The Value of a Good Visual: Immediacy

by Bill Franks

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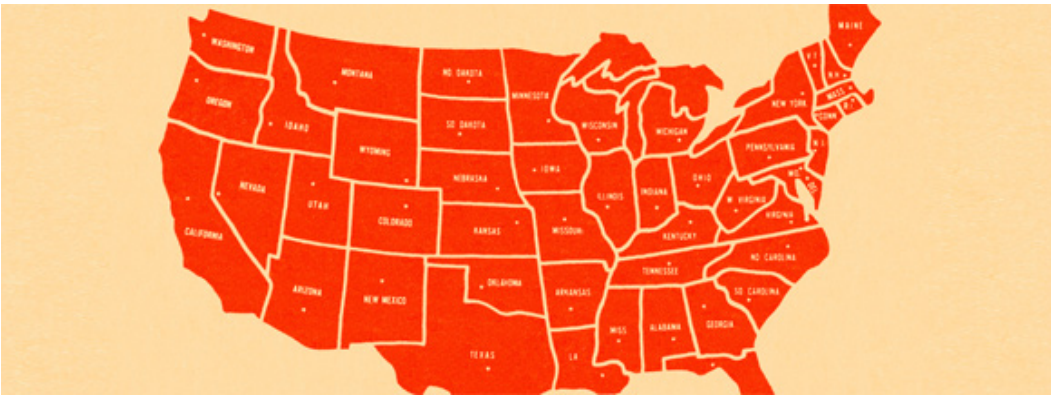
Our brains are meant to see in pictures. Grids and columns of data, while ubiquitous, make it very difficult to see trends or patterns. Additionally, a lot of the new data sources available today, such as genetic data or social network data, don't lend themselves to traditional spreadsheets and graphs. These data types require a different way of displaying them to allow us to see the underlying patterns and stories in the data.

I'd like to walk you through an exercise to illustrate how effective visualizations allow you to immediately comprehend a complex set of relationships. Consider a standard map, such as the map of the United States below. If I show you the map and ask you to describe how a few states are related to one another, you can immediately visualize and verbalize an answer. New York is up and to the right of Virginia while Texas is down and to the left. There are several states in between the two and Texas borders fewer states than Virginia does. Simple, right?

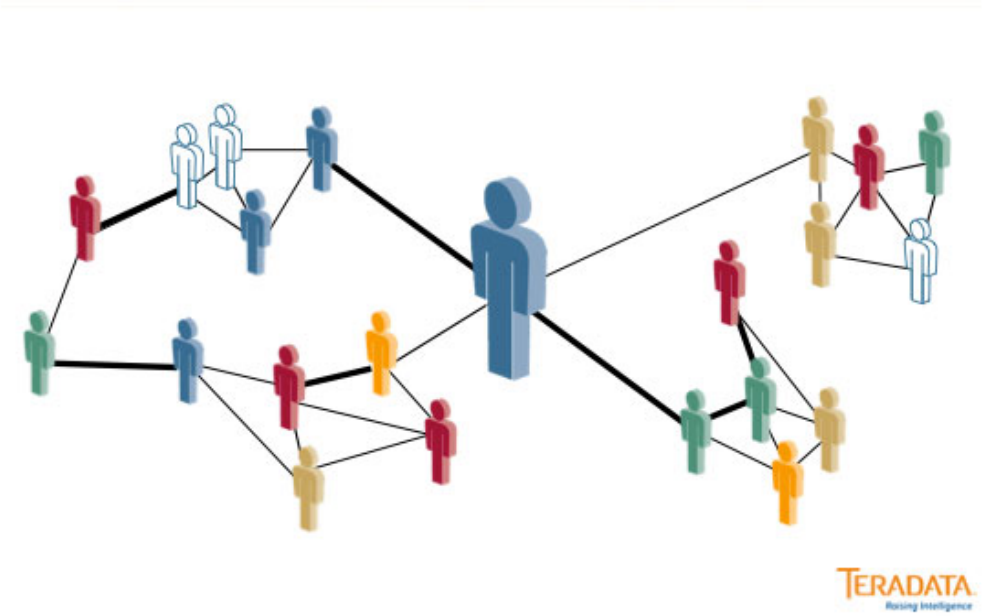


Next, I take away the map and give you a set of data that gives relative location, size, spatial border details, and other information about the states. Could you describe the same relationships in just a few seconds based on the data alone? I'll bet you'd throw your hands up in the air — just like me. I have never been able to find a remotely reasonable way to explain the information immediately visible to me in a map without making use of a map.

You might not immediately grasp the importance of the above example because it seems self-evident that maps are important. I'd like to suggest to you that the reason for that is that you are

aware that maps exist in the first place. Had you never seen a map, you'd be struggling to explain the information that a map conveys in some other way.

This is the key to the value proposition of data visualization. It could be that you are struggling to convey information without being aware that there is a visual that can have the same type of impact as a map. Or there may be connections among all that data that you'd never make without a visualization. Until you see the visual for the first time, however, you won't appreciate the value it offers. Take a look at the social network graph below: it shows is that there are several distinct groups of people who interact a lot among their own group and they don't really interact outside of their group. However, there is a single person who has contact with each group and connects them. That person would be the critical one to reach if you want to influence those groups easily. See how easy it is to understand the connections between people and groups?



As the map example illustrates, data visualizations can make it easy to rapidly understand relationships, patterns, and stories that are contained within a complex data set. This is the reason they are so powerful. There is a reason for the saying "a picture is worth 1000 words." It also holds for data points.

One of the best features of modern visualization tools is that they permit interactivity with the underlying data. In other words, a visual isn't static. You can click on various parts of a visual to drill into different views of your data on the fly. While many business intelligence tools have enabled drill down reports for years, they typically contain only common visuals and also typically constrain users to predetermined paths. Visualization tools today don't apply many limits on what users can do, which opens up a lot more options for analyzing data.

A few years ago, we put a popular visualization tool on my team's laptops. It was a huge hit. Over time, several members of my team stopped using traditional spreadsheet and presentation tools altogether in favor of the visualization tool. Even if all they need to show a client are some fairly standard bar and pie charts, the interactivity of the tool is a huge plus. When the chart is up on the screen and a client asks a question that requires a different view of the data, it is easy to drill into that view on the fly. No more sending an email later in the day with another chart. The data in the charts can also be automatically updated with the latest data. That adds a lot of value on top of the visualizations themselves.

Don't underestimate how much an appropriate visual can help you get your point across. You have to see the power of high-impact visualizations in order to fully grasp what is possible. The good news is that modern visualization tools can help users at any skill level do a better job of analyzing, comprehending, and presenting information. Give it a shot.

Visualizing Data
An HBR Insight Center

- Your Business Needs Insight, Not Just Pretty Pictures
- It's Time to Retire "Crap Circles"
- The Power of Visualization's "Aha!" Moments
- We've Reached Peak Infographic, and We're No Smarter for It

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