

The role of data visualisation and storytelling in science communication

As the world of communications becomes increasingly flooded with images and videos, it is natural that science communication is shifting towards creative solutions as well, such as data visualisation and data storytelling, to make research findings accessible, engaging, and digestible for diverse audiences.

But why are visualised and animated data so powerful in explaining complex messages? Data visualisation transforms vast amounts of information into comprehensible, well-designed formats – charts, graphs, maps, and interactive tools that reveal patterns and trends clearly. These visual representations not only condense complexity but also provide insights that might otherwise be lost in a sea of numbers or technical jargon. Data visualisation is a valuable tool for researchers to communicate key findings more effectively, not just to colleagues, but also to non-expert audiences. Whether it's a bar chart showing changes in global sea levels over the past 50 years, or a time-lapse map charting the spread of a disease, a well-crafted visual can turn a complex narrative into an easily understood message.

The most effective visuals, however, are not static. Tools like interactive dashboards, animated graphs, and web-based applications allow users to explore data in real time. This dynamism supports deeper understanding and sparks curiosity, particularly in educational or public outreach contexts. Take for example the [website of the knowledge services](#) of the European Commission's Joint Research Centre, which uses data visualisation to present complex data in accessible formats. One such example is the interactive [bioeconomy country dashboard](#), which maps each Member State's bioeconomy strategy, offering easy navigation and links to further resources.

When animated, data visualisation can be even more compelling, like the [animated sequence showing the temporal change of star spots](#) on a red giant star, created by MOME's data scientists. This powerful visualisation was featured in a study by researchers from Hungary and Germany, published in [Nature Communications](#) in December 2024.

Data storytelling is another great way of presenting facts and figures in an engaging form: it elevates visual communication by weaving data points into a coherent narrative. Rather than presenting facts in isolation, this approach crafts stories and adds a human touch by placing scientific discoveries within real-world contexts that audiences can relate to. It can also target specific audiences by matching the right narrative to the data.

Data storytelling also helps bridge the gap between science and policy, enabling decision-makers to understand the meaning behind the numbers and make informed

choices. It is equally powerful in factual journalism – just think of the [Financial Times](#), which uses compelling data visualisation to bring stories to life, like its recent coverage of the [the invasion of Ukraine](#).

Striking scientific visualisation often draws on principles from art, design, and illustration. Far from undermining scientific rigour, creativity and carefully designed visualisation enhance clarity and impact. A [2024 study](#) in *Science Communication*, a highly ranked international communication research journal, showed that artistic representation of scientific topics in social media had far greater impact than straightforward data visualisation alone.

As the volume of data grows, engaging visual strategies are becoming essential for both analysis and communication. Combining technical expertise with design literacy enables researchers tell stories that are not only informative but also memorable and impactful. With the continued improvement of data visualisation tools, researchers now have greater opportunities to reach wider audiences, explain their field of expertise more effectively, and foster deeper appreciation for evidence-based knowledge.