



Framework

Step-by-Step Data Visualization Framework

Creating effective visualizations is much easier when you have a step-by-step method for developing them. Following these seven steps will help you improve your data storytelling.

1. Start with a clear goal

Begin by identifying the business question your data analysis answers and decide what you want to achieve with your visualization. What do you want to communicate? What do you want your audience to understand? For example, if you're creating a visualization for an analysis of last quarter's sales data, your goal might be to reveal which product SKUs are generating the most revenue in each territory.

2. Understand the data

Without a solid framework and understanding of your data, it's easy to make incorrect assumptions that lead to inaccurate conclusions. And these mistakes can lead to costly consequences when decision-makers act on faulty insights. Be sure you understand your data's variables and what each represents, as well as their significance. What variables will help answer the business question? Do you need to bring in any additional data sets to provide a fuller, more accurate picture?

3. Consider your audience

The most effective visualizations are highly focused and fit within a framework. Knowing what to leave out is just as important as knowing what to include. Understanding your audience will help you decide what to focus on. Find out your audience's level of awareness and experience with your subject matter. What do they already know? What information do they need? An audience of subject matter experts will require a very different visualization than an audience new to the subject.

4. Identify which type of visualization is best suited to the data

Different visualization techniques lend themselves to different types of data analysis. For example, charts and graphs are best used for univariate data and descriptive analytics, while diagrams are ideal for demonstrating the complex relationships between



DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

hierarchical or multidimensional data, and maps are great for visualizing geographical data. Selecting the right type of visualization that falls within a framework is crucial for effective communication. (A modern data visualization solution like Sigma can help make this important decision for you.)

5. Create your visualization

Once you've decided on the type of visualization your data requires, it's time to design it. Choose the simplest options that best communicate the data's message. Consider strategic use of color to help create mental associations. For example, you might use common color conventions such as orange for safety. Contrasting colors will demonstrate comparison/contrast. You can also use color simply to make important information stand out.

Another thing to consider when creating your visualization is to make it interactive. Interactive visualizations are especially powerful since they enable the user to engage more fully with the data. Allow viewers to manipulate your visualization, highlight key sections, remove what they don't need, and keep what they do. (Sigma makes it easy to keep viewers engaged with interactive dashboards that allow them to freely explore live, underlying data to answer additional questions.)

6. Gather feedback

Testing and gathering feedback will help you make your visualization more effective and by extension your data visualization framework. We all have blind spots, especially when the data is familiar or when we're working in our own area of expertise. Show your visualization to a segment of your target audience and ask for feedback. Is anything unclear or confusing? Could anything be improved to make the message easier to understand?

7. Iterate

Based on the feedback you receive, consider making changes before releasing your visualization to a broader audience. While you don't need to incorporate every suggestion, feedback will often reveal blind spots or opportunities to significantly improve visualization for a specific audience.

Better Storytelling with a Data Visualization Framework

Data visualization is a crucial tool for everyone who works with data. It helps to empower audiences with actionable information by breaking down data into an easily



digestible visual format. Using this seven-step data visualization framework will help you develop strong visuals every time you set out to create one.

Sigma for Data Visualization

Users can easily turn data into interactive visualizations and dashboards with Sigma's collaborative canvas. With Sigma's visualizations, users can drill beyond the surface level data and into the underlying granular data to answer new questions or for further analysis.

Because visualizations are powered by live data, users don't need to constantly update or rebuild dashboards. With an intuitive drag & drop design, anyone can change the layout for optimal data storytelling.