D210 - Representation and Reporting

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Abstract
The telecommunications industry is an ever-evolving and increasingly technologically sophisticated industry and as Borje Ekholm once said, “The telecom industry reaches into every corner of our economies, societies, and private lives, and it is one of the greatest drivers of economic growth and human equality the world has ever seen”. We are currently on the cusp of a new communications revolution with the launch of 5G networks that will reach speeds and distances we never imagined possible.

Keywords
Tableau — Telecom — Churn

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Introduction

For accessibility and to simplify grading, this Assessment Essay is broken down into 9 subsections which correlates to the 9 sections listed on the grading rubric under Part 3: Reflection Essay.

1. Assessment

1.1 Purpose and Function

The assignment given for the Master of Science, Data Analyst study is to place yourself into the shoes of an analyst for a well-known telecom company that services customers in the United States. In this scenario, the business goal of the analysis is to study customer trends and patterns to gain an understanding of common characteristics in order to reduce churn and to predict customers at high risk of churn. The Executive Dashboard created for this study focuses on key metrics of customer churn highlighting key characteristics such as tenure, revenue generated, data consumption, and geolocation. This information is presented in an easy-to-read format to help shareholders and decision makers gain insight from customer patterns and make wise revenue-generating choices.

1.2 Additional Dataset

The supplementary Dataset is provided by IBM Cognos Analytics which is a fictional telcom company that provides home phone and Internet services to 7043 customers. The dataset indicates which customers have left, stayed, or signed up for their service. Multiple important demographics are included for each customer, as well as a Satisfaction Score, Churn Score, and Customer Lifetime Value (CLTV) index. The data set consists of 7043 Observations and 33 variables. Analysis of this dataset allows us to compare and contrast key characteristics and trends of customer churn. By studying a competitor Telcom companies’ data, we can turn this understanding into actionable insights that will allow our company to produce revenue protecting and generating policies.

1.3 Data Representations

There are four data representations created for the Executive Dashboard. The data representations were created with an audience of shareholders in mind and as such they are created to be easy to read and understand. Two of the data representations being highlighted are the Revenue Map and Revenue by State Bar Chart. The Revenue Map provides an overview of customers’ monthly charges in the continental United States. The States are color coded to represent income ranging from light purple which represents the lower spectrum of monthly charges to deep purple which shows the highest tier of monthly payments. The Revenue Map is also interactive as it allows the user to click on a particular state to see details of the customers churn and revenue in

each churn category. This data representation allows shareholders to focus on churn and monthly revenue by geolocation and may aid later in deciding where to focus marketing campaigns. Another data representation is the Revenue by State Bar Chart. This car chart provides an overview of the monthly revenue generated by individual state. The bar chart is sorted from highest generating revenue state to lowest. The user can hover their mouse over the state to see metrics such as churned and loyal customers as well as the revenue generated by each category. This data representation can be of great assistance for shareholders and marketing executives as they can easily see what states multi-million-dollar ad campaigns would be most effective.

1.4 Interactive Controls

The Executive Dashboard created contains 4 interactive controls which allow a user to modify the presentation of data. Two of the controls are the "Churn Filter", and the "Gender Filter". The "Churn Filter" control is located under the heading "Churn Selection" on the Dashboard. The Churn Filter control has two toggles. By selecting the 'Check' marker, the Dashboard reflects customer Churn in the Churn Rate, Revenue Map, and Revenue by State representations as well as the metrics summary. By selecting the 'X' marker, the Dashboard reflects customer Loyalty in the Churn Rate, Revenue Map, and Revenue by State representations as well as the metrics summary. The "Gender Filter" control is located under the heading "Gender Selection" on the Dashboard. By selecting the 'Female Icon' marker, the Dashboard reflects female customers in the Churn Rate, Revenue Map, and Revenue by State representations as well as the metrics summary. By selecting the 'Male Icon' marker, the Dashboard reflects male customers in the Churn Rate, Revenue Map, and Revenue by State representations as well as the metrics summary.

1.5 Accessibility

The Executive Dashboards have been created with accessibility in mind allowing for a full range of audience members to be able to fully participate. In order to ensure maximum accessibility for users with physical disabilities or colorblindness for example, the dashboard has been created with easy one-button navigation as well as a choice of high-contrast color selection. The summary metrics are listed in black and white colors with a sans-serif font to be easy to read. The interactive controls are displayed with high contrast colors and selected to prevent difficulty for users with red-green or blue-yellow colorblindness. The geolocation maps have also been displayed with a uniform color that changes hue to represent changes in the metric. These efforts in the Data Representations allow a wide range of audience members and those with disabilities to gain useful insights from the data.

1.6 Data Storytelling

The Tableau software allows us to create worksheets to manipulate data, and we can assemble worksheets to create interactive executive dashboards, and the dashboards allow us to craft a story. When building a story, Tableau.com explains that you are building a sequence of points. Each point can contain a view, dashboard, or even just text. Some stories show the same view throughout the story, with text annotations and different filters applied to different points to support the narrative arc (Tableau Help 2022). For this presentation, the most effective method of story delivery is using the "Drill Down" method. The drill down method sets context to help the audience better understand what is going on in a particular category, in this case the category is Churn. By using data representations for geographical churn as well as data displaying revenue in churn categories, we can create a story those begins with broad strokes of churn trends and then "drills down" into the underlying issues that may be causing churn.

1.7 Audience Analysis

When it comes to audience analysis, a great example from Audiense says, "You put work into making sure your products are of the highest quality. But if you sell hot dogs and your marketing campaigns only reach vegetarians, it doesn't matter how amazing the product is" (Hicks 2022). Audiense further goes on to say that effective use of information can create insights into who the audience is and which issues they find concerning. We can use our executive dashboard to help the audience build successful business strategies. For this presentation using a branded audience analysis will produce the most meaningful results as the insights revolve around an understanding of the brand or in this case the telecom company. The audience consists mainly of shareholders, a board of directors, and top-level executives who are all concerned with the brand of the company and what factors attract and detract customers from continuing services.

1.8 Universal Access

Like the customers in the telecom company, shareholders and executives come from diverse and varied backgrounds. As studies have shown, people learn through various methods such as some people are visual learners, some people learn best through hearing, and some people learn best through observing body language. The presentation incorporates various communication techniques to ensure universal access for participants. The Panopto recording displays a curated PowerPoint presentation that presents data using visual graphs, charts, and tables to communicate insights. The presentation also has an audio component as I guide viewers through the story with a prepared narrative. The Panopto presentation also records me delivering the presentation allowing viewers to observe my body language and hand gestures to communicate emphasis. Through the use of varied techniques, we can ensure the story and insights from our churn analysis are delivered in a way to impact successful business decisions.

1.9 Storytelling Elements

One effective element implemented into the presentation is the use of a hook in the introduction. In our technological

world, distractions are everywhere and the use of a hook ensures that we capture the audience's attention from the very beginning. The presentation avoids being unnecessarily long and delivers the most critical insights in a straightforward manner. Therefore, it is essential for the delivery of the story that we are able to capture and hold the audience's attention from the beginning. Another technique for effective storytelling in this presentation is the choice of a clear central message. When delivering the story, it is imperative the audience understands what churn is, what contributes to churn, and how the company is affected by churn. Churn is a strong component of the analysis, and while other metrics such as revenue and geolocation are presented, it is critical that the audience understands the message being delivered clearly. It is important in the presentation that the central theme of churn analysis is very clear and the story which our analysis is built around.

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References

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