Reflection Paper: Understanding Data Representation and Reporting

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1. Alignment with Data Dictionary

My dashboard exists to provide executives with insights into customer behavior, specifically which factors most likely influence customer churn. The dashboard includes functionality to explore area-specific insights regarding customer count, monthly charge, churn rate, and bandwidth usage. This will allow executive leaders to make informed decisions more easily regarding reducing customer churn and increasing profitability.

2. Enhancing Insights with Additional Data

The variables in the `internet_session` dataset provide information regarding data transfer amounts, specifying upload and download rates. These usage patterns can be compared to those of the `churn` dataset to evaluate average usage rates and prepare service offerings accordingly. Specifically, the `internet_session` dataset shows by how much users download compared to upload. This information can guide executives in ensuring high upload speed availability. The bandwidth usage in this dataset can be compared with the churn dataset to detect customers at high risk of churn.

3. Data Representations for Decision-Making

The maps from slides 1 and 2 in the Tableau story show executives where our customers are located, how much they pay on average, their rates of churn, and how much bandwidth they use on average. All of this data is available to be viewed by specific location, be it state, county, city, or zip code.

The box plots in slide 4 show the correlation between bandwidth usage, monthly charge, tenure and churn. These visualizations make it easy to see where improvements can be made and where the company is missing retention opportunities.

4. Interactive Controls

The dashboard allows users to filter the map data by area: state, county, city, and/or zip code. The session analysis slide allows users to filter by user, data transfer type, and session break reason. The box plot slide also allows users to filter by state. Simple instructions for filtering are available on each of these slides.

5. Accessibility for Colorblindness

Specific color palettes were used that enable easy distinguishing of colors for those with color blindness. The heat maps use shades of blues, greens, purples, and browns that avoid red-green combinations and other colors that would otherwise be difficult to distinguish. The Session Analysis slide uses a turquoise, green, and yellow that make up a color blind accessible color palette.

6. Supporting the Story with Data Representations

The customer churn rate map shows that churn is a problem in our customer base across the country, but also highlights the areas with highest churn rates. The box plots give specifics on which factors most contribute to churn and what can be done to counteract the problem.

7. Audience Analysis Adaptation

The presentation was created to allow an audience of non-technical executives and laypeople to easily understand what is being portrayed. The visualizations used are straightforward and intuitive. Labels were used to convey complex information in a simple way.

8. Universal Access Design

I included instructions for filtering the data in each slide and both the text and graphics are intuitive and easy to read. Simple language was used in lieu of technical jargon.

9. Effective Storytelling Elements

The churn rate map poses the question of what is causing near 30% churn across our customer base. Investigating the various factors available in the `churn` dataset revealed three main factors that contribute to churn: bandwidth usage, monthly charge, and tenure. The influence of these three factors on churn was portrayed in box plots, enabling users to gain clear insights for making specific business recommendations. This approach engages the audience by focusing on one problem and providing a clear solution.

Sources

Divyanshu Kunwar. (2023). Internet Usage Analysis. Kaggle. Retrieved from
https://www.kaggle.com/datasets/divyanshukunwar/internet-usage-analysis?resource=download