

Reflection Paper: Data Dashboard and Storytelling

How the analytics dashboards can be used to drive down costs of customer recruitment to customer retention.

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# Part 1: Interactive Dashboard

## Provide a copy of your interactive Tableau dashboard to support executive decision-making. Your dashboard must be accessible to users with colorblindness, and must include the components in each of the following bullet points:

•  data integrated from both chosen data sets

•  **four** different data representations to summarize the data or display trends

•  **two** different interactive controls that allow the user to modify the presentation of data

•  **two** different metrics or key performance indicators computed using data from both chosen data sets

### A.1 Provide both data sets that serve as the data source for the dashboard

Both data sets can be found within the submitted zip folder. Data sets are named within the data folder and named:

1. churn\_data
2. conversion\_data (https://www.kaggle.com/datasets/loveall/clicks-conversion-tracking)

### A.2 provide step by step instructions to guide users through the dashboard

Use this portion of the paper for step by set instructions through the dashboards within the story.

#### Dashboard 1: Customer Recruitment based on Gender from a recent Facebook ad campaign

The first things to note about this dashboard are:

1. Conversions are the total number of people who *enquired* about the product after clicking the ad.
2. Approved Conversions are the total number of people who *purchased* the product after clicking the ad.

Interactive controls can be used to engage with the dashboard to gather, visualize, and drill down to insights.

1. Click a gender from the legend to keep or exclude data from within all the pie charts
   1. Graphical user interface, application

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2. Select a piece of a pie chart to keep or exclude data from the individual chart
   1. Chart

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3. Hover over a slice of a pie chart for more information

#### Dashboard 2: Customer Recruitment on Age from a recent Facebook Campaign

See Dashboard 1 above. All the same interactions apply to Dashboard 2.

#### Dashboard 3: Churn by Gender

See Dashboard 1 above. All the same interactions apply to Dashboard 3.

#### Dashboard 4: Churn by County Map

See Tableau’s help center article on map interactions: <https://help.tableau.com/current/pro/desktop/en-us/maps_customize_interaction.htm>

A search feature was also added to the map. Use this feature to search by county on the map to.

1. Select the search field
2. Type in your county of interest
3. Look at the map for the highlighted county
4. Hover or click the highlighted county on the map for more information

#### Dashboard 5: Churn Count: Search by County, City, Job

A search feature has been added for all tables in the dashboard. To use the search feature:

1. Click the search field for the table you would like to search
2. Type in the data you are searching for
3. Press enter
4. View the filtered results in the table below

How to sort the table:

1. Click the three bars at the top of the table to switch the sort from ascending to descending order
2. Click the down arrow next to the three bars to sort by other options (field, data source, alphabetical, etc.)
   1. Graphical user interface, application

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#### Dashboard 6: Search by City: Avg Tenure v Churn Bar Chart

A search feature has been added for the bar chart. To use the search feature:

1. Click the search field
2. Type in the city you are searching for
3. Press enter
4. View the filtered search results in the list

How to sort the table:

1. Click the three bars at the top of the table to switch the sort from ascending to descending order
2. Click the down arrow next to the three bars to sort by other options (field, data source, alphabetical, etc.)

How to select specific data:

1. Use the legend to select Churn Yes or No to highlight only that data in all bars in the list
2. Select *one* color of the bar for yes or no to view only the data for that individual bar

#### Dashboard 7: Search by County: Avg Tenure v Churn Bar Chart

A search feature has been added for the bar chart. To use the search feature:

1. Click the search field
2. Type in the county you are searching for
3. Press enter
4. View the filtered search results in the list

How to sort the table:

1. Click the three bars at the top of the table to switch the sort from ascending to descending order
2. Click the down arrow next to the three bars to sort by other options (field, data source, alphabetical, etc.)

How to select specific data:

1. Use the legend to select Churn Yes or No to highlight only that data in all bars in the list
2. Select *one* color of the bar for yes or no to view only the data for that individual bar

#### Dashboard 8: Search by Job: Avg Tenure v Churn Bar Chart

A search feature has been added for the bar chart. To use the search feature:

1. Click the search field
2. Type in the job you are searching for
3. Press enter
4. View the filtered search results in the list

How to sort the table:

1. Click the three bars at the top of the table to switch the sort from ascending to descending order
2. Click the down arrow next to the three bars to sort by other options (field, data source, alphabetical, etc.)

How to select specific data:

1. Use the legend to select Churn Yes or No to highlight only that data in all bars in the list

Select *one* color of the bar for yes or no to view only the data for that individual bar

### A.3 provide instructions to help users navigate the dashboard

The Tableau Story with dashboards can be accessed via this link: <https://public.tableau.com/app/profile/vera.butler/viz/TeleCoCustomerRecruitmentandCustomerRetention/CustomerRecruitmentandCustomerRetention>

1. Click the link
2. Start on the first page of the story labeled “Introduction to the workbook”
3. Navigate to different dashboards by clicking the rectangle with the dashboard descriptions or the back and forward arrows
4. Table

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## Part 2: Storytelling with data

### B.  Provide a link to a Panopto multimedia presentation in which you tell a story about the data to an audience of data analytics peers. Your presentation should implement elements of effective storytelling and include each of the following elements:

•  an introduction of yourself and your background

•  a summary of both chosen data sets and the context in which they occur

•  an outline of key results from your analysis of the two data sets

•  **two** different data representations to serve as supporting evidence for your results

•  a summary of actionable insights based on your results

The Panopto vide can be accessed at this link:

# Part 3: Reflection Paper

Write a reflection paper to demonstrate your understanding of data representation and reporting by doing the following:

## Explain how the purpose and function of your dashboard align with the needs outlined in the data dictionary associated with your chosen data set.

The purpose and function of my dashboard align with the needs outlined in the data dictionary associated with my chosen data set by allowing the executive leaders to first see how effective customer recruitment efforts are, what they cost, and which customers to recruit to support retention goals. For example, if Males are less likely to churn than Females and it costs less to recruit males then targeting Males in a Facebook ad campaign makes sense to drive down costs over time.

## Explain how the variables in the additional data set enhance the insights that can be drawn from the data set you chose from the provided options.

The variables in the additional data set enhance the insights that can be drawn from the data set I chose by allowing stakeholders to and data analytics peers to see what gender and age customer recruitment efforts are successful and which are not. Those then can be used in conjunction with the churn data to know which regions to target to increase customer retention efforts. In other words, customer retention starts with customer recruitment. Once the company has recruited the customers the decision makers can then know which regions and occupations to target to retain the customers with the overall intent of driving down recruitment and retention costs.

## Explain two different data representations from your dashboard and how executive leaders can use them to support decision-making.

### Customer Recruitment from Facebook Ads – Pie Charts

The customer recruitment dashboards represent recruitment efforts from a previous Facebook ad campaign. Pie charts were used to group the data by age and gender. The insights that can be gathered and used to support decision making is that it can be seen which age or gender groups should targeted in future campaigns to increase customer recruitment KPIs.

### Churn by County Map

One of the customer retention dashboards includes a heatmap of the United States that represents the churn rate by county. This can be used by Regional VPs to take a closer look at the counties of interest for their region.

## Explain ****two**** interactive controls in your dashboard and how each enables the user to modify the presentation of the data.

### Pie Charts

For the customer recruitment pie charts there is a legend at the top of each page. This legend can be clicked on to select (highlight) only that piece of the pie chart for ALL pie charts on the page.

### Search by Feature

For the customer retention charts there were hundreds of values for each feature. A search interactive control was added to the top of each of the dashboards so each team member could look at data within the feature that most interests them. This is especially important for the regional VPs who will be interested in the city and county features.

## Describe how you built your dashboard to be accessible for individuals with colorblindness.

The dashboard was built to be accessible for individuals with colorblindness by utilizing the colorblind option for color settings within Tableau.

## Explain how ****two**** data representations in your presentation support the story you wanted to tell.

Two data representations in my presentation that supported my story were pie charts for customer recruitment and bar charts for customer retention. I wanted to first show how customers were recruited based on age and gender to set the foundation for how that may affect how customers can then be retained in order to reduce costs over time. Next I wanted to showcase how average tenure and churn relate to other customer features such as job and locations across the United States. The story is simple to explore outside of the presentation with interactive tools such as search by job.

## Explain how you used audience analysis to adapt the message in your presentation.

Resource: https://www.comm.pitt.edu/oral-comm-lab/audience-analysis

Audience analysis was used to adapt the message in the presentation by considering the following factors about the stakeholders:

#### Attendees

The executive leaders will be present for the presentation and will use the dashboards to make decisions for the organization:

* Senior Vice President for Customer Experience (SVP)
* Executive Vice President of Sales (EVP)
* Panel of Regional Vice Presidents (Regional VP)

My data analytic peers will be present for the presentation and will have continued interactions with the dashboard.

#### The setting of the presentation

The presentation is done synchronously and remotely over a Panopto video. It was expected that everyone has their camera on. This allows for body language to be monitored during the presentation to anticipate questions or concerns.

#### Expectations

**Executive Leaders’**

Executive leaders hold the expectation that actionable insights are delivered during the presentation. A focus on how the dashboard creates actionable insights for the business throughout the presentation will keep executive leaders engaged and was intended to meet their expectations. There will also be an interest in the interactivity of the dashboards and how each metric can be filtered for the use case of each executive leader.

**Data Analytic Peers**

Data analytics peers will be interested in the insights of the dashboards and also how the insights were gathered from the data, how the dashboards were styled, and the interactive features.

#### Knowledge of the topic

**Executive Leaders’**

Stakeholders are very knowledgeable about the company and are looking for new information to help drive business outcomes.

**Data Analytic Peers**

Data analytic peers are knowledgeable of how data can be used to created insights. They may also be subject matter experts in the data they have analyzed in the past which could be mentally mapped to the data within this presentation.

#### Attitude towards the topic

**Executive Leaders’**

Executive leaders are keen to gather new information from the dashboards.

**Data Analytic Peers**

Data analytic peers are excited to see how the dashboards came together and how they may be used for their own projects in the future.

#### Voluntariness

**Executive Leaders’**

Executive leaders have a vested interest in the success of the company and are expected to be genuinely interested in how the data representation was produced and how it directly relates to the insights gathered to make decisions for the organization.

**Data Analytic Peers**

My data analytic peers have a specific interest in how the design, methodology, and results of a data analysis can be translated to specific business insights. They are also eager to hear me tell an engaging story about the data and offer actionable recommendations that are backed by evidence.

### Egocentrism

**Executive Leaders’**

Senior Vice President for Customer Experience (SVP)

* A key focus of this SVP is to increase customer engagement with the company’s products and services thus improving recruitment and retention.
* They are most interested in key characteristics that make up a customer and
* may drive the customers behavior.

Executive Vice President of Sales (EVP)

* The EVP has been tasked with the strategic recruitment and in some part the retention, or renewal sales, for the organization.
* The EVP works closely with the SVP for CE to develop new products or refine the customer outreach promotions to current and future customers but less on the product features being developed by other areas of the organization.
* The EVP is interested in broad categorization of customer’s and how these demographics play out across regions.

Panel of Regional Vice Presidents (Regional VP)

* This panel consists of every Regional VP across the organization.
* Each Regional VP is responsible for setting policies and managing operations in their region and will work with the SVP or EVP depending on what promotions or new product features are being rolled out across their region.

Each stakeholder is anticipated to be most interested in things that directly affect their department.

The SVP will be interested in the Facebook marketing campaigns dashboards for customer recruitment and the churn dashboards for customer retention.

The EVP will be most interested in the marketing dashboard to make decisions on his main focus: customer recruitment. The churn dashboards will be of secondary interest for decisions based on renewal of sales and customer retention. The churn by county sheet can be used to determine customer outreach promotions.

The Regional VPs will be most interested in the churn by county sheet to make decisions based on the success or failure of their customer retention efforts. The marketing dashboards can also be used as a secondary interest to improve customer recruitment efforts to increase the number of customers who have a lower likelihood of churning in the future.

**Data Analytic Peers**

Data analytic peers will be most interested in how to use the insights from the dashboards to drive their own projects and careers.

## Describe how you designed your presentation for universal access by all audiences.

The presentation was design for universal access by all audiences by providing a public link to the data representation, instructions on how to utilize the dashboards, and by addressing potential accessibility issues using only the colorblind color scheme and font sizes and families that all users can read.

## Explain ****two**** elements of effective storytelling that you implemented in your presentation and how each element was intended to engage the audience.

Resource: <https://help.tableau.com/current/pro/desktop/en-us/story_best_practices.htm>

Effective storytelling was implemented in the presentation by:

1. Ordering the data representation dashboards in a story in an order that builds upon previous data.
2. The story was built upon factors such as gender, age, job, city, county, and a journey from customer recruitment to customer retention.
3. Fast load times were considered an important to keeping the story moving.
4. Keeping the story simple by focusing on customer recruitment and customer retention by geographic features was intended to simplify the understanding of the data.

# D.  Acknowledge sources, using in-text citations and references, for content that is quoted, paraphrased, or summarized.

1. <https://www.comm.pitt.edu/oral-comm-lab/audience-analysis>

2. <https://www.kaggle.com/datasets/loveall/clicks-conversion-tracking>

3. <https://help.tableau.com/current/pro/desktop/en-us/story_best_practices.htm>

# E.  Demonstrate professional communication in the content and presentation of your submission.