**Reflection Paper: Telecommunication’s Churn Data**

This paper aims to show data analytics by using the customer churn rate for the telecommunication industry. I will be performing this analysis by utilising information provided by the project and from an external source downloaded from Kaggle. These analyses will be performed by understanding the raw data, creating dimensions, and creating visualisations that will provide business stakeholders insights into how to decrease the churn rate and increase market utilisation, leading to high profits.

The dashboards in Tableau are designed to answer specific questions laid out in the associated data dictionary. Is the data analysed to identify trends related to the churn rate of customers between gender? Is there a relationship between the location and the price of the services? Is there a correlation between customers’ tenure and monthly charges? The data is also compared to an external dataset to provide a baseline and secondary perspective. By understanding the laid out questions, the company will gain critical insight into how to increase customer loyalty, decrease the churn rate and increase the capitalisation of the telecommunication market.

The external data set was sourced from the Kaggle website with a couple of things in mind. It must be sourced from a creditable site to ensure the stakeholders accept the analysis. It must have little to no null values, which will decrease calculation errors.

The following steps were taken to clean and prepare the data for the analysis:

1. Create a ‘CaseOrder’ index on the churn dataset.
   1. Open Postgre, then find the ‘Customer’ table under Schemas\public\tables
   2. Right-click on the ‘Customer’ table then ‘Create’ > ‘Index.’
   3. Name it as ‘CaseOrder’, then under the definition, select ‘Unique.’
2. Connect Tableau with Postgres to load the ‘customer’ and ‘location’ table
   1. Click on ‘Data’, then ‘New Data Source’, then select ‘Postgres SQL.’
   2. Load the lab provided credentials to authenticate the access to the Postgres
   3. Click on the ‘Data Souce’ on the bottom left of the Tableau
   4. Use the custom SQL script to join the ‘customer’ and ‘location’ table
3. Load the external dataset to Tableau from a CSV file using the import feature.
   1. Click on ‘Data’, then ‘New Data Source’, then select ‘Text File.’
   2. Then locate the ‘Telco-Customer-Churn’ under the ‘Download’ library.
   3. Join the Churn and the CSV dataset using the drag and drop feature on the ‘customer.churn’ and ‘Telco-customer-churn.chrun ext’
4. Click on the churn dataset to create an alias for the churn column on both data sets.
   1. ‘No’ changed to ‘Stayed.’
   2. ‘Yes’ to ‘Left’
5. Sort all the numeric columns that were used for analysis from A to Z to validate if there are any null values.

The following steps summarise how a dashboard can be created (Tableau, 2022):

1. Create a new dashboard by selecting ‘Dashboard’ and then ‘New Dashboard’ from the top menu.
2. Again, click ‘Dashboard’ from the top menu, then ‘Show Title’ to enable the title.
3. Replace the temporary ‘Dashboard’ name with ‘﻿Executive Dashboard’.
4. Then add the previously created ‘Worksheet’ from the sheet section.
5. Select all the sheets that are needed for the new dashboard.
6. Update the title of each worksheet that was added.
7. Ensure the filter is available in the ‘Category Menu’ by hovering over a newly created worksheet and selecting ‘Use as filter’.
8. Orient the newly added sheets to best suit storytelling.

My primary audiences are functional leads, managers, and department heads of telecom organisations. To keep the audience engaged and ensure essential points are understood, anything that could be ambiguous was redacted from the visualisation. Simple graphic elements like bar charts or line charts with text, colour and shapes were added to provide additional context (Tableau, 2022).

The ‘Executive Dashboard’ provides the following data analysis for the stakeholders to review and make adequate decisions.

1. In general, customers who churned paid a $199 a month charge, which is $30 a month higher than those who stayed. Additionally, the customer's location plays a role in monthly charges. On average, those who lived in Colorado paid $215 compared to those in South Carolina who paid $173. This means that the states with higher monthly charges tend to have a high churn rate. The marketing team should use this to position the company as a leader in providing services at an affordable price to decrease the churn rate.

2. There is a positive correlation between internet bandwidth used by the customers and the duration of their stay. The internet service is highly requested compared to other services like providing tablets. This elaborates that the company needs to prioritise services that depend on the internet. These include streaming movies, payment methods, online security and online backup, which should focus on companies' R&D and the marketing department to keep their customers from leaving.

3. The company also needs to work with their marketing department to create advertisement programs that focus on campaigns to associate its brand name with internet related services like ‘stay connected’ and ‘always online’. This will provide awareness in the sector and expand its market utilisation.

4. The above analysis ensures there is no need for the customer to look around when the company can provide all the needed services; it will increase brand loyalty and decrease the churn rate.

There are a couple of limitations that I would like to highlight. First, we do not have enough data points to come to an absolute decision. Second, before making any decision, the stakeholders must ensure the validity of the data. Lastly, each suggestion should be piloted to ensure positive feedback.

Bibliography:

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