

## Objective:

The goal is to identify which factors are most strongly associated with higher churn rates to guide customer retention strategies.

## Key Insights & Findings:

- **Contract Type and Churn:**
  - Customers on **month-to-month contracts** exhibit the highest churn rate, with **42%** of such customers likely to churn.
  - In contrast, customers on **one-year** and **two-year contracts** have churn rates of **11%** and **3%**, respectively.
  - **Implication:** Longer contract periods serve as a strong retention tool, as customers with extended commitments are far less likely to leave.
- **Payment Methods and Churn:**
  - Customers paying via **electronic checks** show the highest churn rate at **45%**, while those using **credit cards, bank transfers, or mailed checks** have significantly lower churn rates, averaging around **15-18%**.
  - **Implication:** The convenience, security, and trust issues related to electronic payments might be contributing factors. Encouraging customers to switch to more stable payment methods could reduce churn.
- **Churn by Tenure:**
  - Customers with **less than one year** of tenure are the most likely to churn, with a **50%** churn rate. Those with **1-3 years of tenure** show a decreasing churn trend at **35%**, while customers who have been with the company for **more than three years** have a churn rate of just **15%**.
  - **Implication:** Engaging customers early in their journey, especially within the first year, is critical for retention.
- **Churn by Internet Service Type:**
  - Customers using **Fiber Optic** services show a higher churn rate of **30%**, compared to **DSL customers** with a churn rate of **20%**.
  - **Implication:** This could be due to increased competition or dissatisfaction with service quality. Understanding customer satisfaction with service speed and reliability may help retain fiber optic users.
- **Senior Citizens and Churn:**
  - The analysis reveals that **senior citizens** (aged 65+) have a churn rate of **41%**, compared to a **26%** churn rate among non-senior citizens.
  - **Implication:** Special retention programs and targeted customer service for senior customers may help reduce churn in this demographic.

## Visualizations & Data Insights:

- **Bar Charts and Line Graphs:**
  - The visual representation of churn by **payment method** clearly shows that customers using electronic checks churn almost three times as much as those using more traditional or secure methods like credit cards.

- **Customer tenure** vs. churn rate visualizations reveal a clear declining trend in churn as customers' tenure increases, underscoring the need for early-stage customer loyalty programs.
- **Percentage Distribution of Churn Across Factors:**
  - **Payment Methods:** 45% churn for electronic check users, 15% for credit card users.
  - **Contract Types:** 42% churn for month-to-month contracts, 11% for yearly contracts, 3% for two-year contracts.
  - **Tenure:** 50% churn in the first year, dropping to 15% after three years.

## **Recommendations:**

- **Promote Long-Term Contracts:** Offer incentives for customers to commit to longer contracts to reduce churn.
- **Address Payment Method Concerns:** Implement campaigns encouraging customers to switch from electronic checks to more reliable payment methods.
- **Customer Engagement in Early Tenure:** Focus on improving the customer experience within the first year, as churn is highest in this period.
- **Special Senior Citizen Retention Programs:** Create personalized offers or assistance programs to retain the senior demographic.