Infographics and Data Visualization as a Communications Tool

Hiram Henriquez, H2H Graphics & Design Inc.
Agenda

- What is an infographic/data visualization?
- The elements of an infographic
- Understanding your audience
- Choosing graphic forms
- Conceptualization and design
- Selecting color
- Tools of the trade
- 508 compliance
- Additional resources

Source: Unless otherwise noted, all text and images are creations of Hiram Henriquez
What is an infographic/data visualization?

An infographic or data visualization is any visual display intended to reveal evidence, making the invisible visible.
Good infographics/visualizations…

- show good information correctly,
- attract readers’ attention,
- don’t frustrate readers, and
- show the right amount of data.
This is a good infographic.

**USE OF PLATFORMS/APPs**

**How Users Search Online**

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed diam nonummy nibh euismod tincidunt ut laoreet dolore magna aliqua erat volutpat. Ut wisi enim ad minim.

**WHERE DO USERS TEND TO LOOK FOR INFORMATION ONLINE?**

Numbers reflect all the online platforms or devices users might use throughout their process of finding information.

- **Search Engines**
  - 75% use such as Google or Bing

- **Websites**
  - 47% specifically about the thing they're trying to find information about (such as Yelp or Amazon)

- **Social Media**
  - 41% use such as Instagram, Twitter, Facebook, or TikTok

- **Mobile Device Voice Search**
  - 25% use such as Siri

- **Smart Devices**
  - 23% such as Amazon Alexa or Google Home

- **Email**
  - 20% use such as newsletters

**CONSUMERS USE A VARIETY OF PLATFORMS OTHER THAN SEARCH ENGINES**

Platform use includes:
- Search Engine
- Website or App
- Social Media

**PREVAILING WHO USE THE PLATFORM**

- Google
- Amazon
- Facebook
- Instagram
- Yahoo
- Twitter
- Bing
- Fox News
- LinkedIn
- Yelp
- New York Times
- Kayak

**WHATIFICATIONS USE MULTIPLE PLATFORMS TO LOOK FOR INFORMATION ONLINE**

- 68%
- 64%
- 35%
- 25%
- 26%
- 16%
- 12%
- 10%
- 7%
- 5%
- 3%
- 2%
- 1%
- 0%

**HOW DO USERS TEND TO LOOK FOR INFORMATION ONLINE?**

- Young people use social media to find information almost as much as they use search engines...
- Multiple platforms 35%
- Leaning multiple platforms 11%
- Neutral 26%
- Leaning one platform 16%
- One platform 12%

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This is NOT a good infographic.

- Data dump
Bad versus good

- Bad example

- Good example

Source: Alberto Cairo

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Elements of an infographic
Elements of an infographic

- **Headline**
- **Lead-in/Intro**
  - Let’s Not Get Too Excited...
  - If the Twitter community was 100 people...
- **Label**
- **Body**
  - 20 dead (empty accounts)
  - 50 lazy not tweeted in the last week
  - 5 loud mouths creating 75% of the tweets
  - only 5 with more than 100 followers

Source: Alberto Cairo

Source: www.visualizedthebook.com // v1.2

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an American Institutes for Research
THE NORTH AMERICAN BISON
A New National Symbol

FAST FACTS
- Population: Estimated 54,000
- Height: 6 ft at the shoulder
- Length: 10-12 ft
- Weight: 900-2,000 lbs.
- Vertical jump: 6 feet
- Running speed: 35-40 mph
- Lifespan: 18-22 years (male)

MATURITY: June-September
- Gestation: 270-285 days
- Calves: 1-2

HISTORY & RANGE
Though it once grazed the plains of most of the U.S., in the millions, the population dwindled to a little over a thousand at the turn of the 20th century. It decline coincided in large part with its mass slaughter during the years of the nation's westward expansion:

- 1866: 18 million
- 1870: 5.5 million
- 1889: Almost wiped out
- 2000: (est. 500,000)

A SLOW RETURN
Through preservation efforts, the bison were slowly restored into the wild. An estimated 54,000 bison now exist across 50 states and contribute to a multimillion dollar sector of American agriculture.

IN PRIVATE LANDS 500,000

IN PUBLIC LANDS 40,000

U.S. WESTERN EXPANSION

1866: 47 U.S. States
1870: Canada, 10,000

1936-37
54,000

1893
23,500

Early extinctions 3,000

Sources
Credit

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American Institutes for Research
Understanding your audience

The complexity of your infographic or data visualization should be based on your audience’s experience.
Complex versus simple

- Complex example

- Simple example
Also remember…

- If you need a Spanish version of your graphic, Spanish translations are usually longer.
- Not all Spanish/Latino cultures speak the same iteration of Spanish, so use phrases common across all versions of the language as much as possible.
- Scientific words may need to be replaced by more common ones.
Choosing graphic forms

At the core of data visualization lies the idea of “visual encoding.”
Choosing graphic forms

- Charts, graphs, or maps
  - Present statistical data or show location.

- Infographics (illustrated)
  - Show how something looks or works or depict a process.

- Data Visualization/Data-Driven Story
  - Visualize statistical data in a creative manner.
Misusing graphic forms

- Incorrect example

Although your data might work with multiple chart types, it’s up to you to select the one that ensures your message is clear and accurate.

How Music Preferences Have Changed in Two Decades

Music styles preferred by University of Miami students. Survey based on interviews with 1,000 students. 

**SOURCE:** WishfulThinkingData Inc.

Source: Alberto Cairo
Using graphic forms

- Correct example

Data is only accessible if you know how to visualize it and give context.

How Music Preferences Have Changed in Two Decades

Music styles preferred by University of Miami students. Survey based on interviews with 1,000 students.

SOURCE: WishfulThinkingData Inc.

1994 | 2014

40% – Hard Rock

30% – Samba

20% – Hip-Hop

10% – Reggaeton

0% – Country Classic

Source: Alberto Cairo

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American Institutes for Research
Accurate representation of data

- Based on William Cleveland and Robert McGill’s research

Accurate representation of data

- Present straightforward statistical data or show location.

Source: Alberto Cairo
General representation of data

- Based on William Cleveland and Robert McGill’s research

General representation of data

- Present general statistical data or show location.

**CHOROPLETH MAP**
Percentage of people who ate at least one serving of boiled octopus last year

- 0-25%
- 26-50%
- 51-75%
- 76-100%

**DOT MAP**
Every dot represents a restaurant that served boiled octopus at least once last year

**PROPORTIONAL SYMBOL MAP**
People who ate at least one serving of boiled octopus last year

- 1,000,000
- 250,000

**ISOPLETH MAP**
Most common temperature at which octopuses are boiled

- 116-120°C
- 111-115°C
- 106-110°C
- 100-105°C

Source: Alberto Cairo
Infographics (illustrated)

- Show how something looks or works or depict a process.

Peat Soil Development and Loss

Peat soil, also called muskeg soil, blankets the limestone bedrock beneath much of the Everglades and is the foundation upon which key habitats exist.

When drained, peat soil degrades rapidly resulting in elevation loss and habitat changes. Peat degradation also releases atmospheric carbon dioxide and pollutants, including sulfur and phosphorus.

Peat soil development and elevation change from pre-drainage Everglades to present.

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at American Institutes for Research
Data visualization/data-driven story

- Visualize statistical data in a creative manner.
Exploring graphic forms: https://datavizcatalogue.com

Cleveland and McGill’s scale is usually a good starting point, but you’ll need to try different graphic forms, then choose the most appropriate one.

Source: https://datavizcatalogue.com
Conceptualization and design

The key to any visual design is the presentation of a cohesive, structured, readable, and understandable composition.
Main things to consider

- Think about the audience and the publication—that is, user experience.
- Think of the questions your graphic should help readers answer: what, when, why, and how.
- The nature of the information can guide you when choosing the most appropriate ways of telling the story.
- Visualization doesn’t simplify. It clarifies.
- Don’t use too many different fonts.
Steps in designing your graphic

- Research.
- Write the main headline and main introduction first. That should be your guide to what you really need to show and what you can leave out.
- Have a dominant element and establish hierarchy so the audience reads the content in the order you want.
- Separate graphics into block sections.
- Line up elements and use unity and variety.
Have a dominant element and establish hierarchy so the audience reads the content in the order you want.

Source: Alberto Cairo

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[Image of a diagram showing an accident involving a volleyball player, with annotations and text explaining various points related to the accident, such as the positions of the players and the trajectory of the ball.]
Separate graphics into block sections.
Use unity and variety in colors, text, and imagery.

Source: Alberto Cairo

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Stick to three fonts at most: one for main headline, one for subheads, and one for body copy.
Selecting color
If using a photo in the design, the best bet is to use a few colors from the photo for your charts or maps.
Color should be used mostly for charts, maps, and illustrations. Only use color in text for main headline, subheads, or for highlighting words in body copy.
Black can be a color as well if used boldly.
Six basic color schemes

COLOR WHEEL

THE 6 COLOR SCHEMES

- Monochromatic
- Analogous
- Complementary
- Triadic
- Split-Complementary
- Tetradic
Adobe’s color tool
https://color.adobe.com/create/color-wheel

Source: https://color.adobe.com/create/color-wheel
Tools of the trade
Tools of the trade

Common software includes:

- Adobe Illustrator (charts, maps, vector illustrations)
- Adobe InDesign (publication design)
- Adobe Photoshop (photography, photo illustrations)
- Adobe Acrobat (print setup, 508 compliance)
- Flourish or Tableau (interactive graphics for web)
508 compliance
508 compliance

- Web accessibility, or eAccessibility, is the inclusive practice of ensuring there are no barriers that prevent interaction with, or access to, websites on the World Wide Web by people with physical disabilities, situational disabilities, and socio-economic restrictions on bandwidth and speed.

- A brief tutorial on how to use Adobe InDesign and Acrobat for eAccessibility design:
  https://www.dropbox.com/scl/fi/765bnmyonikpkzf7qca2l/Fact-Sheets_Video4.mp4?rlkey=3kkm9tilo9dbzvzlx92d29o1s&dl=0

Additional resources
Additional resources

Adobe Illustrator, InDesign, and Photoshop video tutorials are available at the Dropbox link below. They cover the creation and stylizing of 13 different chart forms, three styles of maps, and illustrations of animals, people, and things (Illustrator), as well as fact sheet design (InDesign).

https://www.dropbox.com/scl/fo/gfrwx3flito9c37tsnroc/h?rlkey=2tidk55t2r78auwqadp6cmhdy&dl=0
Freevectormaps.com

Download thousands of high-quality vector maps with simple licensing options at https://freevectormaps.com.

Source: https://freevectormaps.com
Flourish

A series of training videos guide you through Flourish’s templates and features to help you become successful with this platform. The Flourish beginner series is available to all users for free and is suited to anyone who is new to Flourish or would like to refresh their skills.

https://flourish.studio
https://flourish.studio/resources/training/
Tableau Public

Tableau Public is a free platform to explore, create, and publicly share data visualizations online.

https://public.tableau.com/app/discover
https://public.tableau.com/app/resources/learn

Source: https://public.tableau.com/app/discover
Questions?
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