Infographics, Communicate Information with Graphics

Jane Zhao
Digital Media Commons
Fondren Library

Photo: Qiwei Li
9. Would you be interested in taking a library short course on:

<table>
<thead>
<tr>
<th>#</th>
<th>Answer</th>
<th>Response</th>
<th>%</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Zotero</td>
<td>162</td>
<td>21%</td>
</tr>
<tr>
<td>2</td>
<td>Mendeley</td>
<td>82</td>
<td>10%</td>
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<tr>
<td>3</td>
<td>EndNote</td>
<td>145</td>
<td>18%</td>
</tr>
<tr>
<td>4</td>
<td>GIS</td>
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<td>5</td>
<td>Visualizing data</td>
<td>270</td>
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<tr>
<td>6</td>
<td>Creating infographics</td>
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</tr>
<tr>
<td>7</td>
<td>Digital storytelling</td>
<td>181</td>
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<tr>
<td>8</td>
<td>Library research methods</td>
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</tr>
<tr>
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<td>Navigating the library website</td>
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</tr>
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<td>Specific database(s) - (please specify)</td>
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<td>2%</td>
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<tr>
<td>11</td>
<td>Other (please specify)</td>
<td>19</td>
<td>2%</td>
</tr>
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</table>
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<table>
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<tr>
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<td>Other (please specify)</td>
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</table>
Objectives

- Learn the best practices of information design
- Be aware the handy tools for creating Infographics and Data Visualization
Outline

- **What** is Infographics? What is Data Visualization?
- **Why** Infographics work?
- **What** makes a good Infographic?
- **Information** design best practices.
- **Tools** for creating Infographics and Data Visualization.
- **Data** sources.
INFOGRAPHICS AND DATA VISUALIZATION
What is Infographics?

Check out some examples...
An Example of Infographics

Discover
Learn
Create
Publish

Your projects, our passion!
1ST FLOOR CONSTRUCTION

An Example of Infographics
What is Data Visualization?

Check out some examples...
An Example of Data Visualization
Data Visualization is a Separate Design Element Used in the Design of Infographics.
WHY INFOGRAPHICS WORK?
50-80% of Human Brain is Dedicated to Visual Processing.
The Human Brain is a Pattern Recognition Machine!

This Comes from the Evolution of a Survival Instinct!
## A Table of Data, Hard to See its Pattern and Trend.

### DMC Equipment Circulation Statistics

<table>
<thead>
<tr>
<th>Month</th>
<th>2009</th>
<th>2011</th>
<th>2013</th>
<th>2015</th>
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<tr>
<td>January</td>
<td>133</td>
<td>166</td>
<td>272</td>
<td>240</td>
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<tr>
<td>February</td>
<td>183</td>
<td>230</td>
<td>368</td>
<td>456</td>
</tr>
<tr>
<td>March</td>
<td>227</td>
<td>294</td>
<td>457</td>
<td>497</td>
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<tr>
<td>April</td>
<td>207</td>
<td>310</td>
<td>461</td>
<td>588</td>
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<tr>
<td>May</td>
<td>75</td>
<td>119</td>
<td>139</td>
<td>214</td>
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<tr>
<td>June</td>
<td>92</td>
<td>127</td>
<td>165</td>
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<td>July</td>
<td>78</td>
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<td>August</td>
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<td>September</td>
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<td>October</td>
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<td>November</td>
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<tr>
<td>December</td>
<td>114</td>
<td>157</td>
<td>249</td>
<td></td>
</tr>
</tbody>
</table>
DMC Equipment Circulation Statistics

Convert the Data to a Bar Chart, Easy to See the Pattern.
Convert the Data to a Line Chart, Easy to See the Trend.

DMC Equipment Circulation Statistics

- Blue line: 2009
- Red line: 2011
- Green line: 2013
- Purple line: 2015
People are Likely to Remember 65% of Information if It is Presented as a Text Combined with a Relevant Image.

People are Likely to Remember 10% of Information if It is Presented as a Text or Audio Only.
“Of all methods for analyzing and communicating statistical information, well-designed data graphics are usually the simplest and at the same time the most powerful.”

Eward Tufte, Yale Professor
WHAT MAKES A GOOD INFOGRAPHIC?
1

Keep it simple

http://www.slideshare.net/bethanyvsmith/pecha-kucha-presentation-zen?qid=c59c4f27-0731-4a00-98b5-396ec71bd13a&v=&b=&from_search=1
“Simplicity means the achievement of maximum effect with minimum means.”

- Dr. Koichi Kawana – artist, designer, and architect
A Data Visualization is

DATA

SORTED

ARRANGED

PRESENTED VISUALLY
Use a simple text message combined with a relevant image.
Getting information off the Internet is like taking a drink from a fire hydrant.

Mitchell Kapor
Make it unique!
A good infographic leaves you feeling informed or delighted.

- Krum, Randy, Cool Infographics, P52
DATA VISUALIZATION BEST PRACTICES
Bar Chart for Ranking or Time Series

2015 DMC Equipment Circulation Statistics

- January: 240
- February: 456
- March: 497
- April: 588
- May: 214
- June: 188
- July: 211
- August: 194
- September: 343
- October: 404
- November: 204
- December: 211
Avoid 3-D Bar Chart

2015 DMC Equipment Circulation Statistics

January: 2
February: 3
March: 22
April: 588
May: 21
June: 28
July: 211
August: 194
September: 343
October: 404
November: 214
December: 497

Avoid 3-D Bar Chart
Avoid 3-D Bar Chart

Show Me the Numbers, P4
Stacked Bar Chart for Multiple Part-to-Whole Relationships

DMC Equipment Circulation Statistics

- December
- November
- October
- September
- August
- July
- June
- May
- April
- March
- February
- January


Values: 0, 500, 1000, 1500, 2000, 2500, 3000, 3500, 4000
Pie Chart for Part-to-Whole Comparisons

2014-2015 Library Instruction Session Statistics

- **DMC**: 29%
- **GIS**: 16%
- **Kelley Center**: 12%
- **Other Departments**: 3%
- **Woodson**: 16%
- **Reference**: 24%

Legend:
- DMC
- GIS
- Kelley Center
- Other Departments
- Woodson
- Reference
Pie Chart for Part-to-Whole Comparisons

2014-2015 People Trained by Library Instruction Sessions

- Reference: 28%
- Others: 16%
- GIS: 11%
- Kelley Center: 6%
- Woodson: 15%
- DMC: 24%

Legend:
- Reference
- Others
- GIS
- Kelley Center
- Woodson
- DMC
Line Chart for Time Series

DMC Equipment Circulation Statistics

- 2009
- 2011
- 2013
- 2015
Keep the Line Chart to Four or Fewer. Otherwise the Chart is Too Busy!

DMC Equipment Circulation Statistics

- 2009
- 2010
- 2011
- 2012
- 2013
- 2014
- 2015
Use the Practice of Paneling and a Constant Scale for Consistency if You have More Than Four Lines.
Stacked Bar Chart for Multiple Part-to-whole Relationships
Stacked Bar Chart for Multiple Part-to-whole Relationships

- December
- November
- October
- September
- August
- July
- June
- May
- April
- March
- February
- January
A Mix of Bar Chart and Line Chart
Use Photoshop or Illustrator to Color-proof for Color Blindness

Adjusting design for color blindness
A. Original image  B. Color-blind proof  C. Optimized design

Use Color Schemes That Are Color-blind Friendly.

**Set of colors that is unambiguous both to colorblinds and non-colorblinds**

<table>
<thead>
<tr>
<th>Original</th>
<th>Simulation</th>
<th>Protan</th>
<th>Deutan</th>
<th>Tritan</th>
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<td><img src="#" alt="reddish Purple" /></td>
<td><img src="#" alt="reddish Purple" /></td>
</tr>
</tbody>
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**Fig. 16 Colorblind barrier-free color pallet**

Use Color Brewer as a Reference to Create Color-blind Friendly Color Scheme

TOOLS FOR CREATING INFOGRAPHICS AND DATA VISUALIZATION
# Desktop Tools – Vector Graphics

<table>
<thead>
<tr>
<th>PowerPoint</th>
<th>Excel</th>
<th>Adobe Illustrator</th>
<th>Adobe InDesign</th>
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</thead>
<tbody>
<tr>
<td><img src="image" alt="PowerPoint" /></td>
<td><img src="image" alt="Excel" /></td>
<td><img src="image" alt="Adobe Illustrator" /></td>
<td><img src="image" alt="Adobe InDesign" /></td>
</tr>
<tr>
<td>Gephi(free)</td>
<td>OmniGraffle</td>
<td>InkScape(free)</td>
<td></td>
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</table>
Our Mission

The DMC supports the creation and use of multimedia in education, scholarship, and creative expression. Working toward this end, we provide services that include hands-on training, assistance with digital projects, and access to the essential tools for creating digital resources such as digital video and audio, images and animations, infographics, PowerPoint presentations, web pages, and more.

DMC Offers Hands-on Training on Media Editing and Assistance with Various Digital Projects

1. Help with using DMC equipment
2. Demonstration of DMC equipment
3. Assistance on video/audio editing, and graphics creation
4. Consultation on patron’s project
5. Short courses for using digital tools

DMC Provides Access to the Essential Tools and Facilities for Creating Digital Media

1. Poster printing
2. Skyping/Podcast
3. Equipment available for checking out
4. Lecture/interview recording
5. Photo taking
6. iMovie, Final Cut Pro, Photoshop, Illustrator, InDesign, and more

dmc.rice.edu | dmc-info@rice.edu | 713-348-3635

Your Projects!
Our Passion!
### Desktop Tools – Image Editing

<table>
<thead>
<tr>
<th>Adobe Photoshop</th>
<th>Gimp (free)</th>
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<tr>
<td>Pixelmator</td>
<td>Acorn</td>
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</table>
Gephi

• https://dhs.stanford.edu/tools/maps-graphs-and-workshops/
Online Tools

- Google Chart [https://developers.google.com/chart/](https://developers.google.com/chart/)
- Tableau Public [https://public.tableau.com/s](https://public.tableau.com/s)
Online Infographics Resources

• Periodic Table of Visualization Methods
• The Noun Project
• 22 free tools for data visualization and analysis
• infographics world
More Sample Infographics

• Cool infographics
  http://www.coolinfographics.com/

• Edward Tufte
  http://www.edwardtufte.com/tufte/posters

• Information is beautiful
  http://www.informationisbeautiful.net/
  by David McCandless, an author and designer.
Data Sources

• data.gov

• FactBrowser
  http://www.factbrowser.com/

• Google Public Data
  http://www.google.com/publicdata/directory

• Wolfram Alpha
  http://www.wolframalpha.com/

• Wikipedia
  https://en.wikipedia.org/wiki/Main_Page
On Campus Resources

- Data Visualization Center
- Kelly Center for Government Information, Data, and Geospatial Services
- GIS Data Center
Summary

- A good infographic should be useful, sound, and beautiful.
- **Best practices**
  - Information Design
    - Keep it simple
    - Use a simple text combined with a relevant image
    - Make it unique
  - Data Visualization
    - Bar Chart – for ranking and time series, starting with zero baseline, avoid 3-D
    - Pie Chart – for part-to-whole comparisons, limiting to 5 slices, avoid 3-D
    - Line Chart – for time series, limiting to 4 or less
- **Use color schemes** that are color-blind friendly
- **Tools**
  - PowerPoint, Excel, Illustrator, InDesign, Gephi, Photoshop, Gimp
  - Wordle, Google Chart, Tableau Public
Infographics, Communicate Information with Graphics

Photo: Qiwei Li