Customer Churn Analysis for Telecom Company

Data Analysis & Business Insights Report

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Tools Used: Excel (Pivot Tables, Power Pivot, Dashboarding)

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The original dataset was gotten from Kaggle, containing 7043 rows and 21 columns.

I checked for duplicate values and non was found, I checked for blank values and 11 blank cells were found in the 'totalCharges' column. This is linked to he fact that these cells belong to customers who haven't started a tenure with the company, so instead of replacing the empty cells with 0 or numeric value which would interrupt the column integrity, I resorted to leave those blank cells as they were, to avoid watering down averages or messing with data consistency.
I ensured accurate datatypes for each columns of the dataset.
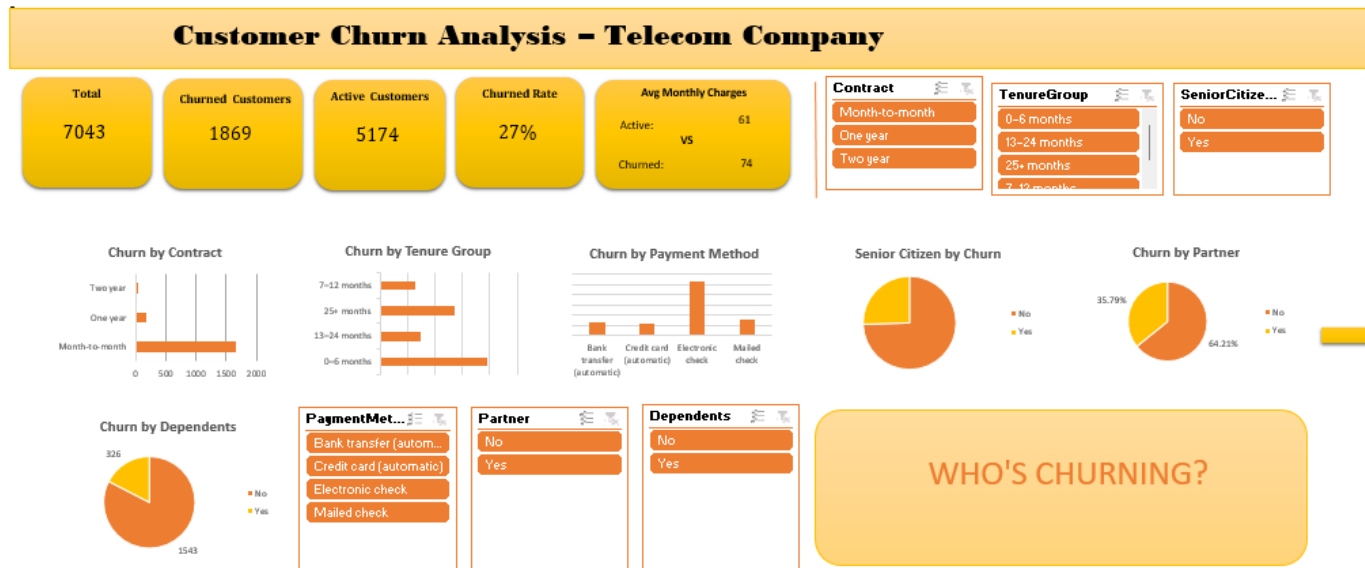
Columns the dataset contained before Modification

customerID, gender, SeniorCitizen,Partner, Dependents, tenure, PhoneService, MultipleLines, InternetService, OnlineSecurity, OnlineBackup, DeviceProtection, TechSupport, StreamingTV, StreamingMovies, Contract, PaperlessBilling, PaymentMethod, MonthlyCharges, TotalCharges, Churn.

Columns the dataset contained after Modification

customerID, gender, SeniorCitizen, SeniorCitizenValue, Partner, Dependents, tenure, TenureGroup, PhoneService, MultipleLines, InternetService, OnlineSecurity, OnlineBackup, DeviceProtection, TechSupport, StreamingTV, StreamingMovies, Contract, PaperlessBilling, PaymentMethod, MonthlyCharges, TotalCharges, Churn, ChurnValue.

Three more columns were added to the original dataset, 'TenureGroup', 'SeniorCitizenValue', and 'ChurnValue'. The 'Tenure' values in the column were categorized into four categories, '0-6months', '13-24months', '25+months', '7-12months' and assigned to the new column 'TenureGroup'. This was done with the use of *Nested If function* in the 2016 excel; ' *=IF([@tenure]<=6,"0–6 months", IF([@tenure]<=12,"7–12 months", IF([@tenure]<=24,"13–24 months","25+ months")))*'. The senior Citizen value was added, to give the binary value in the 'SeniorCitizen' column categorical data; 'Yes' or 'No' instead of Binary, '1 or 2' and the reverse happens for 'ChrunValue'. IN total These are the columns I worked with.

Analytic Dashboard Report

In this analysis, we are trying to answer 3 questions in total in order to know we would handle reduction in churn rate;

1. Who is churning?
2. Why are they churning?
3. At what point do they leave?

From the dashboard above we can see that:

1. Telecom had a total of 7,043 customer
2. Total number of churned customers as 1,869
3. Total active/non-churned customers as 5,174
4. Churn rate of 27%; and
5. Average monthly charges of active vs churned customers which is 61:74.
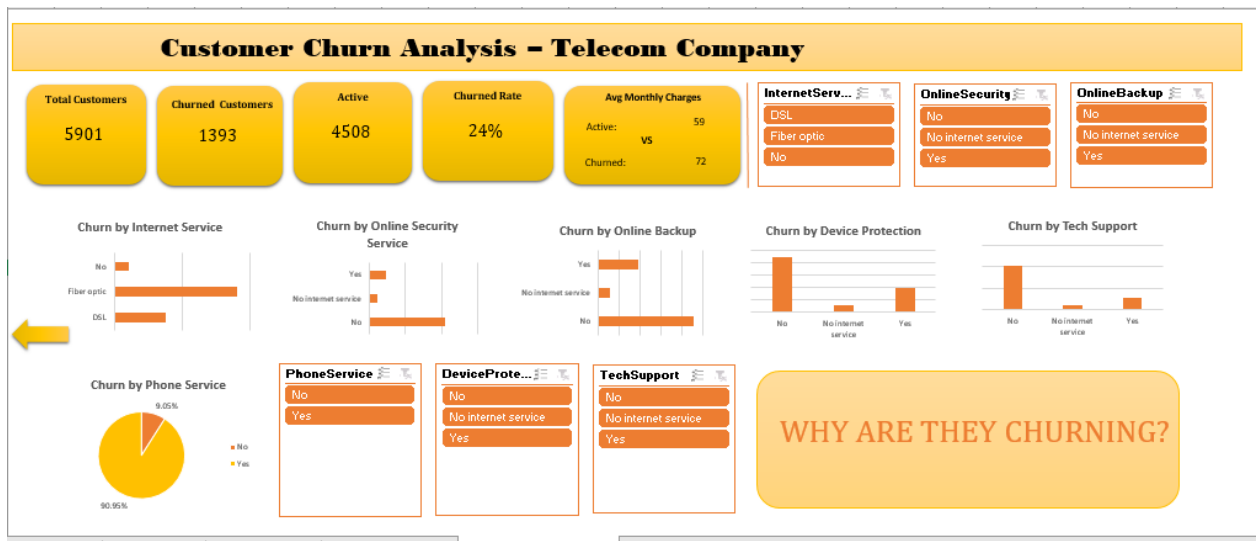
Who's Churning?

1. Those with the Month-month contract are churning
2. Those whose tenure is within 0-6month
3. Individuals who make use of the electronic checks have the highest churn
4. Non-senior citizens churn the most, but they are also significantly more than Senior Citizens. The ratio of senior citizens to non-senior citizens is 1:5, while the ratio of churned senior citizen to churned non-senior citizen is 1:3.
5. Individuals who don't have partners nor dependents also have high churns.

Customers most likely to churn are new, month-to-month subscribers with higher monthly charges and no household ties (no partner or dependents).

At What Point do They Churn?

1. The 0–6 months' tenure group has the highest churn count
2. Churn drops progressively as tenure increases
3. Customers with 12+ months tenure up until 25+ months are significantly more stable

In conclusion; Churn is highest within the first six months of subscription, indicating early-stage dissatisfaction. Churn decreases as tenure increases, but a secondary increase is observed among customers with over 25 months of tenure, suggesting late-stage churn possibly driven by contract renewal decisions or competitive alternatives.

Why are they Churning?

1. Fiber optic customers churn more, likely due to higher pricing and unmet performance expectations, especially when bundled support services are not adopted.
2. Customers without add-on services churn more
3. Average monthly charges are higher for churned customers overall.

In conclusion, despite higher churn among fiber optic customers, uptake of complementary services such as online security, backup, and tech support remains low. This suggests that customers may not perceive sufficient value or reliability in the fiber offering to justify adopting additional services.

Recommendations

1. Improve Early-Tenure Customer Retention

The analysis shows that customer churn is highest within the first six months of service, particularly among customers on month-to-month contracts. This suggests that many customers disengage before fully experiencing the value of the service.

Recommendation:
Introduce targeted onboarding and retention initiatives for customers within their first 3–6 months. This could include welcome incentives, usage guidance, proactive check-ins, or limited-time discounts aimed at increasing engagement early in the customer lifecycle.

Expected Impact:
Reducing early-stage churn can significantly improve overall retention and increase customer lifetime value.

2. Bundle and Promote Add-On Services for High-Risk Customers

Customers using fiber optic internet exhibit relatively higher churn rates, while adoption of add-on services such as online security, tech support, and device protection remains low among churned customers. This may point to unmet expectations regarding service reliability or support.

Recommendation:
Offer discounted or bundled add-on services to fiber optic customers, particularly during the early tenure period. Position these services as value-enhancing features that improve reliability, security, and customer experience rather than optional extras.

Expected Impact:
Increased adoption of add-on services may improve perceived value, reduce dissatisfaction, and lower churn among high-risk customer segments.

3. Encourage Migration from Month-to-Month to Longer Contracts

Customers on month-to-month contracts consistently show higher churn compared to those on one-year or two-year contracts, indicating lower commitment and higher switching behavior.

Recommendation:
Introduce incentives that encourage customers to transition from month-to-month plans to longer-term contracts, such as discounted rates, bonus features, or loyalty rewards tied to contract upgrades.

Expected Impact:
Longer contract commitments can stabilize revenue streams and reduce churn by increasing customer commitment.

4. Review Pricing and Value Perception for High-Charge Customers

The analysis indicates that churned customers tend to have higher monthly charges, suggesting potential price sensitivity or dissatisfaction with perceived value.

Recommendation:
Conduct further analysis to assess pricing competitiveness and customer value perception. Consider targeted pricing reviews or value-based messaging for customers with higher monthly charges to reinforce the benefits they receive relative to cost.

Expected Impact:
Improving price-to-value alignment can reduce churn driven by cost concerns and improve customer satisfaction.

5. Strengthen Fiber Optic Service Experience

Fiber optic customers show higher churn, which may point to service quality issues, performance expectations, or support gaps.

Recommendation:
Invest in improving fiber optic service reliability, performance monitoring, and customer support communication. Clear communication around service expectations and faster issue resolution may help reduce dissatisfaction among this segment.

Expected Impact:
Enhancing the fiber optic customer experience can improve retention among high-value customers and protect premium revenue streams.