

Successful Communication with Data Phobic Audiences

Smith, Kelly D., Central Piedmont Community College

ABSTRACT

Hard as it is for SAS® folk to believe, not everyone loves data. At the same time, “data driven” and “data informed” decision-making are now commonly cited as a preferred method for business organizations. Pick up tips and tricks for successfully communicating data in ways that are accessible and relevant for audience members who fear data. Explore how turning numbers into images helps make connections.

INTRODUCTION

How many times have you started to talk about your work or to give a presentation and your audience comes back with “I don’t do data” or “I just don’t get numbers”? What does it mean to be a data “dreader”? Hyun (2018) translates a “non-data” person as someone who: (1) doesn’t understand the source of the data being used, (2) can’t translate the data into a real-world context, or (3) doesn’t see how they can use the data in an actionable sense.

In today’s world, data is being created and used at almost unimaginable rates (Vuleta, 2021), but many companies fail at data-based decision making. One reason companies are often unsuccessful in using data is that they have not developed data-based cultures (Davenport & Mittal, 2020). A primary step that can’t be overlooked is the development of *data literacy* throughout an organization. According to Gartner,

Data literacy is the ability to read, write and communicate data in context, with an understanding of the data sources and constructs, analytical methods and techniques applied, and the ability to describe the use case application and resulting business value or outcome. (Gartner, 2021).

Comprehensive data literacy is a long-term goal and a process. While one presentation can’t achieve the goal of data literacy for people who are uncomfortable with data conversations and decision-making, there are steps you can take to make your data more accessible for your audience. Plan ahead, consider your audience, create connection and relevancy, and maximize your visuals for successful communication with data “dreaders” and data lovers alike.

PLAN AHEAD

Identify the key takeaway you need the audience to remember. Have more than one takeaway? Focus on each takeaway separately and remember to summarize each of them at the presentation’s conclusion. Take the time to outline your presentation to check flow, and decide on the right type(s) of visualizations for your data. Be prepared to answer questions about your data sources, model assumptions, and the reasons behind analytical choices (Sander, 2020). How have others used similar data or answered similar questions?

CONSIDER YOUR AUDIENCE

Remember your audience (Hope, 2021). You love data and talking about numbers, but your audience may not. Don’t “dumb down” your presentation, but make sure you provide sufficient context for audience members that aren’t involved with the numbers and that you define terms, especially acronyms. Human beings can only focus on a limited amount of information so don’t ask your audience to waste brain space on keeping track of acronyms. Help your audience to stay focused on the key takeaways from your numbers by providing context and definitions.

CREATE CONNECTION AND RELEVANCY

When possible, connect your numbers to a more concrete image or story. If you’re talking about the percentage of new businesses that survive five or more years, translate the numbers in daily life. For example, instead of only saying “25% of small businesses survive their first 5 years, consider including a

captioned image to help your audience remember this point (Figure 1). The human brain is primed for visuals, so including images will help audience members retain the information (Evergreen, 2018).



Figure 1. Example of combining numbers and visuals.

If an average is nonsensical or you're going to include standard deviation, you should consider including the range. For example, the average family in the United States consists of 3.15 persons (Statista, 2021), but realistically there is no truly average family with 3.15 persons. Including a range of the smallest to the largest family helps your audience make connections with the data. Connecting numbers to images and life experiences help audience members retain the key takeaways of your presentation.

MAXIMIZE VISUALS

Avoid presenting huge tables of quantitative data. Even data nerds can get lost in a sea of numbers. On the other hand, a good visualization captures the audience's attention and conveys key information in an accessible manner (McDermott, 2016). There are many visualization options available, but keep the end goal in mind. Simple is usually better. There are a number of ways to maximize a visualization's ability to convey the intended message. Steps to maximize your visuals include: choose display options carefully, use headlines rather than descriptive titles, highlight important data with callouts or annotations, minimize distractions, and consider accessibility guidelines (Evergreen, 2018; Harrison, 2017; Hope, 2021, Phillips & Horowitz, 2017)

SELECT APPROPRIATE VISUALS

There are two steps to picking appropriate graphics: the data, and how the human brain operates. Don't try to force data into a line graph if a bar chart is a better display choice. Also, the human brain is better at interpreting length than angle, and works better in two rather than three dimensions. In other words, bar charts are more easily (and accurately) interpreted than three dimensional exploded pie charts (Evergreen, 2018). The chart should be large enough for the audience to read easily, whether on a printed page or a PowerPoint slide.

HEADLINES FOR TITLES

A good title will guide the audience to the key takeaway rather than just describing the graphic. Phillips and Horowitz (2017) offer an example based on class enrollment data: "Chemistry enrollment by ethnicity" versus "Hispanic female enrollment in Chemistry is increasing" (pp. 27-28). With the second title, audience members are more likely to understand the graphic and retain the information.

CALLOUTS / ANNOTATIONS

Callouts and annotations provide an easy means of including context within a visual. Consider a line graph with multiple peaks but one peak that is especially important to the takeaway message. Placing a callout or annotation next to that peak draws the audience's attention and provides context. In a 2017 interview, Janine Kurnoff of The Presentation Company offered the following example of how a callout can make it easier for an audience to understand and retain the primary message of a graphic (Figure 2, image on right).

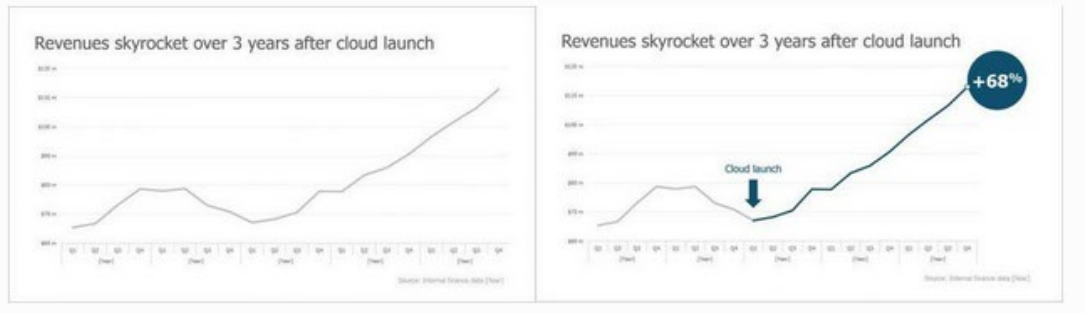


Figure 2. Callouts on right hand size emphasize key points for the audience. Image from Harrison (2017).

MINIMIZE DISTRACTIONS

Callouts and annotations can provide context, but it's important not to overwhelm the audience with too many competing colors, textures, fonts, or even data. Focus on the key data needed to inform the audience; don't present data just because it's available. Create a standard color and font scheme and use it consistently to help your audience stay oriented to your presentation. Consider using colors or a textured pattern to highlight important data points rather than including a rainbow simply to add color in general. Simplify the axes to keep the focus on the graph but provide enough detail so the audience understands the image. Cluttered visuals make it more difficult for your audience to focus on your key takeaways. Simple is generally better.

MAKE VISUALS ACCESSIBLE

Consider how your presentation will translate to various media and to a diverse audience:

- Will the textures and colors in the presentation convey the same message in a black and white format?
- Will the graphics be legible (readable) on a desktop or a mobile device?
- Will the presentation meet Web Content Accessibility Guidelines (WCAG) if posted on the Internet? (WCAG information is available at <https://www.w3.org/WAI/standards-guidelines/wcag/>)
- Will a person who is color-blind be able to interpret the chosen color scheme (Figure 3)?
- Is there sufficient alt text provided for audience members with significant visual impairment?



Figure 3. The impact of color-blindness on visual perception. Image from Stinson (2020).

CONCLUSION

Successful communication with “data dreaders” results in a stronger presentation for all audience members regardless of their level of data literacy. Careful preparation and consideration of the target audience will keep your presentation focused. Creating connections and maximizing your visuals will keep your audience engaged. Careful selection of graphics, headline titles, and highlighting callouts with minimal distractions will help your audience understand and retain your key takeaways. Taking the time to ensure your presentation is accessible to multiple platforms and diverse audience needs keeps the focus on your data, makes your data more actionable, and enables all recipients to use your data to make decisions.

REFERENCES

- Davenport, T., & Mittal, N. (2020, March 23). How CEOs can lead a data-driven culture. *Harvard Business Review*. Retrieved from <https://hbr.org/2020/03/how-ceos-can-lead-a-data-driven-culture>
- Evergreen, S. (2018). *Presenting data effectively* (2nd ed.). Thousand Oaks, CA: SAGE Publications.
- Gartner (2021). Data literacy. Retrieved from <https://www.gartner.com/en/informationtechnology/glossary/data-literacy>.
- Harrison, K. (2017, June 13). 4 simple ways to make data easier to understand. *Forbes*. <https://www.statista.com/statistics/183657/average-size-of-a-family-in-the-us/>
- Hope, C. (2021, March 2). Presenting data: 5 tips for making your data understandable [Blog]. <https://dataingovernment.blog.gov.uk/2021/03/02/presenting-data-5-tips-for-making-your-data-understandable/>
- Hyun, J. (2018, August 20). *How to talk data to non-data people* [Blog]. Retrieved from <https://www.linkedin.com/pulse/how-talk-data-non-data-people-jenny-hyun/>
- Phillips, B. C., & Horowitz, J. E. (2017). *Creating a data-informed culture in community colleges*. Cambridge, MA: Harvard Education Press.
- Pixabay, (n.d.). House image. Retrieved from <https://pixabay.com/illustrations/house-building-cartoon-home-6331047/>
- Sander, M. (2020). How can I know you're right? In B. Franks (Ed.), *97 things about ethics everyone in data science should know* (pp. 218-219). Sebastopol, CA: O'Reilly Media Inc.
- Statista (2021). Average number of people per family in the United States from 1960 to 2020. <https://www.statista.com/statistics/183657/average-size-of-a-family-in-the-us/>
- Stinson (2020, May 1). The ultimate guide to accessible presentation design [Blog]. Available at <https://www.stinsondesign.com/blog/ultimate-guide-accessible-presentation-design>
- Vuleta, B. (2021, January 28). *How much data is created every day?* [Blog]. Retrieved from <https://seedscientific.com/how-much-data-is-created-every-day/>

CONTACT INFORMATION

Your comments and questions are valued and encouraged. Contact the author at:

Kelly D. Smith
Central Piedmont Community College
kds.aewas@gmail.com
kelly.smith@cpcc.edu
www.linkedin.com/in/kelly-d-smith