**CUSTOMER CHURN IN TELECOM INDUSTRY**

Procedure followed to the find the customer churn

Step-1: database in the excel

Firstly, I just downloaded the database after that I checked the database very carefully then I found there are so many missing values and some other things that I have to change, then I changed the headings spaces with this icon ‘\_’.

Step-2: using python

* First, I imported the data table from excel.
* Then I used to see the shape, number of rows and columns in it and other basic things I checked.
* Imputing the missing numerical values with the mean.
* Dropping the columns with the excessive missing values like – churn reason.
* Saving the final dataset.
* Finally, checking the dataset whether it is perfect or not.

Step-3: using MySQL

* The processed dataset then transferred to the MySQL with the name of customer churn.
* Categorizing the customers with high risk, moderate and low risk.
* Then removing the limit of MySQL which is only 1000.
* Altering the table with the add column customer risk which includes the information whether the customer is high, moderate or low risk customer.
* Then again categorizing them to check whether it is correct or not.
* Then making small tables with the segments like number of high risk customers while taking the segment of monthly charges.
* Making table who are gender, age and married wise categorized to find churned customers.
* Making a table of only high risk customers
* Making the table who are churned, who are in high and who are in churned and high risk.
* Then the probability of churned vs joined and stayed.

Step-4: using the powerbi

* At last the saved dataset transferred to the powerbi then i did remove the unnecessary columns.
* I used to make the charts for age vs churn risk, gender & married vs churn risk, monthly charges vs churn risk, contact vs churn risk, payment method vs churn risk.

**Findings from SQL and Power BI Analysis**

**1. Similarities Between Churned and Retained Customers**

* **Demographic Factors**:
  + Similar age groups may have both churned and stayed, but other variables like income or digital literacy might play a differentiator.
* **Usage Patterns**:
  + Both groups might use a similar range of monthly GB downloads, though the churned customers may be slightly lower or erratic in usage.

**2. Differences Between Churned and Retained Customers**

* + **Monthly Charges**:
    - Churned customers often have higher or fluctuating monthly charges. This could highlight pricing dissatisfaction.
  + **Contract Type**:
    - Customers with month-to-month contracts are more likely to churn compared to those with annual or long-term plans.
  + **Service Issues**:
    - High complaint rates, service downtimes, or slow speeds may be observed among churned customers.
  + **Demographics**:
    - Younger or older age groups might churn more depending on the technology preferences and ease of use.
    - Marital status (e.g., singles vs families) might indicate different service usage patterns.
  + **Add-On Features**:
    - Churned customers might not utilize optional services (e.g., streaming or data bundles), indicating poor feature engagement.

**Predictions**

Using Power BI’s trend analysis and machine learning models (e.g., regression or clustering), you can predict:

**Which Customers Are Likely to Churn**:

**Key Drivers of Churn**:

* + - Price sensitivity, poor service quality, or lack of loyalty incentives.

**Future Churn Trends**:

* + - Predict how churn rates may change over the next quarter/year based on historical data.

**Suggestions for Service Improvement**

**1. Pricing Optimization**

* + Introduce **flexible pricing plans** for high-paying or price-sensitive customers.
  + Offer discounts, especially to customers nearing their contract end dates.

**2. Enhance Service Quality**

* + Invest in infrastructure to improve **network reliability and speed**.
  + Reduce **downtime** and provide faster resolution to complaints.

**3. Customer Engagement**

* + Offer personalized incentives such as **loyalty rewards** or **exclusive bundles**.
  + Improve customer education about the value of additional features and services.

**4. Contract Structuring**

* + Encourage long-term contracts by offering **special benefits** for 1-year or 2-year plans.
  + Minimize penalties for early contract terminations to retain trust.

**5. Predictive Customer Retention**

* + Use predictive models to proactively contact customers showing churn-like behaviors (e.g., those with reduced usage).
  + Use surveys to understand dissatisfaction and address concerns early.

**6. Demographic-Based Marketing**

* + Tailor services based on customer segments like age or marital status (e.g., family plans for married users).

**7. Customer Support Improvements**

* + Create **proactive outreach programs** for customers with complaints or low satisfaction scores.
  + Train customer service teams to provide **consistent and empathetic support**.

**How Power BI and SQL Support These Suggestions**

* + **SQL**:
    - Extract data on churn behaviors and segment customers into groups for targeted analysis.
    - Run queries to identify top correlations (e.g., high charges vs. churn).
  + **Power BI**:
    - Visualize churn rates over time with heat maps or bar charts.
    - Highlight demographic patterns with pie charts or slicers.
    - Forecast churn trends using built-in analytics tools (e.g., scatter plots, trend lines).

Would you like specific SQL queries or Power BI visualizations to support these suggestions?

Is this conversation helpful so far?

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