# Executive Summary – Telecom Customer Churn Analysis

## Objective

The primary goal of this analysis was to identify key drivers of customer churn within the telecom dataset and to understand behavioral and contractual patterns associated with customers leaving the service. Churn is defined as customers who discontinued the service within the observation period.

## Data Preparation and Cleaning

• Missing or blank TotalCharges values were replaced with 0, corresponding to new customers with zero tenure.  
• The SeniorCitizen variable was converted from binary (0/1) to categorical (Yes/No) for clarity.  
• Minor categorical inconsistencies were standardized for accurate grouping.

## Overall Churn Overview

From the analyzed customer base, 26.54% of customers churned, while 73.46% remained active. This means roughly one in four customers discontinued service, representing a significant retention challenge.

## Demographic Insights

• Senior Citizens: Around 42% of senior citizens churned compared to 24% of non-seniors, nearly twice as likely to churn.  
• Customers without partners or dependents showed 10–15% higher churn rates, indicating higher loyalty among family-oriented users.

## Tenure-Based Analysis

• Customers with tenure below 12 months accounted for over 50% of all churned customers.  
• Customers with tenure over 3 years had a churn rate below 10%, showing strong loyalty.  
The first year of service is thus the most critical for retention efforts.

## Contract Type and Billing Method

• Month-to-month contract holders showed a 43% churn rate, compared to 11% (1-year) and 3% (2-year contracts).  
• Customers using electronic checks churned at 45%, compared to 15–20% for other payment methods.

## Internet and Tech-Related Services

• Customers without internet had the lowest churn (~7%).  
• Fiber optic customers churned at 42%, DSL users at 19%.  
• Add-ons like Online Security, Tech Support, and Device Protection reduced churn by up to 20%.

## Streaming & Entertainment Services

Customers subscribed to StreamingTV and StreamingMovies had churn around 30%, showing entertainment add-ons do not strongly influence loyalty.

## Strategic Recommendations

1. Focus retention efforts on new customers (<1 year tenure).  
2. Incentivize longer contracts through discounts.  
3. Develop loyalty offers for senior citizens.  
4. Promote bundled security and tech support services.  
5. Encourage stable payment methods to reduce churn volatility.

## Summary Metrics

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| Metric | Percentage |
| Overall Churn Rate | 26.54% |
| Senior Citizen Churn Rate | 42% |
| Non-Senior Churn Rate | 24% |
| Month-to-Month Churn | 43% |
| One-Year Contract Churn | 11% |
| Two-Year Contract Churn | 3% |
| Fiber Optic Churn | ~42% |
| DSL Churn | ~19% |
| Tenure < 12 months Churn | >50% |
| Tenure > 3 years Churn | <10% |

## Conclusion

The analysis confirms that contract length, customer tenure, and value-added services are the most influential factors in reducing churn. By focusing retention programs on new, month-to-month, and senior customers, the company can potentially reduce churn by 8–10%, improving long-term revenue stability.