

# TELCO CUSTOMER CHURN ANALYSIS

## . SUMMARY AND RECOMMENDATION

### Executive Summary

The analysis in the notebook focuses on understanding customer churn patterns through exploratory data analysis (EDA) and data visualization. Insights derived from the analysis are aimed at identifying key drivers of churn and formulating actionable strategies for customer retention.

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### 1. Customer Churn Overview

- **Churn Rate:** Approximately **26.5%** of customers have churned, indicating a substantial issue with customer retention. Retaining these customers can significantly impact profitability and long-term growth.
  - The majority of churned customers belong to segments with either unsatisfactory service quality, insufficient support, or higher service costs.
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### 2. Key Factors Influencing Churn

The analysis identifies several critical factors impacting customer retention. Below are the main insights:

1. **Internet Service Type:**
  - Customers using **fiber-optic internet** have a **churn rate of ~42%**, significantly higher than those using DSL (Digital Subscriber Line) services (~16%).
  - This suggests that technical issues or cost concerns may disproportionately affect fiber-optic users.
2. **Online Services (Security, Backup, Device Protection):**
  - Customers who do not subscribe to online security services or backups are more likely to churn. For instance:
    - **Online Security:** Non-users have a churn rate of **37%**, while users show a lower churn rate of **21%**.
    - **Online Backup:** Non-users have a churn rate of **35%**, compared to **19%** for users.
  - These findings highlight the importance of bundling value-added services to improve retention.
3. **Streaming Services (TV and Movies):**
  - Customers who do not use **streaming TV** or **streaming movies** churn at a rate of around **39%**, compared to **20%** for those who do.

- Streaming services might play a role in increasing customer stickiness by providing entertainment value.
  - 4. **Technical Support:**
    - The absence of technical support is strongly correlated with churn. Non-users of technical support have a churn rate of **38%**, while users churn at just **16%**.
    - Strengthening tech support availability and quality could address this gap.
  - 5. **Multiple Lines:**
    - Customers with no additional phone lines show a churn rate of around **35%**, compared to **22%** for those who have multiple lines. Additional services contribute to increased customer loyalty.
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### 3. Segment Analysis

The churn behavior is further analyzed across various customer segments:

1. **Phone Service:**
    - Customers with phone services show a churn rate of **23%**, while those without phone service churn at a slightly higher rate of **28%**.
    - Offering bundled phone and internet packages may improve retention.
  2. **Demographics:**
    - Younger customers and those on monthly contracts are more likely to churn. Specifically, customers on **month-to-month contracts** exhibit a churn rate of **43%**, compared to only **11%** for those on **2-year contracts**.
    - Customers with higher tenure (long-term customers) are less likely to churn, emphasizing the importance of retention efforts for new customers.
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### 4. Recommendations

Based on the insights, the following strategies are recommended to reduce churn:

1. **Strengthen Customer Support:**
  - Expand technical support services, particularly for customers using high-churn products like fiber-optic internet.
  - Train support staff to address technical issues efficiently and improve overall service satisfaction.
2. **Promote Value-Added Services:**
  - Bundle online security, backup, and device protection with internet services.
  - Incentivize streaming services to improve engagement and customer loyalty.
3. **Address Cost Concerns:**
  - Offer discounts or promotional packages for customers on month-to-month contracts to encourage longer-term commitments.
  - Conduct a pricing review to ensure competitive rates for fiber-optic customers.
4. **Loyalty Programs:**
  - Implement loyalty rewards for customers with high tenure.

- Introduce exclusive offers for customers subscribing to multiple services, such as phone, internet, and streaming.

**5. Focus on At-Risk Customers:**

- Use predictive models to identify customers at high risk of churning, based on service usage and demographic factors.
- Provide targeted outreach to these customers, including personalized offers and follow-ups.

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The visualizations clearly highlight the areas of concern and opportunities for improvement. For example, churn is significantly higher among customers who do not subscribe to optional services or who are on month-to-month contracts. By targeting these areas, the company can potentially reduce churn and increase customer satisfaction.