

Telco Customer Churn Analysis

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Telco Customer Churn Analysis Report

Introduction:

Customer churn is a critical challenge faced by many telecom companies. Understanding why customers leave can help businesses devise effective retention strategies. This analysis aims to identify key factors influencing customer churn in a telecom company by using data exploration and visualization techniques. The data was processed and analyzed to gain insights into customer behavior and identify patterns related to customer retention and attrition.

Data Preprocessing:

The dataset used for this analysis included customer information such as demographics, contract details, service usage, and payment methods. Before delving into the analysis, the following preprocessing steps were undertaken:

1. **Handling Missing Values:** Empty strings in the `TotalCharges` column were replaced with zeros, and the column was converted to a float type for accurate numerical analysis. This transformation was necessary to handle inconsistencies in the data.
2. **Categorical Transformation:** The `SeniorCitizen` column was originally represented with numerical values (0 or 1). It was transformed into categorical values ("Yes" or "No") for easier interpretation and visualization.

Exploratory Data Analysis (EDA)

The analysis began with an exploratory approach to understand the distribution of the data and the factors contributing to customer churn. Here are the key findings:

1. **Overall Churn Rate:** From the pie chart generated, it was observed that 73.46% of the customers have churned. This churn rate is cumulative, representing the

overall churn observed during the analyzed period. This high churn rate highlights the need to explore deeper to understand the driving factors behind this behavior.

2. **Impact of Demographic Factors Senior Citizens:** The analysis revealed that senior citizens have a higher churn rate compared to non-senior customers. The generated comparative bar chart illustrated that senior citizens are more likely to discontinue services, indicating that age might play a significant role in churn behavior.

3. **Contract Type and Churn:**

- **Contract Duration:** One of the most significant findings was related to the type of contract customers had. The analysis found that customers with “month-to-month contracts” had a substantially higher churn rate compared to those with longer-term contracts, such as one-year or two-year contracts. This suggests that customers with more flexible, short-term commitments are more likely to switch providers.
- **Insights for Retention:** Encouraging customers to switch to longer-term contracts could potentially reduce churn rates. Offering incentives such as discounts or value-added services for annual contracts could be effective.

4. **Internet Service Type:**

- **Service Type Matters:** The type of internet service subscribed to also influenced customer churn. Customers using ****fiber optic**** services showed a higher churn rate compared to those using DSL or no internet services. This could be due to service quality issues or pricing concerns related to fiber optic services.
- **Actionable Strategy:** Improving the quality of fiber optic services or adjusting pricing strategies could help in retaining these customers.

5. **Payment Method and Churn Behavior:**

- **Payment Convenience:** The payment method was another critical factor in determining customer churn. Customers using “electronic checks” showed a noticeably higher churn rate compared to those using other methods like credit cards or bank transfers. This suggests that customers may find electronic checks less convenient or reliable.

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- **Recommendation:** Introducing more user-friendly payment options and promoting automatic payments could help reduce the churn rate among these customers. Providing incentives for adopting automated payment methods might also be beneficial.

Visual Insights

Several charts and graphs were created to visualize these findings, making it easier to identify the key factors affecting churn:

- **Pie Chart for Churn Distribution:** Highlighted the overall proportion of customers who have churned versus those who have stayed.
- **Bar Charts for Comparative Analysis:** Displayed churn rates among different demographics, such as senior citizens, contract types, and payment methods, allowing for clear comparisons and actionable insights.
- **Line Charts for Trends: Examined** trends in customer behavior over time, identifying any seasonal or recurring patterns that could impact retention strategies.

Conclusion and Recommendations

The analysis identified several key factors that influence customer churn in the telecom company. The most significant findings include the impact of contract type, payment method, and demographic factors like age. Based on these insights, the following recommendations are proposed:

1. **Encourage Long-Term Contracts:** Offer discounts or other incentives to customers who switch from month-to-month to annual contracts. Providing value-added services, such as exclusive benefits or dedicated support for long-term subscribers, could further enhance retention and reduce the high churn rate among short-term contract users.
2. **Improve Fiber Optic Service Quality:** Address any service quality issues related to fiber optic connections, such as frequent downtimes or speed inconsistencies,

and consider adjusting pricing to make it more competitive. Providing additional customer support or guarantees for fiber optic users could also help in reducing churn.

3. **Promote Convenient Payment Methods:** Introduce incentives for using credit cards or bank transfers instead of electronic checks to make payments more convenient and reduce churn.
4. **Targeted Customer Support:** Provide specialized support and targeted retention campaigns for high-risk groups such as senior citizens and those on month-to-month contracts.

By implementing these strategies, the company can aim to improve customer satisfaction and reduce overall churn, ultimately leading to better financial performance and customer loyalty.

THE END

