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**Performance Assessment for D210: Representation and Reporting  
Part 3: Reflection Paper**

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Performance Assessment for D210: Representation and Deporting – Part 3

## C1 – Purpose and Function

The scenario provided with the churn dataset indicates that the senior executives of a telecommunications company (which I will call Bigtel) understand how expensive it is to acquire new customers compared to keeping existing ones. The scenario further states that telecom companies in the US may experience churn rates of up to 25 percent annually. I hypothesize that Bigtel’s management already knew they had a severe churn problem before commissioning this work. However, knowing you have a problem and knowing where to begin working on solving the problem are two very different things. My dashboard and analysis aim to provide Bigtel’s leadership with tools and information to highlight facets of the customer base with the highest churn rates. With these insights, management can implement changes designed to keep existing customers happier and reduce the overall churn rate.

## C2 – External Data

I selected an open-source dataset to complement the extract from Bigtel’s Customer Relationship Management (CRM) system. The dataset, provided by Broadband Now’s Open Data Challenge, contains details on competitive telecommunication service availability and cost for each zip code in the United States. Using this data to augment our internal data allowed me to provide insight into how available competing services might be impacting our churn rate.

## C3 – Dashboard Visualizations

My dashboard contains several visualizations that can help executives zoom in on segments of customers and lines of business that are more closely correlated to customer churn. One of these is the Length of Service / Contract Type visualization. With this chart, viewers can see that the longer customers stay with Bigtel, the less likely they are to churn. In addition, the chart shows that customers on a contract rather than month-to-month are far less likely to churn at all tenures. These insights should inform management that churn might be improved by rewarding loyalty and promoting one- and two-year service agreements.

A graph of different colored bars

Description automatically generated with medium confidence

Figure 1 - Length of Service and Contract Type versus Churn Rate

Another helpful representation available on my dashboard is the Service Offering chart. With this tool, viewers can evaluate customer churn rates for each of Bigtel’s optional services. The current analysis shows that customers subscribing to Streaming TV or Streaming Movies are much more likely to churn than with other services. Again, further research is needed to identify why this is so.

A screenshot of a computer

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Figure 2 - Service Offering versus Churn

## C4 – Dashboard Controls

While the data analyst uses their experience to find the most relevant insights from the data, it is unrealistic to expect that no further discoveries can be made given the opportunity. So, it is best practice to provide interactive controls with which users can further filter and segment the data reflected on the dashboard. My dashboard offers several means by which viewers can “slice and dice” the data in hopes of focusing their efforts on improving customer churn.

First, I have consolidated categorical filters at the top of the dashboard. Locating these in one place makes it quick and easy for users to zero in on specific sub-groups among our customers.

A screenshot of a computer

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Figure 3 - Dashboard Filters

Another helpful control adjusts the Worst / Best Churn States visualization. This chart shows the top/bottom “n” states by churn rate. Viewers can change the slider to show more or fewer states on the chart.

A screenshot of a graph

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Figure 4 - Worst/Best States Slider

## C5 – Adapting to Colorblindness

As about 8% of men and 0.5% of women have some form of color vision deficiency (CVD), my dashboard must be designed to be accessible to all viewers, including those with CVD. (Shaffer, 2016) Following the best practices outlined in the Shaffer’s article, I chose color palettes for visualizations that did not use red and green together. Furthermore, I strove to choose color combinations that provide enough contrast and variation between light and dark to help further differentiate various visual elements. (Tableau, n.d.)

## C6 – Data Representations in Presentation

I selected the two visualizations described in [C3 – Dashboard Visualizations](#_C3_–_Dashboard) for my presentation to convey the key message of my data story. Each conveyed a different factor closely correlated to Bigtel’s most recently churned customers. As my aim in presenting this analysis was to drive steps to improve churn, each element in my story shared an insight from which action could be taken.

## C7 – Audience Analysis

The background information provided informed me that two corporate and several regional executives would attend. While all aim to increase customer satisfaction, each has a distinct focus. The SVP of Customer Experience is focused on increasing customer engagement and understanding customer behavior. The EVP of Sales is focused on ensuring that Bigtel offers the products and services customers want to purchase and will be thrilled with. Further, the EVP is curious about how regional differences affect customer satisfaction with our services. The Regional VPs are most interested in how local promotions might impact their regions.

## C8 – Accessible to All Audiences

To achieve the goal of democratizing data, visualizations must be made accessible to all viewers. My dashboard implements several elements designed to improve accessibility. As mentioned in [C5 – Adapting to Colorblindness](#_C5_–_Adapting), appropriate color palettes minimize hurdles for CVD viewers. Each visualization is labeled with an alternate text to help those viewing the dashboard with the assistance of screen reading technology. Viewers may have some degree of neurodivergence and become overwhelmed by a highly information-dense view. To help prevent this situation, the dashboard offers numerous filters and controls to reduce the volume of information presented in one view.

## C9 – Elements of Effective Storytelling

While the actual data analysis is critical to effecting data-driven improvements, if those analyses are not communicated effectively, it is unlikely that decision-makers will be motivated to act upon them. Many of us have sat through boring presentations where the speaker reads word-dense slides to the audience. Those walls of words were difficult to comprehend because they had excessive cognitive load. In other words, each slide required too much brain power for the recipient to understand quickly what message was intended. (Nussbaumer, 2015) I removed as much clutter as possible to combat this overload. The message I wanted to convey was simple; it did not require complex visualizations.

Another aspect of storytelling to which I paid close attention is narrative. Think of a movie. Without a logical narrative structure, the audience can lose the thread of what the movie intends to convey. In the same way, I structured the elements of my presentation so that they were to lead the audience along the path intended. (Nussbaumer, 2015) Much like following the waypoints on a GPS, each step in the presentation logically led to the next, hopefully bringing my audience to the desired conclusion.

## D – Cited Works

Nussbaumer, K. C. (2015). *Storytelling with data : A data visualization guide for business professionals.* John Wiley & Sons, Inc. Retrieved 08 24, 2024, from https://ebookcentral.proquest.com/lib/westerngovernors-ebooks/reader.action?docID=4187267&ppg=1

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