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Introduction

We obtained this Telco dataset from Kaggle.com to perform a real-world data analysis simulation focused on customer churn. Using MySQL, we cleaned and standardized the dataset to ensure accuracy and consistency. Power BI was then employed to visualize the data and uncover meaningful insights.

Our primary goal was to analyze the factors influencing customer churn and identify strategies to minimize it based on data-driven findings. For this analysis, we utilized key columns including Customer ID, Partner status, Senior Citizen status, Contract type, Payment Method, Monthly Charges, and Total Charges.

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Dataset Overview

The Telco dataset contains 7,032 rows and 21 columns, covering, service usage, contract types, payment methods, and churn status.

Key columns include:

- » customerID
- » gender
- » SeniorCitizen
- » Partner
- » tenure
- » Contract
- » PaymentMethod
- » MonthlyCharges
- » TotalCharges
- » Churn

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Data Cleaning (in MySQL)

We used MySQL for the data cleaning and preparation process. Key steps included:

- » Ensured appropriate data types.
- » Removed duplicates: Used a Window Function (`ROW_NUMBER()`) to identify and delete duplicate entries based on `CustomerID`.
- » Standardized data: Used functions like `CONCAT()` and `SUBSTRING()` to clean and unify formatting in fields such as names or plan codes.
- » Checked for null values: Applied CASE statements to flag and analyze rows with missing or blank values, particularly in `TotalCharges`.

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INSIGHTS

- »» We have a total of 7,032 customers, out of which 1,869 have discontinued service, resulting in an overall churn rate of 26.58%.
- »» Customers with a month-to-month subscription have the highest churn rate at 42.71%, which is significantly higher compared to those with a two-year subscription, who have a churn rate of only 2.85%.
- »» Among internet service types, Fiber optic customers have a higher churn rate compared to DSL customers — with churn rates of approximately 41.89% and 19%, respectively.
- »» Senior citizens represent a smaller portion of the customer base with 1,142 customers, but they have a much higher churn rate of 41.68%, compared to non-senior customers who have a churn rate of 23.56% across 5,890 customers.
- »» Digging deeper, senior citizens tend to prefer month-to-month contracts, making up 54.65% of senior customers on this plan (totaling 807 customers). Conversely, senior citizens are less likely to choose longer contracts, with only 4.14% opting for a two-year contract.
- »» The payment method that is most likely to churn is Electronic check with a churn amount of 1,071 compared to credit card which had a total number 232 customers churning.
- »» Customers who are more likely to churn tend to pay around \$70/month, whereas those who stay longer typically pay closer to \$110/month. This may suggest that higher-paying customers are on better value plans or bundled packages.

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Recommendations (Based on the data)

Payment Modernization & Inclusivity

- »» Replace electronic checks with more reliable and modern options like PayPal, Google Pay, Apple Pay, and gift cards.
- »» Provide in-store payment options and digital payment workshops to assist less tech-savvy or traditional customers.
- »» Accept government assistance and EBT for qualifying customers to increase accessibility.

Loyalty & Special Plans

- »» Offer loyalty rewards (e.g., Christmas or New Year gift cards) to customers who have stayed with the company for over a year.
- »» Create special plans for veterans, retirees, and low-income seniors, with a secure verification process (age, salary, or documentation required).
- »» Launch family plans, especially tailored for single-parent households.

Proactive Customer Support

- »» Assign dedicated customer service reps to customer accounts, with regular check-ins (monthly or bi-monthly) to build loyalty and resolve issues early.
- »» Send surveys before contract renewal to capture feedback and prevent churn.
- »» Conduct monthly surveys to uncover pain points and service gaps.

Customer Engagement & Appreciation

- »» Send personalized messages on birthdays, holidays, and special occasions to help customers feel valued.

Service Education & Awareness

- »» Educate customers on the benefits of DSL internet through marketing campaigns and surveys.
- »» Create a retention team to support customers who may be considering switching services.

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Conclusion

The churn analysis revealed key customer segments at higher risk of leaving, particularly those on month-to-month contracts, using electronic checks, or among senior citizen demographics. By modernizing payment methods, improving support for traditional customers, and implementing personalized loyalty programs, the company can reduce churn and improve long-term customer satisfaction. These data-driven strategies are aimed at enhancing the overall customer experience while promoting service reliability and retention.