**Representation and Reporting Reflection Paper**

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This reflection paper seeks to dive into the answers to the Who, What, and How questions Cole Nussbaumer Knaflic poses in his brilliant book, “Storytelling with Data” (Knaflic, 2016, p. 20-28) and reflects on my presentation and dashboard creation thought process. My dashboard is built from two data sets, the churn data set provided by WGU and a churn data set found on Kaggle.com which I have prepared. I analyzed both data sets, created visualizations and metrics, compared the data, and provided actionable recommendations based on the results of my findings. Although this was a mock presentation, the intended members of my presentation audience were three different types of executive stakeholders with similar, yet slightly different reporting needs. We will be talking about the idea of customer churn and how to reach our LGBTQ customers in the upcoming Pride month. Thank you for taking the time to review my work.

**Dashboard Alignment**

I chose the Churn Telecom Dataset for my dashboard. The main purpose of this dataset is to identify customers with a high risk of churn and provide recommendations based on data-driven insights to reduce the churn risk. It is imperative to remember “it costs 10 times more to acquire a new customer than to retain an existing one” (D210 Churn Data Consideration and Dictionary, 2020, p. 1). This drives our telecom company towards customer retention rather than just customer acquisition. The Telecomm Dashboard allows for stakeholders to view customer Churn by contract, gender, and age group across our organization and against our top competitor.

**Decision-Making Support & Interactive Controls for Stakeholders**

In the data dictionary provided, there are three executive leaders interested in customer retention: SVP of Customer Experience, EVP of Sales, and the Regional VPs. I designed the dashboard around the needs of these stakeholders.

***Senior Vice President of Customer Experience***

For the SVP of CE, I included data representations for an average customer Tenure metric in a vertical bar graph (AVG Tenure (Mo.)) and the average results of our customer surveys in a horizontal bar graph (Survey Responses). The SVP can explore how long the average customer stays at our company versus our top competitor and the specific areas we are lacking in based on direct customer feedback. There are also several interactive controls our SVP can utilize such as filters for Gender, Age groups, and Time Zone. These interactive controls allow our SVP to drill through to specific target groups or locations similar to my presentation, “Don’t ‘Churn Up’ for Pride Month” where we drilled through to Non-Binary customers age 18-24 years old.

***Executive Vice President of Sales***

For the EVP of Sales, I included data representations for the average churn rate metric in a vertical bar graph (AVG Churn Rate) and the Churn Rate by Contract Type in a stacked vertical bar graph (Churn by Contract). This allows the EVP to explore how our churn rate compares to our top competitor and which contract option contains the most churned customers. In our case, there are over 5,000 month-to-month customers, and 37% of these customers churned in the last month. There are also interactive controls designed specifically for our EVP such as in-depth tooltips in the “AVG Monthly Charge by TimeZone” heatmap and filters for Gender, Age group, and Time Zone. The in-depth tooltips allow our EVP to view how many customers contributed to the average monthly charge by time zone and contract type and how many customers did or did not churn for each contract type in the Churn by Contract stacked vertical bar graph.

***Regional Vice Presidents (Operations)***

Although our Regional VPs are also interested in all previous visualizations mentioned for their specific time zone/region, I included an additional operations-related graph for “Outages (per sec) Across the US” in a density geographic map. The Regional VPs can use the interactive control filter of Time Zone to focus on their specific regions. The density map allows the user to see exactly where the areas of concern are for their region at a glance. If needed, the user can view the exact zip code and its’ average outage per sec in the interactive tooltip.

**Additional Data Set Insights**

The additional data set I found was on Kaggle and it is a very similar Churn data set. There are no company details in the data set and it uses a different unique customer ID naming convention. It also provides different results for the same metrics in our Churn data set. In the Kaggle churn data, there are columns for customer tenure and churn. The Kaggle data set was perfect for a “top competitor” comparison against our churn data. I took the average customer tenure and churn and created two vertical bar graphs. These two metrics allowed us to view that our company has a higher average customer tenure and a lower average customer churn rate. These are two great results that demonstrate the health of our company against industry competitors. The Kaggle data set also includes contract types which can help further the analysis. However, I decided not to include those Kaggle contract types into the dashboard as I felt it would create too much noise in the data for all stakeholders.

**Colorblindness**

To avoid creating any issues for potential colorblind stakeholders, I utilized the Color Blindness Simulator tool on the following website: <https://www.color-blindness.com/coblis-color-blindness-simulator/>. This website allowed me to upload an image of my dashboard, filter through each type of colorblindness, and assess whether my desired insights can still be viewed by potential colorblind stakeholders. I made sure to only use 3 colors maximum with some slight variation for the density map. The colors I chose were Blue, Orange, and Light Gray. Blue-Orange-Light Gray is a great combination to avoid colorblind issues and was the standard choice in Tableau. I did tweak the colors to make the orange brighter and the blue slightly darker for a better contrast if a person has Monochromacy/Achromatopsia.

**Data Representations**

In my presentation, “Don’t ‘Churn Up’ for Pride Month’, I decided to focus on the average Churn Rates and Survey Responses of our month-to-month customers. Since it is pride month next month, I focused more on the Churn Rates and survey responses of our Non-Binary customers aged 18-24. The Churn Rates of Non-Binary month-to-month customers was 40% and there were three survey categories under the overall average for the 18-24 age group of those customers: Reliability, Evidence of Active Listening, and Options.

**Churn Rates of Non-Binary Month-To-Month Customers**

To support my findings through visualization, I chose to use a stacked vertical bar graph. stuck with my main two colors of blue and orange. However, I decided to use a different variation on color where I faded the two contracts that we did not fully need to view. This draws the viewer’s eyes automatically to the stacked vertical bar of Month-to-Month but allows them to still compare it to the other two contracts. Also, I took Gestalt’s principles of visual perception advice by using Enclosure through a black border around our desired stacked vertical bar (Knaflic, 2016, p. 77). This adds more attention to the desired bar like the faded color action. The difference between the month-to-month contract and each of the other contracts is very large. It helps show how much of a gap there is in average churn rates.

**Non-Binary, 18–24-year-old Customer Survey Responses**

Since there are eight different survey categories, I chose to use a horizontal bar graph with the average response value descending from greatest to least. The lowest three categories were highlighted with orange to automatically bring the viewer’s attention to them. An average line was provided to show how far those three categories were from the average. This helps identify the categories of opportunity and how far we are away from our standards (the average line). With this last visualization, I gave my recommendations on how to affect these categories with the upcoming pride month.

**Audience Analysis**

In my audience, the executive stakeholders want a high-level understanding of the data presented to them. I chose to focus on one main idea of Customer Churn. Executive level stakeholders understand the importance of customer churn regardless of the area of specialty within our company. I presented how our customer churn is slightly lower than our competitors. However, we can improve this by focusing on our month-to-month customers rather than other contract types. I made sure to identify how large of a gap there was between the average churn rate and our month-to-month customers. I also used repetition by repeating the word Churn to have our audience understand the main idea of my presentation. Although there was no audience in front of me, I stated that I will provide recommendations at the end of my presentation to help the “audience” understand the ebb and flow of the presentation. I made effective, clear visuals for any stakeholder to understand at a glance and referenced the visualizations when needed.

**Universal Access**

My presentation was designed for both auditory and visual stakeholders. As stated previously, I utilized repetition for the understanding of the main idea. Also, I stated the metrics and their differences aloud for any potentially blind stakeholders. I utilized the Color Blindness Simulator and only three colors to highlight and remove any potential issues for colorblind stakeholders. This combination of both auditory and visual presentation covers a wide range of potential stakeholders who would attend the presentation.

**Effective Storytelling**

I utilized a few storytelling elements depicted in Cole Nussbaumer Knaflic’s “Storytelling with Data”. One that stuck out to me was finding a subject that I care about which was why my presentation was themed for Pride and the LGBTQ. As a member of the LGBTQ, I know of opportunities to involve us more and things that I would personally love to see more of from companies. This was one of the main factors in my recommendations. Since evidence of active listening was one of our target categories, I recommended a path where marginalized voices can be heard. Another element of effective storytelling was my use of repetition. I made sure to say the words Churn and contract multiple times to engrain the ideas into the minds of our stakeholders. Not only did I repeat the main points, but I added to the point each time a slide was introduced. I wanted to build a story from the bottom up. Also, I made sure to create effective, clear visuals and titles which did not contain distractions and aligned with both the horizontal and vertical logic Knaflic spoke about in his book.

**Sources**

Knaflic, C. N. (2016). *Storytelling with data: a data visualization guide for business professionals*. John Wiley & Sons, Inc.

Western Governors University. (2020). *D210 Churn Data Consideration and Dictionary*.