5 Ways to Make Data Visualization More Effective

Is a picture of data worth 1,000 words? It depends on how you do it.

Data visualization reveals how numbers play out — across time, geography, demographics and other variables. The idea is to make data more immediately accessible and meaningful, especially for people who are not data experts.

But just visualizing data doesn't guarantee it will actually translate into actionable insights. It all depends on what you show, how you show it and who has access to visualization tools.

In a recent GovLoop event, five government and industry experts shared tips and tricks for getting the most out of data visualization.

1 VISUALIZE WITH A PURPOSE

You can visualize pretty much any data. But what's the point?

That's not a rhetorical question. Before you can begin visualizing data, you need to be clear about your purpose, said Rachel Leventhal-Weiner, Director of Evaluation and Impact for Connecticut's Office of Policy and Management.

That is, what is the goal of the program, and how does it align with the agency's mission? In short, what is the story you are trying to tell? Once you've articulated that purpose, you can begin looking at your data and the extent to which it aligns with that mission.

"If it does, you're on the right track," said Leventhal-Weiner. "And if there's gaps, then there's an opportunity to figure out, sharpen and hone before you actually create that data visualization for your data story," she said.

2 KEEP THE STORY SIMPLE

A picture might be worth 1,000 words, but words can add value to a picture.

That's because, as with any picture, a data visualization is subject to interpretation, which can make it difficult for people to reach a consensus about how to use it.

"A lot of times, people make different decisions or assume different things about what they're looking at," said Gabriel Mullen, Principal Sales Engineer at Snowflake.

When sharing data visualizations, Mullen recommends providing contextual information that helps viewers understand the importance of the data, i.e., the story you are trying to tell.

Data visualization "doesn't all just have to be graphs and widgets," he said. "Text is also important to provide that additional context."

And the simpler the story, the easier it is to understand. In that spirit, Mullen recommends keeping the visualizations themselves simple, without too many layers or too much information.

③ DEMOCRATIZE DATA

But what counts as too much information? It depends on who you're talking to.

When deciding what data to visualize, you should think about the interests and expertise of the intended audience, said Ty Caldwell, Tableau Developer for Indiana's Management Performance Hub.

Caldwell, whose organization supports data-driven decision-making and policymaking, recommends building tiered visualizations, offering a high-level view, but allowing users to drill down for more details.

"So, people who aren't particularly data savvy can see right up front the information that they want to get out of it, while their [experts] can really dig in," he said.

As a rule, Caldwell likes to keep visualizations simple for a general audience, so users feel curious, rather than discouraged, at first glance.

④ DEMOCRATIZE VISUALIZATION

However simple visualizations are, some people will be discouraged. The problem is that data is a specialty, with its own language and technology.

"Sometimes people just get scared of the word 'data,'" said Stefanie Costa Leabo, Boston's Chief Data Officer.

To counteract hesitancy among agency personnel, she points out that visualizations are just digital reflections of the work they do. "Your actions generate this data," she tells people.

Leabo's particularly excited about the emergence of "low code, no code" data collection tools that allow people to record and convey data without having to use coding. "I think this just continues to make this type of work more accessible for more people."

⑤ FOCUS ON DATA SHARING

Every agency is responsible for collecting and sharing certain data sets. But practically speaking, the community doesn't care who owns what data.

Consider an issue such as homelessness. Numerous agencies gather data that provide insights into different aspects of the challenge. To respond effectively, those agencies need to collaborate, said Eva Pereira, Chief Data Officer for Los Angeles.

"We should all be on the same page with regards to the goals that we're working towards, the metrics that we're looking for, and the outcomes that we're pushing for," she said.

And it's not just about playing well with others. It's about sharing data. In fulfilling service requests around homelessness, every agency must have access to the same data, so they are working from a common picture.

"We're one city, and we need to be acting as a single solitary unit, and by consolidating this data, we can begin to prioritize," Pereira said.

To learn more, check out the on-demand version of the full event, "How to Explain Data Through Visualization and Storytelling."