D210: Representation and Reporting

Part I: Interactive Data Dashboard

A. Interactive Data Dashboard

The dashboard can be viewed at the following link:
https://public.tableau.com/app/profile/ashley.munguia/viz/D210_dashboard/D210RepresentationReporting?publish=yes

A1. Data Sets

The dashboard combines data from two sources, one of which has been provided for the students and used in previous courses, the WGU Churn data set. The churn data set files can be downloaded using the following link:
https://access.wgu.edu/ASP3/aap/content/f9tjr8djg83jd8c3sdf8.zip

The other source was an external, public data set that was found from Kaggle. The link to the external source can be found following the link:
https://www.kaggle.com/datasets/ebruiserisobay/telcods

A2. Installation Instructions

The dashboard can be viewed at the link from part A. However, it can also be viewed by downloading Tableau Public. To download and install Tableau Public, follow the steps below:

1. Go to the Tableau Public website.
2. Click "Sign Up for Tableau Public" to create a Tableau account. Fill out the information it asks for (your first and last name, email address, and password).
3. Select whether you want to run Tableau through Windows or Mac to officially start the download.
4. Open the downloaded file. The installation wizard will open.
5. Follow the instructions the installation wizard directs you to do.
6. Once the installation is complete, it will automatically close.
7. Go to the search bar to find the Tableau app and open the application. Now it is ready to use to open my dashboard.

A3. Navigation Instructions

To navigate through the dashboard, there are five tabs located at the top under the "D210: Representation & Reporting" title. You can either click the left and right arrows to change slides or click the tab you would like to go to.

- Introduction: The title tab that includes a brief introduction about the purpose of the dashboard. In my Panopto presentation, I also introduce myself to the audience.

- Summary of Chosen Data Sets: This tab has the WGU and external KPIs to summarize the averages of factors that could be affecting customer churn. There is an interactive dashboard of the average monthly charges in each state of the United States for the WGU customers. The states can be filtered depending on what states should be included. The average monthly charge can also be adjusted on what minimum and maximum averages you would like to see.
- Personal Factors Affecting Monthly Charge: This tab includes four different visualizations of the average monthly charge versus the customer churn, contract, churn by senior citizens, and customers with dependents and a partner. There are bar graphs, a table, and pie chart to show this data.
- Online Factors Affecting Monthly Charge: This tab includes three different visualizations to show how the monthly charges are affected by online and streaming add-ons, in addition to the different internet services.
- Results & Recommendations: This last tab has a summary of my findings of every visualization in the presentation and recommendations that I would provide to the executive leaders to increase tenure and prevent customer churn.

Part II: Storytelling with Data

B. Panopto Video Link

Part III: Reflection Paper

C1. Dashboard Alignment

The WGU churn data set provides us with customer information in order to perform data analysis and give the company business insights based on that data. The purpose of this dashboard is to compare the given data to an external data set. We haven't done this yet in past courses but comparing two different telecommunication companies can give us an idea of what we can do to improve our company and retain customers based on the other company's numbers if they happen to be doing better.

C2. Additional Data Set Insights

The variables in the additional data set enhance the business insights by providing us with clarification on if there is a trend we should know about that is occurring through all telecommunication companies or if it is simply our telecommunication company that is lacking in a certain area. Therefore, I found an external data set that has the same columns (InternetService, StreamingTV, Tenure, etc.) or similarly named columns that I had to rename to match one another like Partners versus Marital to compare their data.

C3. Decision-Making Support

There is a visualization that shows the average monthly charge of the WGU company is more than two times the external company's monthly charges. However, the WGU tenure is four months longer than the external telecommunications company.

WGU's contracts don't affect the monthly charge and there is a slight difference in monthly charges for the contract of the external telecommunications company if they sign a longer contract. The difference is $6 less monthly if customers sign a two-year contract versus a month-to-month contract.

Executive leaders can use these visualizations to decide what they can do to keep customers around longer and to prevent them from leaving the company compared to another company and their data. In conclusion, based on the two visualizations above, monthly charge may be an issue even though the WGU tenure is a little longer than the other company despite the price. Perhaps customers who sign up for a two-year contract could get a cheaper deal since there isn't a difference. Compared to the other company that has a $6 difference between month-to-month and two-year contract, the company would not only lock down current customers longer, making the tenure increase, but would also increase the income because other customers would not want to miss out on a great deal.

C4. Interactive Controls

I put two different interactive controls on the visualization of the average monthly charges of each state in the United States. One interactive control is to adjust the minimum and maximum monthly charge to fit what the user is looking for and the other interactive control is to be able to select what states the user is wanting to include. Based on the visualization without adjusting the filters, the most expensive average monthly charge is in the state of Rhode Island, but the other northeast states have a variety of average monthly charges. Therefore, location may have an effect on the monthly charge.

C5. Colorblindness

Based on the tableau website, it is recommended to not use red, green, orange, and brown together because people with CVD see those colors as brown. It also lists a few combinations you can use for people with colorblindness including blue/orange, blue/red, and blue/brown. Hence why I used blue/orange in all of my visualizations (Shaffer 2016).

C6. Data Representations

The bar graph of Monthly Charge by Customer Churn indicates that the WGU company loses customers who pay an average of $199.30 monthly. This is $36.30 higher than the customers who stay with the WGU company. In comparison, the competitor pay $74.40 monthly if they churn and the customers who stay pay $61.30 monthly. The difference between these monthly charges are more than $100 monthly. I believe the WGU company may be overcharging their customers.

The theory of WGU overcharging is further proved in the graph of Monthly Charge by Streaming Add-ons. Customers with the competitor company who have both the streaming TV and movie add-on pay $41.80 less monthly than the customers with the WGU company with neither add-on.

C7. Audience Analysis

The data visualizations I made were simplistic and the executive leaders can easily follow along with the presentation. I tried to focus on the average monthly charge because customers tend to leave a company when they are getting charged too much and swap to a different company that has the same services. In this case, my theory seems to be correct.

C8. Universal Access

I designed my presentation to be universally accessible by all audiences by making every visualization straight to the point, simple, and I even included of summary in the last tab of what each graph's results mean. If any of the listeners miss what I explained during the presentation, they are able to see a shortened, straight forward recap. I also built my dashboard to be accessible for individuals with colorblindness by researching what specific color combinations I should and should not be using.

C9. Effective Storytelling

Two elements of effective storytelling that I implemented in my presentation was by including interactive features for my visualization and by making my presentation easy to navigate through. The interactive features are a fun way for the executives to follow along with while getting my point across. I made my presentation easy to navigate by naming all of my tabs exactly what is included in that tab. For example, if they wanted to go back to look more specifically into customers with dependents, they would know to go to the "Personal Factors" tab.

D. Sources

Shaffer, J. (2016, April 20). 5 tips on designing colorblind-friendly visualizations. Tableau. https://www.tableau.com/blog/examining-data-viz-rules-dont-use-red-green-together

E. Professional Communication