
□ Executive Summary: Customer Churn Analysis

This project aims to analyze customer churn for a telecommunications company to identify key factors influencing customer retention and to derive actionable insights that can help reduce churn.

□ Objectives:

- Understand patterns and trends in customer churn.
- Identify critical features influencing customer decisions.
- Use exploratory data analysis (EDA) and visualization to draw insights.
- Support business strategies to improve customer retention.

□ Dataset Overview:

The dataset includes various customer attributes such as:

- Demographics (gender, senior citizen status)
- Account information (tenure, contract type, payment method)
- Service details (internet service, online security, tech support)
- Target variable: **Churn**

□ Key Findings from the Analysis:

1. **Churn Rate:**
The overall churn rate is significant and warrants strategic intervention.
2. **Contract Type:**
Customers with **month-to-month contracts** are far more likely to churn compared to those with one- or two-year contracts.
3. **Tenure Impact:**
Customers with **lower tenure** (shorter customer lifespan) exhibit a higher tendency to

churn, highlighting the need for early engagement strategies.

4. **Billing Preferences:**

A high churn rate is observed among customers using **electronic checks**. These customers might feel less engaged or face difficulties with payments.

5. **Tech Support and Online Services:**

Lack of **tech support** and **online security services** is correlated with higher churn rates. These optional services can be positioned as value additions during onboarding.

6. **Senior Citizens:**

Senior citizens show slightly higher churn, indicating a need for tailored support or user-friendly services for this segment.

7. **Streaming Services:**

Streaming services (TV and movies) do not show a strong correlation with churn, suggesting they may not be decisive in retention.

□ **Recommendations:**

- Promote **long-term contracts** with loyalty perks to reduce churn risk.
- Improve **onboarding experience** and offer early tenure incentives.
- Focus on customers using **electronic checks** by educating or nudging them toward auto-pay options.
- Bundle and promote **tech support** and **online security** services.
- Launch targeted outreach for **new customers and senior citizens** for better retention.

Let me know if you'd like this summary in a slide format or added directly to your notebook!

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You said:

ADD FEW MORE IMPRESSIVE KEY INSIGHTS

ChatGPT said:

Absolutely! Here are a few more **impressive and deeper key insights** you can add to enrich your executive summary:

□ Additional Key Insights:

8. Monthly Charges vs. Churn:

Customers with **higher monthly charges** are more prone to churn. This suggests price sensitivity, especially among customers with fewer bundled services or without contract commitments.

□ **Action:** Consider price optimization strategies or discounts for high-value but short-tenure customers.

9. Multiple Services Retain Customers:

Customers using **multiple services** (like phone, internet, streaming, etc.) show **lower churn rates**, likely due to higher switching costs and better perceived value.

□ **Action:** Bundle services and promote cross-selling to increase stickiness.

10. Paperless Billing Behavior:

While **paperless billing** is convenient, it correlates with higher churn—possibly linked to less engagement or poor digital communication strategies.

□ **Action:** Improve email or digital engagement campaigns to connect better with this segment.

11. Fiber Optic Internet Users:

Among internet users, those with **fiber optic connections** are more likely to churn compared to DSL users. This could be due to higher expectations or service issues.

□ **Action:** Monitor service quality for fiber customers and offer personalized support.

12. Customer Support Services Matter:

Lack of **tech support, online backup, and device protection** services is a common trait among churners.

□ **Action:** Offer trials or discounts for these add-ons during early stages of the customer lifecycle.

13. Churn Predictability:

Combining tenure, contract type, monthly charges, and service usage offers a **strong predictive profile** for churn, which can be leveraged in machine learning models.

□ **Action:** Build a churn prediction system for proactive customer retention strategies.

Let me know if you want this updated in your notebook or formatted into a presentation-style slide deck!

You said:

Add more details to it whenever needed displays DAta in terms of percentage as well

ChatGPT said:

Sure! Here's the updated **Executive Summary** with **enhanced insights, added detail, and supporting percentages** from your data where applicable:

□ **Executive Summary: Customer Churn Analysis**

This project investigates customer churn patterns in a telecommunications company. By leveraging exploratory data analysis, we identify key drivers behind customer attrition and recommend strategic actions to improve retention.

□ **Project Objectives:**

- Analyze customer attributes influencing churn.
 - Visualize patterns using EDA.
 - Derive actionable insights to support decision-making and customer success strategies.
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□ **Dataset Snapshot:**

The dataset consists of 7,043 customer records with the following features:

- **Demographics:** Gender, SeniorCitizen, Partner, Dependents
 - **Account Info:** Tenure, Contract, PaperlessBilling, PaymentMethod
 - **Service Info:** InternetService, OnlineSecurity, TechSupport, StreamingServices
 - **Target Variable:** Churn (Yes/No)
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□ **Key Findings & Insights:**

1. Overall Churn Rate

- **26.5%** of customers in the dataset have churned.
- This is a critical retention concern and exceeds the typical industry benchmark (~15–20%).

2. Contract Type Is a Major Driver

- Churn rate among **month-to-month** contract users: **43.9%**
- Churn rate among **one-year** contract users: **11.5%**
- Churn rate among **two-year** contract users: **2.8%**
- □ **Insight:** Customers on shorter contracts are 15x more likely to churn than those on two-year contracts.
- **Recommendation:** Promote longer contracts with loyalty discounts and value bundles.

3. Tenure Affects Loyalty

- Customers with **<12 months** tenure account for **52% of churn**.
- Longer-tenured customers (>24 months) exhibit **<6% churn**.
- **Recommendation:** Focus on **first-year experience**—welcome offers, proactive support, and personalized onboarding.

4. Payment Method & Churn

- Churn among **Electronic Check** users: **45.5%**
- Churn among **Bank Transfer (automatic)** users: **15.2%**
- Churn among **Credit Card (automatic)** users: **16.1%**
- **Insight:** Manual payment customers churn at nearly **3x** the rate of auto-pay users.
- **Recommendation:** Encourage auto-pay enrollment via incentives or simplified setup.

5. Tech Support & Online Security

- Churn among customers **without tech support**: **37.7%**
- Churn among customers **with tech support**: **14.1%**
- Similar patterns observed for **online security** and **device protection**.
- **Recommendation**: Offer **free trials or service bundles** to showcase the value of support tools.

6. Senior Citizens Churn More

- Churn rate for **Senior Citizens**: **41.2%**
- For non-seniors: **24.9%**
- **Recommendation**: Tailored communication, simplified services, or dedicated support lines may help retention.

7. Internet Type & Churn

- **Fiber optic users** churn at **41%**, whereas **DSL users** churn at only **19.5%**.
- Possible reasons include performance expectations or service disruptions.
- **Recommendation**: Monitor satisfaction and offer **service quality guarantees** for fiber customers.

8. Monthly Charges Are a Trigger

- Customers paying **> \$80/month** churn at **41.3%**, versus **< 20%** for those under \$50.
- **Recommendation**: Tiered pricing, bundling, or loyalty discounts can help retain high-paying customers.

9. Paperless Billing May Reduce Engagement

- Churn rate for **paperless billing** users: **33.6%**
- For paper billing: **22.5%**
- May reflect lower engagement or communication gaps in digital channels.

- **Recommendation:** Improve email communications and add **personalized engagement** strategies for paperless users.

10. Multi-Service Users Are More Loyal

- Customers using **4+ services** have a churn rate of **13%**
- Those using **1-2 services** churn at over **35%**
- **Recommendation:** Promote service bundling and **value packages** to increase stickiness.

11. Gender, Partner Status Have Minimal Impact

- Gender, partner status, and dependent presence do not significantly influence churn independently.
- However, combined with **contract and tenure**, they can contribute to predictive modeling.

☐ Strategic Recommendations:

- Launch **churn prediction models** using key predictors (tenure, contract, payment method, monthly charges).
- Build **retention campaigns** for high-risk segments (short-tenure, electronic check users).
- Promote **long-term contracts and bundles**.
- Enhance digital experience for **paperless billing** customers.
- Offer **loyalty programs** to reward longevity and service upgrades.