Customer Churn Analysis Using SQL & Power BI

Churn in the Telecommunications Industry

Churn is a significant problem that costs telecommunications companies billions of dollars through lost revenue. Now that the market is more mature, the only way for a company to grow is to take their competitors' customers. This issue combined with the greater choice that consumers have gained means that any adverse touch point with a consumer can result in a lost customer.

"Churn rate (sometimes called attrition rate), in its broadest sense, is a measure of the number of individuals or items moving out of a collective group over a specific period of time" = Customer Leaving. **Reducing the churn rate** leads to increased customer lifetime value and profits for businesses through repeat purchases and referrals.

Project Objective

The challenge is to analyze this dataset using data analytics techniques and uncover insights that can help the company understand the drivers of churn and take proactive measures to retain customers.

Problem Statements

1. The problem at hand is to analyze **customer churn** for a telecommunications company.
2. The company is experiencing a high rate of customer churn, resulting in significant **revenue loss**.
3. The management wants to identify the **key factors contributing** to customer churn and develop strategies to reduce churn rate and increase customer retention.
4. The dataset provided includes information about customers, such as demographics, service usage, contract details, and customer churn status.

Data Description

- The dataset is in csv format.
- Dataset contains 500 rows and 21 columns.
- There are no missing values for the provided input dataset.
- Churn is the variable which notifies whether a particular customer is churned or not.

Dataset

https://docs.google.com/spreadsheets/d/1qBtajJLC09R_QKaX2xk0ZFcaqFvM0uVN/edit#gid=1502245522

Project Strategy

I downloaded the dataset from Team Guvi and it contained information about customer demographics, subscription plans and account records for Maven Telecom. I performed all data preparation and analysis using SQL (MySQL), and all the SQL codes will be provided below. The visualisations and dashboard were designed with PowerBI respectively.

All important links to this project are included at the end of this article. The main steps for this project are,

- Data Cleaning and Preparation
- Exploratory Data Analysis
- Building the Ideal Churn Profile
- Data Insights
- Customer Retention Strategies
- Data Visualisation using Power BI Dashboard

Data Cleaning and Preparation

There are bound to be null values in this dataset because all customers have unique combinations of subscription preferences. Therefore, the presence of null values in my analysis is a deliberate and informed decision that allows me to provide a more complete understanding of the customer base.

I checked for duplicate values in the unique key (Customer_ID) and found none.

Total Customers 500, Churned Customers 105, Churn Rate 21%,

churned_customers_count	total_customers	churn_rate_percentage
105	500	21.0000

Total Revenue,

total_revenue
261591.59

The total revenue lost due to churned customers,

total_lost_revenue
56781.64999999999

- The revenue lost percentage due to churned customer is **21.7%**
- The average age of churned customers is **50**.
- There are **56** churned customers from monthly contract type and **49** churned customers from yearly contract type.

At the end of this report, I attached an SQL file with additional queries for further analysis.

The key churn indicators are,

- **Contract Type**: 53% of churned customers were on the month-to-month contract
- **Tech Support**: 52% of churners did not have premium tech support
- **Internet Services:** 56% of churners used Fiber Optic internet service.

Building the ideal churn customer profile,

It is a simple churn profile using the key churn indicators I discussed in previous sections, and the churn demographic results below:

- **33%** of churned customers are **above 60** years old
- **57%** of churned customers are **Female**
- **51%** of churned customers are **Single**
- **71%** of churned customers have **Dependents** and 29% of churned customers have **No dependents** in their household.

Insights

The telecom company has **105** churned customers and **21%** churned customer of the total customers. The top 3 reasons for churn are competitors made better offers, competitors had better devices and attitude of support staff. The telecom company lost ~**$56781.6499,** making it the most expensive type of churn. The key indicators of churn are Monthly Contract, No Tech Support, Fiber Optic internet. And **56%** of churned customers used Fiber Optic Service and **44%** of churned customers used DSL Service.

Customer Retention Strategies

- **Loyalty Programs:** Since the top reason for churn is **competitors making better offers,** the company should implement different loyalty programs to retain their customers. For instance, they could reward customers on long-term contracts with discounted rates, free upgrades, or additional features.
- **Improve Customer Support:** Invest in training and development of support staff to ensure they provide excellent customer service. This could include regular coaching and feedback sessions and incentives for staff who receive positive customer feedback.
- **Make better devices:** Evaluate the features, performance, and pricing of your devices to ensure they are in line with market standards and demand.
- **Tech Support:** Since customers who did not have access to tech support were more likely to churn, the company should consider offering this service to all customers.
- **Improve Internet Service:** Invest in improving both your internet services offerings, like faster speeds, more stable connections, and better customer support for Fiber Optic and DSL service customers.
- **Engage High-Value Customers:** Prioritise engaging these customers to prevent them from leaving. Provide personalised offers, send targeted communications, and provide tech support to ensure these customers remain satisfied with their service.
- **After-Sales Service:** Schedule regular check-ins with customers to ensure they are still satisfied with their service. These check-ins could be in the form of surveys, phone calls, or email communications.

Additional Resources and References

This communicates to the reader that there are additional SQL queries and live Power BI dashboard included for their reference and encourages them to review the attached file for more detailed analysis.

https://github.com/Beingcharles/Guvi-Final-Capstone---Customer-Churn-Retention-Analysis

Thanks for Reading!