Scott Babcock

Western Governors University

2/8/2025

D210 Data Representation and Reporting

**A1, Interactive Dashboard**

* Company Churn Dashboard
  + A Tableau file is included in the submission.
  + For those who would like to access via the web, the link below will take you to the dashboard.
    - [WGU D210 Churn Dashboard | Tableau Public](https://public.tableau.com/app/profile/scott.babcock/viz/WGUD210ChurnDashboard_17390292284030/ChurnAnalysis?publish=yes)

**A2, Datasets**

* Datasets used in the analysis
  + Company churn data is included in the submission in the file named ‘churn\_clean.csv.'
  + Competitor churn data is included in the submission in the file named ‘churn\_competitor.csv’ and can also be accessed via Kaggle in the link below.
    - [Kaggle: Churn in Telecom dataset](https://www.kaggle.com/datasets/becksddf/churn-in-telecoms-dataset/data)

**A3, Instructions for Installation and Viewing**

* To access and use the Company Churn Dashboard, the user can do the following:
  + Download Tableau Public Desktop from the link below and follow the installation steps.
    - [**Download Tableau Public**](https://www.tableau.com/en-gb/products/desktop/download)
    - Once installed, open the Tableau file that was included in the submission.
      * Navigate to the Churn Analysis tab.
  + Use the link below to access the web dashboard; no installation is required.
    - [WGU D210 Churn Dashboard | Tableau Public](https://public.tableau.com/app/profile/scott.babcock/viz/WGUD210ChurnDashboard_17390292284030/ChurnAnalysis?publish=yes)

**A4, Instructions for Dashboard Navigation**

* Helper icons will provide overall dashboard instructions or insight into each visual.
  + Hover over each of the asterisk symbols (pictured below)
    - **A blue star of snowflake

      AI-generated content may be incorrect.**
* Four visuals are meant for interaction and will filter the other visuals.
  + Map
    - The map represents the company churn rate by state
    - Click a state on the map to filter the other visuals for data about the selected state
      * The ‘Churn Rate Comparison – Company vs Competitor’ is not included in the interactions
    - Clear the state selection by clicking the state a second time
  + Churn Rate Comparison – Company vs Competitor
    - This chart represents the company churn rate by state, compared to the competitor churn rate in the same state.
      * The dotted reference lines represent the overall churn rates for the company and its competitor.
    - Click a state bar to filter the other visuals for data about the selected state.
    - Clear the state selection by clicking the bar a second time
  + Churn Rate by Area Type
    - This chart represents the company churn rate by the area type of where the customer resides.
    - Click an area type bar to filter the other visuals for data about the selected area type.
      * The interactions do not include the 'Churn Rate Comparison – Company vs Competitor' chart.
    - Clear the area type selection by clicking the bar a second time
  + Churn Rate by Contract Type
    - This chart represents the company churn rate by the customer's contract type.
    - Click a contract type bar to filter the other visuals for data about the selected contract type.
      * The interactions do not include the 'Churn Rate Comparison – Company vs Competitor' chart.
    - Clear the contract type selection by clicking the bar a second time
* Four filters under the dashboard title can be used for additional data slicing and context: Gender, Marital Status, Internet Service Type and Streaming Customer.
  + Selections from the drop-downs will filter all visuals except for the 'Churn Rate Comparison – Company vs Competitor' chart.
  + There are two ways to clear the filters
    - Click the clear icon located on the top-right corner of the filter
    - Select the ‘All’ option in the drop-down.

**B, Panopto Link**

A Panopto recording was created to accompany the dashboard, found at the link below.

\*Insert link\*

**C1, Purpose and Function**

The dashboard's purpose is to compare and analyze the churn rate of customers across various demographic and geographic segments, as well as some of the customer characteristics. The dashboard sheds light on the monthly charges and bandwidth used by active and churned customers and can be sliced further by demographic and geographic information. The dashboard aligns with the executive team's needs, as it will help them assess pricing across states and identify key areas for customer retention.

**C2, Additional Dataset**

The complementary dataset used in this analysis was customer information from a Telecommunication industry competitor. The dataset provided the churn status of customers, monthly charges, and the state of residence. The overall churn rate of the competitor was calculated, which can be used as a benchmark for the company. It was further broken down by state to help identify where the company could improve. Customers' monthly charges were compared to determine how the company stacks up in terms of value.

**C3, Data Representations**

The churn rate by contract type bar chart is beneficial for executives. Customers on a month-to-month contract are churning at nearly three times the rate of customers on a one-year and two-year contract. Executives can use this information to develop strategies and promotions to help convert these customers into longer-term contracts, which will drive loyalty.

**A screenshot of a computer

AI-generated content may be incorrect.**

Another interesting data representation is the average monthly charge and bandwidth used in comparison for active and churned customers. The customers still active with the company have an average monthly charge of $163 compared to $199 for those who left the company. There should be some focus on why the customers leaving the company are paying over 20% more per month. The customers leaving the company are using much less data than those still active. Getting customers to engage more with product and service offerings could drive loyalty.

A screenshot of a computer

AI-generated content may be incorrect.

**C4, Interactive Controls**

An internet service type filter was added to the dashboard, allowing the user to slice the data for customers with DSL, fiber optic, or no internet service. When toggling through the options, customers with DSL internet service had a much higher churn rate than those with fiber optic or no internet service. This information can direct the executives to examine the DSL offering as it may not be performing as expected or is not priced correctly.

*Churn rate filtered to DSL internet type*

*A graph with blue squares

AI-generated content may be incorrect.*

*Churn rate filtered to Fiber Optic internet type*

*A blue and red square with black text

AI-generated content may be incorrect.*

*Churn rate filtered to no internet service.*

*A graph with blue squares

AI-generated content may be incorrect.*

The map was enabled to be used as a filter. When applying thematic shading to the states by churn rate, it was clear that Washington was a problem state. The area type bar chart filters to the Washington-specific statistics by clicking on the state. There is a much higher churn rate within rural areas in Washington than in suburban and urban areas. This location-specific information can help executives focus attention on problem areas.

A map of the united states with a red and blue rectangle

AI-generated content may be incorrect.

**C5, Color Accessibility**

It is critical to design accessible dashboards for people who cannot distinguish the full-color spectrum. Having a user be unable to see or interpret the charts defeats the purpose of creating the dashboard in the first place. High-contrasting colors were used in the visuals to avoid accessibility issues. Color scales ranging from dark blue to dark red will help users identify the differences, and scales or legends provide the meaning of the colors. Reference lines were used in one visual to help give context to any user. Tables of data also make the dashboard accessible to any user (Datadrive, 2020).

**C6, Story Telling**

The churn rate by contract type bar chart supports the message trying to be conveyed to the executive team. Customers on month-to-month contracts have churned at nearly three times the rate of customers on one-year or two-year contracts. These customers do not have much binding them to the company, and they will likely jump to a competitor if they can find a better deal or service. There should be a focus on how to convert these customers onto longer-term contracts.

A screenshot of a computer

AI-generated content may be incorrect.

The table with the average monthly charge and bandwidth used is another interesting visual that drives home the conveyed point. Active customers have a lower average monthly charge and use much more bandwidth than customers who have churned. Customers who are leaving the company may be finding better value with competition. Strategies could be implemented to get customers to engage with the services offered by the company, thus increasing bandwidth usage and driving loyalty.

A screenshot of a computer

AI-generated content may be incorrect.

**C7, Audience Analysis**

Knowing that the target audience consists of executives who each have specific needs helped drive the message in the presentation. One common theme among the executives was improving retention and understanding customer characteristics. The dashboard was designed to satisfy those needs. Comparisons of active and churned customers and geographic and demographic factors were included. A comparison of a telecommunication competitor can provide a benchmark for the company. The executives will be able to use this information to develop strategies and areas of focus.

**C8, Audience Accessibility**

While the dashboard is mainly intended to address the needs of executives, it is still helpful and accessible for anyone within the company and even users outside the company. The dashboard will help company employees understand information about their current and former customers. The visuals are easy to understand, and the interactivity can give the users multiple ways to slice the data for their needs. Insights gleaned from the dashboard may spark ideas for additional analysis. External users will still be able to understand the intent of the dashboard with the instructions provided and naming conventions for the visuals.

**C9, Effective Storytelling**

The data from the telecommunication competitor helped drive the point that pricing is an issue. The competitor is priced significantly under the company's price, resulting in a lower churn rate. The table concerning current and churned customers backs this up. Customers who have left the company were paying, on average, 20% more than customers still with the company.

Allowing the user to have overarching filters at the top of the dashboard helps craft a narrative. The internet service type filter is intended to illuminate potential issues with DSL customers. When selecting the DSL filter option, the user can see that the churn rate is much higher than the churn rate for fiber optic service and no internet service. This deserves a deeper dive; perhaps the DSL service is not up to standard, or the pricing is not competitive relative to the market.

**D, Sources**

Becks, David (n.d). *Churn in Telecom’s dataset*. Kaggle. Retrieved February 4, 2025, from <https://www.kaggle.com/datasets/becksddf/churn-in-telecoms-dataset/data>

Data Viz Canvas (July 4, 2022). *How to add an info button and instruction in Tableau dashboard* [YouTube video]. YouTube. <https://www.youtube.com/watch?v=dkv8HrvMr5a>

*How to create colorblind friendly dashboards* (May 30, 2020). Datadrive. Retrieved February 8, 2025, from <https://godatadrive.com/blog/2020/3/29/creating-colorblind-friendly-dashboards>