Executive Summary: Telco Customer Churn Analysis

This analysis explores a dataset of a telecommunications company's customers to identify key factors contributing to customer churn. The goal is to provide a comprehensive overview of the churn landscape and pinpoint specific customer segments at high risk of leaving the company, with the ultimate aim of improving customer retention strategies.

Key Findings and Detailed Analysis

Overall Churn Rate and Demographic Insights

The analysis reveals a significant churn rate, with approximately **26.54%** (1,869 customers) of the customer base having churned. The remaining **73.46%** (5,174 customers) have not.

- **Gender and Churn**: The data shows a near-equal distribution of churn between genders, with male and female customers having very similar churn rates. This suggests that gender is not a significant predictor of churn for this company.
- **Senior Citizens**: A comparative analysis of senior citizens versus non-senior citizens reveals a notable difference. Customers who are senior citizens have a higher churn rate compared to those who are not. The churn rate for senior citizens is approximately **41.7%**, whereas the churn rate for non-senior citizens is **23.6%**. This indicates that the senior citizen demographic may be a particularly vulnerable segment that requires targeted retention efforts.

Service Usage and Contract-Based Churn

The type of services and contract a customer has are strong indicators of churn. The data highlights a clear trend where certain service combinations and contract types correlate with higher churn probabilities.

- **Contract Type**: The contract duration is the most powerful predictor of churn in this dataset.
  - **Month-to-month contracts**: The vast majority of customers who churned were on a month-to-month contract. Out of the 3,875 customers with a month-to-month contract, **43.3%** have churned.
  - **One-year and Two-year contracts**: Churn rates for these longer-term contracts are significantly lower. Only **11.3%** of one-year contract customers and a mere **2.8%** of two-year contract customers have churned. This suggests that encouraging customers to commit to longer-term plans could drastically improve retention.

- **Tenure**: Customer tenure is another critical factor. The analysis shows a strong correlation between shorter tenure and higher churn.
  - **New Customers**: Churn is most concentrated among new customers, particularly those who have been with the company for only 1 to 2 months.
  - **Long-term Customers**: Customers with longer tenures (e.g., 60 months or more) are highly likely to be retained, with a very low churn rate in this segment.
- **Payment Method**: The choice of payment method is also a significant indicator.
  - **Electronic Checks**: Customers who use electronic checks as their payment method are most likely to churn. **45.3%** of customers who pay via electronic check have churned, making this the highest churn rate among all payment methods.
  - **Other Methods**: Other payment methods, including mailed checks, bank transfers, and credit cards, have much lower churn rates.
- **Service Subscriptions**: Examining the services customers subscribe to provides additional insights:
  - **InternetService**: Customers with Fiber Optic service have a higher churn rate (41.9%) compared to those with DSL (18.9%).
  - **OnlineSecurity & TechSupport**: Customers without Online Security and Tech Support services are more likely to churn, indicating these services may help build customer loyalty and reduce churn.

Conclusion

The analysis clearly identifies several high-risk segments for churn:

- Customers on **month-to-month contracts**.
- **New customers** with very short tenures.
- Customers who pay with **electronic checks**.
- **Senior citizens**.
- Customers with certain service combinations, such as **Fiber Optic internet without Online Security or Tech Support**.

To effectively combat churn, the company should focus on developing targeted strategies for these segments, including offering incentives to migrate to longer-term contracts, improving the onboarding experience for new customers, and promoting high-retention services like Online Security and Tech Support.