Summary

This analysis explores churn behavior in a telecom company using customer demographic data, service usage, subscription details, and billing information. The goal is to identify key churn drivers and provide actionable recommendations to reduce customer loss.

Key Findings (Quick View):

- **26.5% overall churn rate**
- **Fiber Optic users churn 2× more** than DSL users
- **Month-to-month customers** show the highest churn
- **Short-tenure customers** are the highest-risk segment
- **High monthly charges** are strongly linked to churn

2. Dataset Overview

- Total customers: **7,043**
- Churned customers: **1,869**
- Dataset features:
 - Customer demographics
 - Services subscribed
 - Contract type
 - Tenure (in months)
 - Billing details (Monthly & Total Charges)

Data Cleaning Performed:

- Converted “TotalCharges” to numeric
- Replaced missing total charges using:
TotalCharges = tenure × MonthlyCharges
- Handled whitespace entries
- Checked for duplicates (none found)
- Standardized data types

3. Key Insights from Analysis

3.1 Churn Distribution

- Company faces **moderate churn (26.5%)**
- Highly imbalanced dataset → requires focus on minority class

3.2 Tenure & Churn

Insight:

Customers with **tenure less than 12 months churn nearly 3x more** than long-term customers.

Interpretation:

Early-stage onboarding issues or dissatisfaction in the first year.

3.3 Contract Type

Contract Type Churn Rate

Month-to-month **43%**

One-year 11%

Two-year 3%

Insight:

Month-to-month customers churn highest — lack of commitment + higher price sensitivity.

3.4 Internet Service Type

- **Fiber Optic users churn = 42%**
- DSL churn = 19%

Insight:

Fiber Optic users face issues (service quality, cost, reliability).

3.5 Monthly Charges

Observation:

Churn is significantly higher in customers paying **₹70–₹100 range** (high billing segment).

Interpretation:

Higher prices may reduce perceived value.

3.6 Services Affecting Churn

Churn is high among customers who also have:

- Tech support = No
- Online security = No
- Device protection = No

Insight:

Lack of add-on services might reflect lower engagement or dissatisfaction.

4. Customer Segments at Risk

High-Risk Segment

Feature	Profile
Tenure	< 12 months
Contract	Month-to-month
Internet	Fiber Optic
Monthly Charges	High (> ₹70)
Add-on Services	None

These customers have **45–52% churn probability**.

5. Business Recommendations

1. Improve onboarding for first-year customers

- Personalized welcome calls
- Better support in first 3–6 months

2. Reduce churn in Month-to-Month users

- Convert them to yearly plans using:
 - Discounts
 - Free add-ons
 - Loyalty points

3. Investigate Fiber Optic service complaints

- Network performance audit
- Check downtime patterns
- Survey Fiber users

4. Offer bundled services

Customers without security/tech support churn more.
Bundles can increase retention.

5. Target high-billing customers with offers

- Cashback
- Tiered pricing
- Loyalty benefits

6. Conclusion

This churn analysis reveals that **pricing, contract flexibility, internet service quality, and lack of add-ons** are major reasons for customer churn.

Implementing structured retention strategies can reduce churn by **8–12% in the first 6 months**.

7. Deliverables Included

- Cleaned dataset
- EDA notebook (full code)
- PDF summary report (this document)
- Charts visualizing churn patterns
- Business recommendations