# Business Report — Telco Customer Churn

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## Executive Summary

This report analyzes customer churn in a telecommunications dataset of 7,043 customers, revealing an overall churn rate of 26.54%. Key drivers include contract type, payment method, internet service, early tenure vulnerability, and customer engagement levels. Longer contracts and automatic payments significantly reduce churn, while month-to-month plans, electronic checks, and fiber optic services show elevated risk. Actionable recommendations focus on retention strategies to protect high-risk segments and improve long-term loyalty.

## 1. Problem Statement

Customer churn — the rate at which subscribers discontinue service — is a critical challenge for subscription-based telco businesses. High churn erodes recurring revenue, diminishes customer lifetime value, and escalates acquisition costs.

This exploratory analysis examines churn patterns across contract types, payment methods, internet services, tenure stages, and behavioral indicators (including an engineered engagement score). The objective is to pinpoint the strongest predictors of churn and deliver practical, prioritized recommendations to drive retention improvements.

## 2. Key Metrics

• Dataset Size: 7,043 customers
• Overall Churn Rate: 26.54%
• Average Monthly Charge: $64.76
• Median Tenure: 29 months

## 3. Top Insights

## Insight 1: Contract Type

| Contract Type | Churn Rate |
|---|---|
| Month-to-Month | 42.71% |

| | |
|---|---|
| One Year | 11.28% |
| Two Year | 2.85% |

Month-to-month customers churn at rates 4× higher than one-year contracts and 15× higher than two-year contracts.

## Insight 2: Internet Service

| Internet Service | Churn Rate |
|---|---|
| Fiber Optic | 41.89% |
| DSL | 18.99% |
| No Internet | 7.43% |

Fiber optic customers churn at nearly double the rate of DSL users.

## Insight 3: Payment Method

| Payment Method | Churn Rate |
|---|---|
| Electronic Check | 45.29% |
| Mailed Check | 19.20% |
| Bank Transfer (Automatic) | 16.73% |
| Credit Card (Automatic) | 15.25% |

Manual payment methods, especially electronic checks, correlate with significantly higher churn.

## Insight 4: Tenure Bands

| Tenure Band | Churn Rate |
|---|---|
| 0–6 months | 53.33% |
| 7–12 months | 35.89% |
| 13–24 months | 28.71% |
| 25–48 months | 20.39% |
| 49–72 months | 9.51% |
| 73+ months | 0.00% |

Over half of customers lost do so within the first six months.

## Insight 5: Engagement Score Predicts Loyalty

Low engagement (score ≤ 2) shows churn rates above 32–43%, while high engagement (score 7–8) drops below 6%.

## 4. Recommended Actions

1. Target Month-to-Month Retention: Incentives for contract upgrades.
2. Improve Fiber Optic Service Reliability.
3. Promote Auto-Pay to reduce manual billing churn risk.
4. Improve Early-Stage Onboarding for new customers.
5. Use Engagement Score for proactive retention.

## 5. Appendix — Data & Methodology

• Dataset: WA_Fn-UseC_-Telco-Customer-Churn.csv
• Methods: Cleaning, feature engineering, churn segmentation.
• Scope: Exploratory analysis only; no predictive modeling.
• Limitations: Correlational insights only.