Interactive Data Dashboard Navigation Instructions:

To navigate the dashboard, please use the following steps:

- In the bottom portion, click on the “Customer Story” tab
- At the top of the page, there are two options with directions on use below

The “An overview of gender diversity of the customer base” tab

- Each item in the visual representations can be moused over to provide greater detail
- Data can be filtered by state by using the dropdown menu labeled “State” next to the map on the right
- The map zoom in by placing the cursor inside the map window then clicking the “+” or “-“ buttons
- The map center can be moved by holding down the shift key while dragging the location of the map with the mouse

The “An overview of services offered and customer insights” tab

- Each item in the visual representations can be moused over to provide greater detail
- Data can be filtered by whether or not customers have churned by clicking the dropdown menu labeled “Churn” on the top right

Reflection Paper

Dashboard Alignment:

The purpose of my dashboard is to answer the question "Who is our customer?" I have given users the ability to look at the customer as a portion of a total population. I have also pointed out which services the customers are most inclined to use. The dashboard also highlights how long customers tend to stick with the company. Users can quickly filter the data to view just the segment of the customer base that they are interested in.

The data dictionary states that I have been tasked with analyzing the data set to create a data dashboard that will be used by leadership to explore the data and identify trends and compare key metrics. The dashboard creates a customized experience that will allow the audience the ability to focus on the data which is meaningful to them to make decisions that will impact the future of the organization.

Additional Data Set Insights:

The additional data set (source for additional data) allowed me to add the ability to determine how our customer base compares to the overall population both as a nation and by state. I specifically used it to break down the customers by gender, as that level of granularity is not available in the organization’s “Population” variable in the original data set. For example, using the additional data allows me to make the statement “Our customers comprise

approximately 0.01% of all females residing in California". This information may be beneficial to stakeholders when designing new promotions and services. One area where the additional data is lacking is for customers who identify as non-binary. While the organization is progressive in including that option when customers sign up, the census data used in the creation of the additional data set that I used only recognized male and female responses.

Decision Making Support:

One representation that would be useful to the executive leaders viewing the dashboard is the "Additional Services and Demographics" bar chart. This graphic provides a quick rundown of all of the options offered by the organization and how the customers utilize them. This information might help decision-makers determine which services are more popular and whether some services can be eliminated.

Another graphic that I found was incredibly telling is the "Tenure" chart. When using the churn filter set to "Yes", it shows that the majority of customers who churn do so within the first 10 months. Knowing this could help leaders examine methods that could key in on the reason why these customers choose to leave so quickly. The data dictionary explains that it costs ten times more for a company to acquire a new customer than to keep an existing one, therefore it would be in the company's best interest to investigate methods of enticing those newer customers to continue their services.

Interactive Controls:

On the "Gender Dashboard", I used a dropdown list filter control to allow the user to choose a state that they would like to look at the gender demographics for. There is also the option to view all states simultaneously. By changing the value for this filter, all charts on the dashboard will update to reflect their choice.

The "Services Dashboard" gives the user the option to view whether they want to view data based on if the customer has churned. The filter used is also a dropdown list with choices to view all data, only the data where the customer has churned, or only the data where the customer has not churned. The chosen value will filter all visuals on the dashboard.

Colorblindness:

In building my dashboard, whenever an item utilized color I chose the "Color Blind" palette in Tableau. I tried to vary the use of lighter and darker shades so that even if the dashboard was printed to black and white, a user would be able to tell which bucket the data belonged in. Upon completion, I ran each dashboard through the Coblis Color Blindness Simulator. By looking at the visuals through each filter, I was able to ensure that each band of data could be distinguished from all others.

Data Representations:

One data representation that I feel supports the story that I want to tell is the map. The story that I wanted to tell was to paint a picture of who our customers are. This not only includes what services that they subscribe to but where they are located. The map clearly shows where some of the larger pockets of customers reside, and I think could help prepare regional marketing budgets and campaigns. I also like that it can show the population broken down by gender as you move the mouse and hover over each dot for users who may not want to take the time to change the state in the dropdown filter.

The other representation that I feel supports the story of knowing our customers is the "Additional Services and Demographics" chart. Two metrics that stand out to me is that the majority of our customers use our phone service, and many are on month-to-month contracts. This tells me that we may want to work on converting more customers to one- or two-year contracts so they would be less likely to churn at that time.

Audience Analysis:

According to the information in the data dictionary, the users of the dashboard will range from those who will want to look at the overall picture down to those who may want to look at certain markets. My use of filters will allow those users to focus on their area of interest. For example, the Senior Vice President for Customer Experience will look at the data from the national level, while the Regional Vice Presidents (RVP) will only need to see data for particular states. Therefore, an RVP overseeing the west coast can choose to look specifically at the data for California and others in their area of responsibility.

The data analytics peers can use the dashboard to change levels of granularity to investigate the data at different levels and provide actionable recommendations.

Universal Access:

Tableau offers advice on ensuring that the visuals created with their program are accessible to all audiences. Some of the following recommended aspects (Tableau, 2020) were incorporated into my dashboards:

- Keep it simple – I chose to avoid dense graphics and included very few unnecessary axis marks that would make navigation with reader software more difficult.
- Additional text – I included captions and tool tips that contained all of the same information that is visualized with graphics.
- Titles and captions – Descriptive titles and captions were used where visually impaired users could benefit from them.

Also, I have given concise directions for navigation of the interactive elements to make the controls easy to find and less intimidating to use.

Effective Storytelling:

In the construction of my presentation, I first considered how to structure it with a clear beginning, middle, and end (Knaflic, 2015). In the beginning, I set up the plot and introduce conflict, stating the issues with customer churn and that 25% of the telecommunications customers have churned in the past month. This portion is meant to grab the attention of the audience. The middle part is where I discuss some of the important details of my analysis, as I try to paint the picture of who our customer is. This serves as the plot so that the audience can see the types of details that I considered during the analysis and give weight to the conclusion. The conclusion provides some key insights which can be used as a call to action, giving decision-makers something to focus their efforts on for future customer retention efforts.

Another effective storytelling element that I implemented was to keep it simple (Knaflic, 2015). I kept the slides fairly uncluttered with only the details that I felt were the most important. I did not want to burden the audience with complex language that might distract them from the intended meaning. For example in the background information section, I wanted the audience to connect to my expertise in data analysis. I felt that more details should be given about my military background since on paper it sounds more exciting, but felt it was best not to elaborate on the type of data analysis that I have done in other fields so aggregated them into a single bullet point.

RESOURCES

Knaflic, C. N. (2015). Storytelling with data: A data visualization guide for business professionals. John Wiley & Sons.

Tableau (2020, April). Best practices for designing accessible views. Retrieved February 07, 2021, from https://help.tableau.com/current/pro/desktop/en-us/accessibility_best_practice.htm