Chart or Table and Some Best Practices

I can remember back to junior high math class where a math test would evaluate what you could say after looking at a particular table or chart. One thing that you may recall is that was easier to answer questions around specific values such as how many items were sold in August with a glance at a table than with a bar chart where a specific value might have required a closer look as you try to line up a point in time across to the Y axis and approximate what the specific value might be, if not labeled. Conversely, looking at a table filled with rows of numbers could cause cognitive overload and make it difficult to imagine what the rate of change could be rather than the same date would be conveyed in a line chart.

It is examples like these that remind us that there is a time and place for using tables over charts and visuals. There are also times when you may want to add tiny visuals that reveal trends within data tables, such as the use of sparklines in a table showing values for an individual company's stock performance.

How Do I choose? Table or Chart?

So, a couple of key takeaways for this week are:

- Tables are used to present specific values or if you need to convey precise values.
- Graphs are used to see trends and make comparisons. It is easier to see relative difference in a chart than to look at individual cells in a table.

You also need to ask yourself some questions about whether to use a chart or table, as this decision is not always cut and dry.

You will want to identify the audience who will be consuming the information and consider how the data will be used. Is it to see the shape of the data? For example, is the story best told by following the trend or by knowing the specific precise values needed to make decisions? When you have a firm grasp of the answers to these two questions it will help you make an informed decision about whether a table or chart is best for your scenario.

I think it is helpful to walk through a case study. The following blog post from Cole Nussbaumer walks through an example of a table presented in the Wall Street Journal in an article entitled "Young Works Like Facebook, Apple, and Google" (2011).

The article contained a table showing the 150 companies that were surveyed and their relative rank, and the percentage of votes each got from young worker voters. Nussbaumer does a nice job of walking through the key questions we were just discussing around data use and audience. In this case he compares and contrasts how the data might have been better represented in chart form and shows iterations of improvements to convey the message. While this week's topics focuses on tables, seeing when a chart may be better helps understand some of the cons of using a table. I encourage you to check it out. Here is the link: http://www.storytellingwithdata.com/blog/2011/11/visual-battle-table-vs-graph.

So you have chosen a table now what?

There are a lot of little careful considerations when creating a table. How should I handle alignment of things, left, right or centered? What about long headers? What if I want to divide the table into sections and how to effectively use shading? Should I use gridlines or not, or if yes how many? What are the guidelines for handling a table title? When is it ok or more effective to use abbreviations or truncated values? How much space should I put between the rows? Should I make it interactive and allow them to sort by different columns or not?

One question I hear often is whether it is alright to abbreviate in a data table. The answer I tell them is sure. Table columns can easily get very wide trying to accommodate large numerical values. You don't have to show every insignificant digit of a number to tell your story. For example, a large number like $275,000 can be abbreviated in the table cell to $275k. Also consider rounding numbers off—78.113% can be rounded and represented as 78%. Know your audience to find out how many significant digits are meaningful in the reporting. Common labels like pounds, and feet, and inches, etc. should also be abbreviated to save room.

Most of us assume a table should be a grid like we are used to seeing in Excel by default. However, most experts today instruct us that boxing in all your cells is not necessary and actually creates visual noise that can detract from easily scanning your table for values. Three horizontal lines are typically enough, above, below and one after the heading. You want to make sure you leave enough space between rows and alignment should In general be right aligned when dealing with numerical values. This will allow you at a glance to see which numbers have less digits and are of lesser value.

We all used to hear that using banding or "zebra striping" is helpful in delineating rows from one another. This is no longer considered best practice. Here is what Tufte says about it in chapter 3 of his book, Envisioning Information, "Strips are merely bureaucratic or designer chartjunk; good typography can always organize a table, no stripes needed."

Occasionally, a vertical striping may be used if you need to specifically highlight a particular column of a table

One last tip, before I sign off here. Another novice action when creating tables that should be avoided is the overuse of bolding and italics. Font treatments such as this should be used sparingly and only to highlight a piece of data or value that you want to showcase to help tell the story.

Finally, please find time to watch this six-minute segment of this video on dashboards from Tobias Komischke, Sr. Director at Infragistics, Inc. It presents a quick walkthrough of formatting a data table following some best practices. At the 51:00 mark, Komishke discusses tables until the end of the video. It can be found at https://www.youtube.com/watch?v=UuL6wPGTJZQ. Feel free to watch the whole thing if interested, as we will be designing a dashboard as part of the final project.
