Reducing Customer Churn in Telecom: A Data-Driven Approach

Introduction

In the fast-paced and highly competitive world of telecommunications, customer churn is a key performance metric that directly impacts business growth and sustainability. Churn, or customer attrition, refers to the percentage of subscribers who stop using a company's services during a given period. For telco companies, churn means a loss of recurring revenue, higher acquisition costs, and increased marketing expenditure to replace lost customers.

In this project, I used the **IBM Telco Customer Churn** dataset to analyze churn patterns and provide actionable insights to help retain customers and reduce churn. Leveraging SQL, I explored demographic, service usage, and payment method data to uncover trends that can inform targeted retention strategies.

Dataset Overview

The dataset contains information about **7,043** customers from a fictional telco company in California. It covers various aspects such as:

- **Demographics** (age, gender, marital status),
- **Location** (city, state, and zip code),
- **Services** (phone and internet services, contract type),
- **Billing and Payment Information** (monthly charges, payment methods),
- **Customer Status** (whether a customer churned or not), and
- **Customer Feedback** (reasons for leaving).

Key Questions Explored

To guide the analysis, I structured the project around three main questions:

1. Which high-spending churned customers could benefit from personalized offers based on age, gender, and contract type?
2. What are the most common complaints or feedback from churned customers?
3. How does the payment method influence churn behavior?

Let's dive into the findings from each query.

Query 1: Targeting High-Spending Churned Customers

Objective

The goal was to identify the top five groups of churned customers with the highest average monthly charges and determine how personalized offers could be tailored based on age, gender, and contract type to improve retention.

SQL Query

sql
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```
SELECT age, gender, contract_type, AVG(monthly_charges) AS avg_monthly_charges
FROM customers
WHERE churn = 'Yes'
GROUP BY age, gender, contract_type
ORDER BY avg_monthly_charges DESC
LIMIT 5;
```

Results

The analysis revealed several high-spending churned customers:

- 53-year-old Male, One-Year Contract, $118.35/month
- 31-year-old Male, One-Year Contract, $117.80/month
- 76-year-old Female, Month-to-Month Contract, $117.45/month
- 25-year-old Male, Two-Year Contract, $116.20/month

Key Insights

- **One-Year Contract** customers aged between 31 to 53 represented a significant portion of the high-spending churners.
- **Month-to-Month Contract** customers, particularly older ones, also showed high monthly charges, which may indicate dissatisfaction with the lack of long-term value.
- **Younger customers** with high charges on two-year contracts also churned, suggesting they might need tech-focused incentives.

Recommendations

- **For One-Year Contracts**: Offer discounted two-year plans or incentives for upgrading services (e.g., faster internet).
- **For Month-to-Month Contracts**: Senior-focused plans could simplify billing and offer cost-saving options.
- **For Younger Customers on Two-Year Plans**: Add tech add-ons like streaming services or exclusive devices to appeal to tech-savvy customers.

Query 2: Understanding Feedback from Churned Customers

Objective

The second query aimed to analyze feedback from churned customers to identify common complaints and areas for improvement.

SQL Query

```sql
Copy code
SELECT feedback
FROM customer_feedback
WHERE churn = 'Yes';
```

Results

Common reasons for churn included:

- **Better devices and faster speeds** offered by competitors.
- **More data** provided by rival services.
- **Product dissatisfaction** and uncertainty about service quality.

Key Insights

Competitors' **superior offerings**, particularly in terms of devices, download speeds, and data, were the main reasons customers left. A few customers were also dissatisfied with the product quality or were unsure why they left, pointing to a potential disconnect between the company and its customers.

Recommendations

1. **Competitive Device Partnerships**: Collaborate with device manufacturers to offer high-quality devices as part of long-term contracts.
2. **Speed and Data Improvements**: Evaluate network capabilities and offer higher-tier packages with competitive pricing.

3. **Customer Engagement**: Implement feedback surveys to continuously monitor customer sentiment and address dissatisfaction early.

Query 3: Payment Methods and Their Influence on Churn

Objective

The final query focused on understanding how different payment methods affect customer churn rates.

SQL Query

```sql
Copy code
SELECT payment_method,
    COUNT(*) AS total_customers,
    SUM(CASE WHEN churn = 'Yes' THEN 1 ELSE 0 END) AS churned_customers,
    (SUM(CASE WHEN churn = 'Yes' THEN 1 ELSE 0 END) / COUNT(*)) * 100 AS churn_rate
FROM customers
GROUP BY payment_method;
```

Results

- **Mailed Checks**: Churn rate of 36.88%
- **Bank Withdrawals**: Churn rate of 34.00%
- **Credit Card Payments**: Churn rate of 14.48%

Key Insights

Customers using **mailed checks** had the highest churn rate, possibly due to the inconvenience and slower processing times. In contrast, **credit card users** had the lowest churn, suggesting they preferred the ease and security of this payment method.

Recommendations

- **Incentivize Electronic Payments**: Offer discounts or loyalty points for customers who switch from mailed checks or bank withdrawals to automated or credit card payments.
- **Streamline Payment Processes**: Improve the efficiency and clarity of mailed check payments and bank withdrawals to reduce customer dissatisfaction.

Conclusion and Recommendations

This analysis identified several actionable strategies for reducing customer churn in the telecommunications sector:

1. **Personalized Offers**: Tailor retention plans based on customer demographics, such as offering tech-focused deals to younger customers or simplified plans for older ones.
2. **Competing with Rivals**: Stay competitive by enhancing device offerings, data packages, and network speeds.
3. **Improving Payment Methods**: Promote the convenience and rewards of credit card payments and improve experiences for those using mailed checks or bank withdrawals.

By leveraging these insights, the telco company can reduce churn rates, foster customer loyalty, and enhance its long-term success.

Tools Used

- **MySQL Workbench**: For data querying and analysis.
- **IBM Telco Customer Churn Dataset**: Provided the data for uncovering valuable customer insights.