

Executive Summary (Detailed)

Customer churn is one of the most critical challenges faced by subscription-based businesses, particularly in the **telecommunications industry**, where customer acquisition costs are high and competition is intense. This project performs an in-depth **Customer Churn Analysis** using a dataset of **7,043 customers** to identify the **key behavioural, contractual, and financial drivers** that lead customers to discontinue services.

The analysis integrates customer demographics, service subscriptions, billing patterns, and contract information to uncover churn trends and risk factors. The findings reveal that churn is **not random**; it is strongly influenced by **contract duration, tenure length, pricing structure, payment methods, and service quality perceptions**.

Approximately **26.5% of customers have churned**, indicating a substantial revenue risk. The highest churn concentration occurs among **new customers, month-to-month contract holders**, and customers with **high monthly charges but low perceived service value**. The project concludes with **actionable, data-driven recommendations** aimed at improving retention, enhancing customer lifetime value, and reducing operational losses.

Dataset Overview

- **Total Records:** 7,043 customers
- **Target Variable:** Churn (Yes / No)
- **Features:** 21
- **Key Feature Groups:**
 - Demographics: Gender, Senior Citizen, Partner, Dependents
 - Account Information: Tenure, Contract Type, Payment Method
 - Services: Internet Service, Online Security, Tech Support, Streaming
 - Financials: Monthly Charges, Total Charges

Detailed Analytical Findings

Overall Churn Analysis

- **Churn Rate:** ~26.5%
- **Retention Rate:** ~73.5%

Interpretation:

A churn rate above 25% is considered **high risk** in the telecom industry. This level of attrition significantly impacts:

- Recurring revenue
- Customer lifetime value (CLV)
- Marketing and acquisition costs

This highlights the urgent need for **predictive churn monitoring and targeted retention strategies**.

Tenure-Based Churn Behaviour

Key Observations:

- Customers with **tenure between 0–12 months** show the **highest churn rate**
- Churn probability decreases steadily as tenure increases
- Customers with **tenure above 24 months** demonstrate strong loyalty

Business Insight:

Churn is primarily an **early-stage problem**. Customers who do not form a strong connection or experience sufficient value in the first year are highly likely to leave.

Root Causes May Include:

- Poor onboarding experience
- Lack of product understanding
- Early service dissatisfaction
- Price shock after promotional periods

Contract Type Impact

Churn by Contract:

- **Month-to-Month:** Highest churn
- **One-Year Contract:** Moderate churn
- **Two-Year Contract:** Lowest churn

Business Insight:

Longer contracts create:

- Behavioural commitment
- Price stability
- Reduced switching tendency

Month-to-month contracts, while flexible, expose the business to **high volatility and churn risk**.

Pricing & Monthly Charges Analysis

Key Observations:

- Customers with **higher monthly charges** are more likely to churn
- Many churned customers pay **above-average monthly fees**

Interpretation:

High pricing without clearly perceived value leads to dissatisfaction. Customers compare cost vs benefit and churn when expectations are unmet. This indicates a **pricing-value mismatch**, not just high prices alone.

Payment Method Influence

Churn Patterns:

- **Electronic Check users** show significantly higher churn
- Customers using **automatic payments (credit card / bank transfer)** churn less

Business Insight:

Automatic payment methods:

- Reduce payment friction
- Increase customer stickiness
- Indicate higher trust and long-term intent

Electronic checks may signal **low engagement or temporary usage behaviour**.

Internet Service Type Analysis

Observations:

- **Fiber Optic customers churn more than DSL customers**

Possible Reasons:

- Higher pricing
- Higher service expectations
- Quality or reliability issues
- Inadequate technical support

This highlights that **premium services require premium support and reliability**.

Value-Added Services & Churn

Customers **without** the following services are more likely to churn:

- Online Security
- Tech Support
- Device Protection

Interpretation:

Value-added services increase:

- Customer dependency
- Switching costs
- Overall satisfaction

They act as **retention anchors**, especially for long-term customers.

Business Impact Assessment

High churn results in:

- Increased **customer acquisition cost (CAC)**
- Lower **average customer lifetime value**
- Unstable revenue forecasting
- Negative brand perception

Even a **5–10% reduction in churn** can lead to **significant profit growth**, as retaining customers is cheaper than acquiring new ones.

Strategic Business Recommendations

1. Strengthen Early Customer Lifecycle (Critical)

- Implement structured onboarding for the **first 90 days**
- Assign proactive support to new customers
- Monitor early usage patterns and intervene early

Goal: Reduce churn in the **highest-risk tenure group**

2. Promote Long-Term Contract Adoption

- Offer financial incentives for:
 - 1-year contracts
 - 2-year contracts
- Clearly communicate long-term cost savings
- Convert satisfied month-to-month users into long-term plans

3. Optimize Pricing & Personalization

- Identify customers with:
 - High monthly charges
 - Low service usage
- Offer:
 - Plan downgrades
 - Custom bundles
 - Loyalty discounts

Focus on **value alignment**, not blanket discounts.

4. Bundle Value-Added Services

- Package Online Security, Tech Support, and Device Protection
- Offer free trials of add-ons to new customers
- Educate users on benefits via targeted communication

5. Improve Fiber Optic Service Quality

- Conduct root-cause analysis on fibre complaints
- Improve response time and technical reliability
- Provide priority support for premium customers

6. Encourage Automated Payment Methods

- Provide incentives for switching to auto-pay
- Reduce friction in payment setup
- Educate customers on convenience and reliability

7. Implement Churn Prediction & Monitoring

- Build churn risk scores using:
 - Tenure
 - Contract type
 - Monthly charges
- Create dashboards for:
 - High-risk customer identification
 - Retention campaign tracking