

## Explore It for Yourself:

# The Relative Merits of Static and Interactive Visualizations

*Let's compare exploring data with exploring cities, to help us understand how important exploration and interaction are for insight generation and knowledge creation.*

### It's Better to Visit a New City Than to Get a Post Card

When it comes to exploring a city, visiting it yourself is a far richer and more rewarding experience than trying to do the same through a post card or a guidebook. Why simply look at a singular snapshot view - a glimpse of what somebody else considered important - when you could get the full sensory experience yourself? When it comes to exploration, post cards and guidebooks do nothing but beg the question: what was left out?



### It's Better to Explore Data Than to See a Snapshot

The same can be said for static and interactive visualizations. Static visualizations, much like post cards, only provide a singular view of the information, while interactive visualizations provide the full, real-time exploratory experience, much like visiting a city in-person. That's not to say there isn't a time and a place for static visualizations, but interactive visualizations offer deeper insight and understanding that can only come from being able to explore the data for yourself.

Interactive visualization tools allow users to explore data with their own eyes; to get the big picture as well as fine details and, in the process, to piece together their own mental maps of the dataset. Iteration and exploration, furthermore, make the analysis process more open-ended, offering multiple paths, readings and conclusions.

### Interactive Tools

For today's visual analytics tools, the interaction of the data deserves as much attention as the visualization itself. When done well, interactive tools can improve comprehension, but when done poorly, they can get in the way.

Here are some of the more popular interactive tools that can be found in most dashboard and BI suites:

- Filter lists** are used for focusing on key data facets and seeing a data set in multiple ways. However, they can take the viewer's eyes away from the visualization. It can then trigger an instant change that happens too quickly for the viewer to return and refocus on the visualization to catch the before and after effect. This can be problematic, especially if the changes are subtle and spread out. By contrast, slower, animated transitions are much easier for the user to take in.



- Hover over interactions** display a second dashboard or visualization in a popup, giving the user a new way of looking at and digesting their data. When you can easily switch between visualizations, or use another to supplement the one already provided, it can lend a newer perspective that can provide connections you didn't notice before.
- Zoom controls** are useful for focusing on different visualizations especially when they preserve a sense of content. Users can select data points, zoom in and out, and drill down into detail. In this way, they let the user see the details up close while also understanding the relationship of the part to the whole.
- Touch screen controls** offer users multiple ways to interact directly with the visualization itself, rather than via external filter lists. Tap actions to drill down/up and pinch to zoom controls provide a hands-on experience with direct manipulation that is a far cry from simply viewing a static snapshot.



Visual analytic tools that let you explore data, rather than simply view it, result in a better overall understanding of the underlying data as well as the possibility of deeper insight.

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