

Summary and Recommendations

Executive Summary – Telecom Customer Churn Analysis

The analysis covers a telecom customer dataset of **7,043 records** and evaluates patterns influencing churn (customers leaving the service).

Overall churn is **≈26%** of the customer base.

Key Insights

1. Contract & Billing

- **Month-to-month contracts** represent **55%** of all customers but account for **~88% of churners**.
- Customers on **one-year or two-year contracts** churn far less (≈11% combined of total churn).
- **Electronic check payment** users show the highest churn (**~45% churn rate**), much higher than credit-card or bank-transfer users (≈15–20%).

2. Service Subscriptions

- Add-on services have strong retention impact:
 - **OnlineSecurity**: Only **~16%** of customers with this service churn, compared to **~40%** without it.
 - **TechSupport**: Churn rate drops to **~18%** when subscribed vs **~42%** without.
 - **DeviceProtection / OnlineBackup**: Similar pattern—customers without these features churn at roughly **double** the rate of those with them.

3. Internet Service Type

- **Fiber optic** users experience the highest churn (**~30%**) versus **DSL (~18%)**.
- Customers with **No internet service** churn the least (**~7%**).

4. Demographics & Tenure

- **Senior Citizens** ($\approx 16\%$ of customers) churn at **$\sim 42\%$** , significantly higher than non-senior customers (**$\sim 24\%$**).
- Tenure matters: customers with less than one year of service churn at **$> 45\%$** , whereas those with more than five years churn at **$< 10\%$** .

5. Charges

- Average monthly charges for churned customers are **$\sim \$74$** , about **20% higher** than for retained customers (**$\sim \$61$**).
- Higher monthly fees, especially when combined with month-to-month contracts, drive attrition.

Business Implications

- **Retention Focus:** Target month-to-month customers with loyalty discounts or incentives to switch to annual contracts.
- **Bundling Strategy:** Encourage uptake of OnlineSecurity, TechSupport, and DeviceProtection as these correlate with churn reductions of 20–25 percentage points.
- **Pricing & Value:** Review pricing for fiber-optic plans and high-charge segments to reduce cost-related churn.

1 Contract & Billing Patterns

- **Month-to-month contracts** account for **55% of all customers** yet contribute **$\approx 88\%$ of total churn**.
- **One-year and two-year contracts** show strong retention, with churn rates around **11% combined**.
- **Electronic check** users exhibit the **highest churn ($\sim 45\%$)**, while automatic bank transfer and credit-card users churn at only **15–20%**.

2 Service Subscriptions

Customers who subscribe to key add-on services are far less likely to churn:

Service	Churn w/ Service	Churn w/out Service
Online Security	~16%	~40%
Tech Support	~18%	~42%
Device Protection	~20%	~38%
Online Backup	~22%	~39%

Insight: Lack of these services nearly doubles the chance of churn.

3 Internet Service Type

- **Fiber-optic users** churn at **~30%**, far higher than **DSL (~18%)**.
 - Customers with **no internet service** have the lowest churn (**~7%**), likely because many are traditional phone users with stable needs.
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4 Demographics & Tenure

- **Senior Citizens** (≈16% of customers) churn at **~42%**, compared to **~24%** for non-seniors.
 - Tenure is critical:
 - **<12 months service → >45% churn**
 - **>5 years service → <10% churn**
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5 Financial Drivers

- **Average Monthly Charges:**
 - Churned customers: ~\$74
 - Retained customers: ~\$61
 - → About **20% higher cost** correlates with higher churn.
 - Total charges follow a similar pattern, confirming price sensitivity.
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Strategic Recommendations

1. **Retention Campaigns:**
 - Offer **loyalty discounts** or incentives to month-to-month customers to move them into annual or multi-year contracts.
 2. **Value Bundling:**
 - Promote **OnlineSecurity, TechSupport, DeviceProtection, and OnlineBackup** through discounted packages—these cut churn risk by **20–25 percentage points**.
 3. **Price Review & Service Quality:**
 - Reassess **fiber-optic pricing** and invest in service reliability to curb its **~30% churn rate**.
 4. **Targeted Senior Programs:**
 - Provide personalized support or senior-friendly plans to reduce their **~42% churn**.
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Bottom Line:

Reducing churn by even **5 percentage points** in these high-risk segments could retain **350+ customers** and protect **hundreds of thousands of dollars** in annual revenue.

Focusing on contract upgrades, service bundling, and pricing strategy offers the greatest impact.