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D210 – Part 3: Reflection Paper: Telecom Churn Data Analysis

The Telecom Data Analysis is to gather and visualize the identifiable actionable insights from the telecommunications organization as well as an additional data set. Part of the analysis is to use storytelling methods to effectively communicate the information so that all audiences can gain insights. The data set provided consists of client information pertaining to clients experiencing churn. The additional dataset provides demographic information of clients which helps the user or executive gather further knowledge to use in the decision-making process. The datasets were integrated by applying the “Customer ID” , found in the data set provided (churn\_clean), and inserting it into the additional data set (churn\_modeling). This field was now able to be used as a unique key identifier which allowed variables such as ”State” , ”Gender” , ”Contract” , ”Churn”, “Area”, “Estimated Salary”, and “Age Group” to be analyzed thoroughly for insights that can be identified easier through visualizations. The goal is to identify which clients are leaving, create visualizations that display the data effectively, and to suggest a potential opportunity to retain clients. We will now discuss the functionality of the dashboards.

The purpose and function of the “Executive Dashboard” is to demonstrate who the most profitable clients are as well as to indicate which clients are at highest risk of leaving the company(Churning). The dashboard first starts with emphasizing the company’s current churn rate which is **26.5%**. Right below the rate is a data representation of the overall Key Performance Indicators(KPI’s) for churned and loyal clients. The KPI displays the current state of business, indicating the total number of customers as well as percentage, the average monthly charge, and the total monthly revenue, each broken down by loyal and churned clients. Following below the KPI’S is a national heatmap indicating the total monthly revenue by state. Users/executives can filter specific states by using the drop-down menu as well as filtering for the ranking of monthly revenue. The graph next to the national heatmap is a visualization of the client breakdown by area.(Rural, Suburban, Urban) This lets users/executives get a deeper understanding of the areas of churn within each state.

Users/executives can manipulate the visualizations with the interactive controls located in the category menu (top-right) to discover relationships between different customer groups (churned or loyal; urban, rural, or suburban; month-to-month, one year, or two year). When the user applies the filter for only churned customers, the user can see the total number of churned clients in the KPI’s and in the heatmap they can see the number of churn clients per state. The client breakdown shows how many churned clients the company has by area, this information can be useful when trying to target retention for specific locations. With these filters applied, the user/executive can now determine where to start looking for opportunities of retention that can effectively reduce the rate of churn.

Now that the user can visualize the data and determine areas of opportunity, the user can now suggest a potential solution for the telecom company. The purpose and function of the “Opportunity for Retention” dashboard is to identify an area where there is churn that has financial impacts. This dashboard visualizes the top 15 states by churn vs average estimated salary. The graph indicates where the company has the top 15 churn clients by state and then broken down into areas such as rural, suburban, and urban. At a glance, this graph might seem intimidating, but when the filters are applied to a specific area; the user/executive can now have a better understanding of the churn data by state while looking at specific areas. This information lets users/executives know that these clients have a significant monetary value. With now knowing which prosperous clients are at risk of churning, executives can now make informed decisions on which areas to focus on to retain clients. For example, if the user applies the filter to only the urban area, the bar/line graph indicates that NY and PA have high number of churn but also their state’s average estimated salary is higher than total average. Users/executives now have informative insights to create decisions to retain these clients since they can potentially be financially beneficial. Next to the graph, we have a pie chart indicating the age group of the clients: young, adult, and senior. This information can be useful to determine product segmentation to improve customer retention.

With the executive dashboard visualizing the current churn rate and the opportunity for retention dashboard indicating the states and areas that have the most churn, users can create actions to improve the minimization of the churn rate. The dashboards were created to be accessible for individuals with colorblindness meaning that all visuals are using colorblind friendly palettes. By uploading the presentation into Tableau Public, this enables universal access to all audiences without the need for any installation.

Two elements that were implemented in the presentation to create an effective storytelling experience was by creating a question that the audience can relate to. Users and executives can comprehend the information within the data sets with these dashboards. By creating a goal that aligns with the objectives of a telecom company, the audience of this dashboard can be engaged with the information at hand. The example that was provided for an opportunity of retention gives the audience an idea on how to identify actionable insights.