

# DS068-Storytelling 1 - How to Effectively Tell a Story With Data

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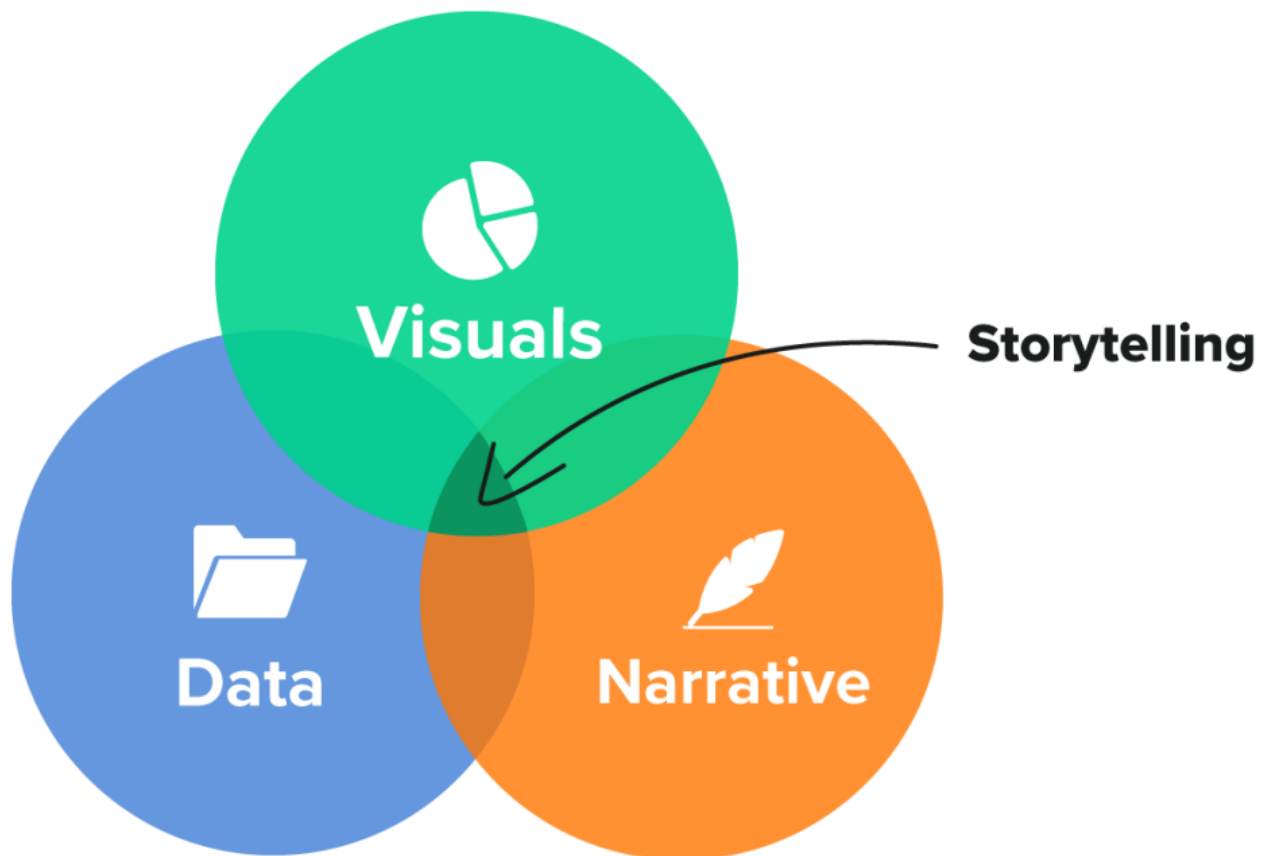
By: eng. Esraa Madhi

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## What is Data storytelling?

is the ability to effectively communicate insights from a dataset using **narratives and visualizations**. It can be used to put data insights into context for and inspire action from your audience.

There are three key components to data storytelling:



*The Art of Data Storytelling To Engage and Persuade - AgencyAnalytics*

**Data:** Thorough analysis of accurate, complete data serves as the foundation of your data story. Analyzing data using descriptive, diagnostic, predictive, and prescriptive analysis can enable you to understand its full picture.

**Narrative:** A verbal or written narrative, also called a storyline, is used to communicate insights gleaned from data, the context surrounding it, and actions you recommend and aim to inspire in your audience.

**Visualizations:** Visual representations of your data and narrative can be useful for communicating its story clearly and memorably. These can be charts, graphs, diagrams, pictures, or videos.

<https://youtu.be/xekEXM0Vonc>

<https://youtu.be/xekEXMOVonc>

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## Why data science is not enough?

Unlike business intelligence or data science that emphasizes the technical task of turning data into insights, a data story brings these insights together with qualitative analysis and domain expertise to better understand a relevant business goal or objective.

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## Why is telling a story with data important? why we need it ?

Data storytelling also helps to explain data to people of different learning styles and allows the narrator to craft the communication methods to the respective audience.

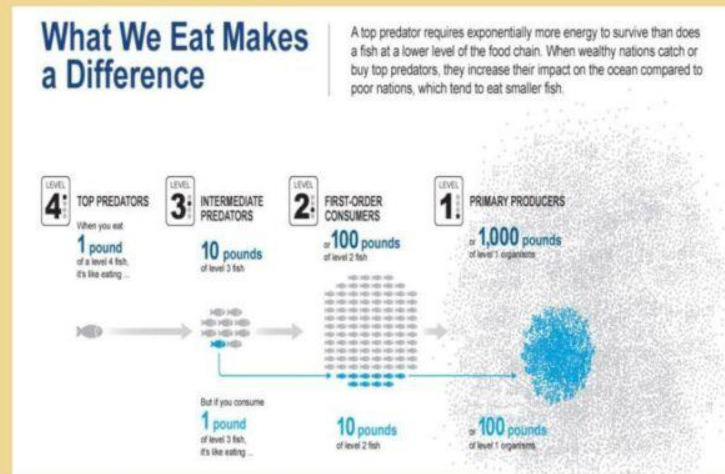
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## Use Data Stories, Data Visualizations, and Dashboards:

Data Stories, Data Visualizations, and Dashboards are all ways to present data, but they serve different purposes and communicate in distinct ways:

- Data Stories

## BEST DATA STORYTELLING EXAMPLES



apex  
LEARNING & INNOVATION

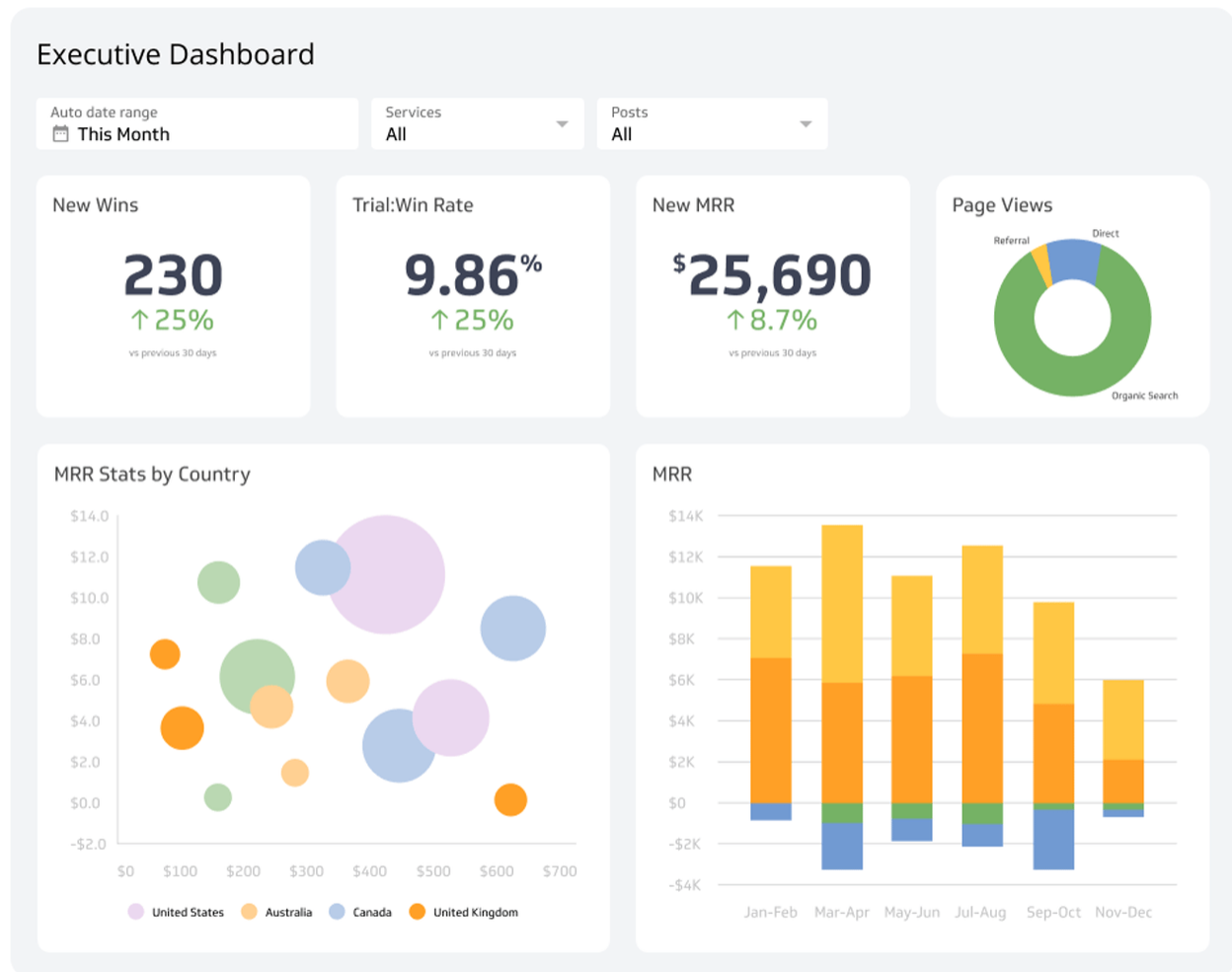
### 22 inspiring data storytelling examples

- **What they are:** Think of data stories like short documentaries that use data to tell a tale. They're crafted narratives that guide you through data findings with a clear beginning, middle, and end.
- **Key points:**
  - **Storytelling:** They're all about the story, with data as the main character.
  - **Engagement:** Designed to capture attention and sometimes stir emotions.
  - **Contextual:** They give background info to help understand the 'why' and 'how' of the data.
- **Data Visualizations**



### *16 Best Types of Charts and Graphs for Data Visualization [+ Guide]*

- **What they are:** These are the illustrations of data—charts, graphs, maps. Imagine a single, powerful image in a news article that shows what's happening.
- **Key points:**
  - **Visual:** They translate numbers into visual objects like lines, bars, and dots.
  - **Immediate:** Aimed at letting you see patterns and insights 'at a glance.'
  - **Focused:** They present data points without a surrounding story.
- **Dashboards**



### 7 Executive Dashboards & Reporting Examples | Klipfolio

- **What they are:** Dashboards are like the control panels in your car. They show you several important bits of information all at once, helping you keep an eye on various metrics.
- **Key points:**
  - **Interactive:** You can often click around to see different data points.
  - **Current:** They usually show live data, updating continuously.
  - **Comprehensive:** They bring together many data visualizations in one place so you can see the big picture.

### In Summary:

- **Data Stories** are narrative-driven, often with a persuasive goal, and use data as part of the storytelling.
- **Data Visualizations** are individual charts or images that represent data to highlight patterns or insights.

- **Dashboards** are collections of data visualizations that provide an overview of specific metrics and are used for ongoing monitoring.

Each serves a unique role in data analysis and communication, and the best choice depends on the intended use and the audience's needs.

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## How to tell a story with data?

1. **Find the Narrative:** Understand the insights and story that the data is indicating, such as trends or patterns.
2. **Know Your Audience:** Tailor the complexity and focus of the data story to the audience's background and interests.  
Data storytelling can be used internally (for instance, to communicate the need for product improvements based on user data) or externally (for instance, to create a compelling case for buying your product to potential customers).
3. **Focus on Relevant Data:** Select data that is pertinent to the story to avoid dilution and distraction.
4. **Use data ethically** Present data honestly without manipulating it to create misleading narratives or to confirm biases.
5. **Analyze and Discover Insights:** Analyze the relevant data to uncover meaningful insights that can form the core of the story.
6. **Choose Effective Visualizations:** Select the best data visualizations that clearly represent the story you wish to convey.
7. **Provide Context:** Add domain expertise and background information to make the data story comprehensible and relevant.
8. **Structure the Narrative:** Use a familiar storytelling structure to engage the audience and facilitate understanding.
9. **Refine for Clarity:** Continuously edit the story to be as clear and concise as possible, removing any unnecessary information.

<https://youtu.be/zEs1af0VpP8>

<https://youtu.be/zEs1af0VpP8>

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## Data Storytelling examples:

1. <https://www.thoughtspot.com/thoughtspot-blog/homelessness-america-story-10-charts>
  2. <https://www.thoughtspot.com/thoughtspot-blog/are-hurricanes-getting-worse-story-told-7-hurricane-strength-charts-thoughtspot>
  3. <http://www.r2d3.us/covid-19/>
  4. <http://www.r2d3.us/visual-intro-to-machine-learning-part-1/>
  5. <https://www.juiceanalytics.com/writing/20-best-data-storytelling-examples>
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## Good & Bad data storytelling:

1. <https://www.juiceanalytics.com/writing/11-examples-of-good-and-bad-data-storytelling>
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<https://lazarinastoy.com/10-common-data-storytelling-mistakes-and-how-to-avoid-them/>



10 Common Data Storytelling Mistakes and How to Avoid Them - LAZARINA STOY. • [lazarinastoy.com](https://lazarinastoy.com)

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## Tools to build data storytelling or dashboard:

1. **Metabase**

<https://www.metabase.com/>



Metabase | Business Intelligence, Dashboards, and Data Visualization • [www.metabase.com](https://www.metabase.com)

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4. **Streamlit**




<https://medium.com/@emirhanserveren/providing-value-to-data-storytelling-with-streamlit-454137f863e1>

 Providing Value to Data Storytelling with Streamlit • medium.com

<https://blog.streamlit.io/create-an-animated-data-story-with-ipyvizzu-and-streamlit/>

 Create an animated data story with ipyvizzu and Streamlit • blog.streamlit.io

<https://docs.streamlit.io/get-started/tutorials/create-an-app>

 Create an app - Streamlit Docs • docs.streamlit.io


Components: <https://docs.streamlit.io/develop/api-reference>

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### 3. **Voila**

<https://github.com/voila-dashboards/voila>

 GitHub - voila-dashboards/voila: Voilà turns Jupyter notebooks into standalone web applications • github.com

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### 4. **Plotly dash**

attached document in the supported notebook folder

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## Resources:

- <https://www.datacamp.com/courses/data-storytelling-concepts>
- <https://www.thoughtspot.com/data-trends/best-practices/data-storytelling>
- <https://medium.com/dataseries/data-storytelling-examples-tutorial-a237bc116f30>
- <https://twooctobers.com/blog/8-data-storytelling-concepts-with-examples/>
- <https://www.searchenginejournal.com/data-storytelling-errors/411922/>