

# Summary – Telco Customer Churn Analysis

This project focuses on analyzing customer churn in a telecom company to identify key drivers of customer attrition and provide actionable business insights. After performing data cleaning, preprocessing, and exploratory data analysis, multiple visualizations were created to understand churn patterns across service usage, internet type, and customer support features.

## Key Insights

- **Overall Churn Rate:**  
Approximately **26.6% of customers have churned**, indicating that more than one in four customers discontinue the service. This highlights customer retention as a major business challenge for the telecom company.
- **Contract Type Impact:**  
Customers on **month-to-month contracts show the highest churn percentage**, while customers with **one-year and two-year contracts have significantly lower churn rates**. This suggests that longer-term contracts improve customer loyalty and reduce churn.
- **Internet Service Type:**  
**Fiber Optic internet users exhibit the highest churn percentage** compared to DSL users. This may indicate concerns related to pricing, service expectations, or customer experience among fiber optic customers.
- **Support & Security Services:**  
Customers **without OnlineSecurity, TechSupport, and DeviceProtection services contribute to a majority of churn cases**. In contrast, customers who have these services show noticeably lower churn percentages, emphasizing the importance of value-added services.
- **Payment Method Influence:**  
Customers using **Electronic Check payment methods display higher churn percentages** compared to customers using automated payment options such as credit cards or bank transfers, suggesting that payment convenience and trust influence customer retention.
- **Service Bundling Effect:**  
Customers subscribed to **multiple services (phone, internet, streaming)** demonstrate lower churn percentages compared to customers with fewer services, indicating that bundled offerings improve customer stickiness.

Overall, the visualizations and percentage-based analysis clearly indicate that **customer churn is strongly influenced by service quality, support availability, pricing structure, and contract type**. The findings suggest that telecom companies can reduce churn by promoting support and security add-on services, encouraging long-term contracts, improving fiber service experience, and incentivizing automated payment methods.

## Recommendations

- **Promote Long-Term Contracts:**  
Encourage customers to shift from month-to-month plans to **one-year or two-year contracts** by offering discounts, loyalty benefits, or bundled incentives, as long-term contracts are associated with significantly lower churn percentages.
- **Improve Fiber Optic Service Experience:**  
Since **Fiber Optic users exhibit the highest churn percentage**, the company should evaluate pricing strategies, service reliability, and customer support quality for fiber plans to address customer dissatisfaction.
- **Upsell Security and Support Services:**  
Actively promote **OnlineSecurity, TechSupport, and DeviceProtection services**, especially to new and high-risk customers, as these services are strongly linked to improved customer retention.
- **Encourage Automated Payment Methods:**  
Provide incentives such as cashback or bill discounts to customers who switch from **Electronic Check payments to automated payment methods** (credit card or bank transfer), reducing churn driven by payment-related friction.
- **Leverage Service Bundling Strategies:**  
Introduce attractive **bundle packages** combining phone, internet, and streaming services to increase customer engagement and reduce churn through higher service dependency.
- **Focus on Early-Tenure Customer Engagement:**  
Implement targeted onboarding and support programs for customers in their **initial tenure period**, as early-stage customers show higher churn risk, making early engagement critical for long-term retention.