Chapter 9
Creating Visuals and Data Displays

- Using Visuals
- Visual Design Guidelines
- Integrating Visuals
Visually

- Help make data meaningful
- Help communicate points
- Enhance oral presentations
Use Visuals To…

- Present ideas completely
- Find relationships
- Make points vivid
- Emphasize material
- Present material concisely, with less repetition

Every visual should tell a story
Visual Design Guidelines

1. Check quality of data
2. Determine story you want to tell
3. Choose visual that fits the story
4. Follow conventions for designing visuals
5. Use color and decoration with restraint
6. Be sure that visual is accurate, ethical
1. Check Quality of Data

- Check data comes from reliable source
- Check you have data for all factors you should consider
- Do not use visuals of unreliable data
2. Determine Story You Want to Tell

Good stories may
- Support a hunch you have
- Surprise or challenge knowledge
- Show unexpected trends or changes
- Have commercial or social significance
- Provide information needed for action
- Be relevant to audience
2. Determine Story You Want to Tell

To find stories
1. Focus on a topic
2. Simplify the data on that topic and convert number to simple units
3. Look for relationships and changes
4. Process the data to find more stories
3. Choose the Right Visual for the Story

- Use table when audience needs exact values
- Use pie chart to show parts of a whole

<table>
<thead>
<tr>
<th>U.S. Children’s Sizes</th>
<th>European Children’s Sizes</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>27</td>
</tr>
<tr>
<td>10</td>
<td>28</td>
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<td>11</td>
<td>29</td>
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<td>12</td>
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<td>13</td>
<td>31</td>
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<tr>
<td>1</td>
<td>32</td>
</tr>
<tr>
<td>1 1/2</td>
<td>33</td>
</tr>
<tr>
<td>2</td>
<td>34</td>
</tr>
</tbody>
</table>
3. Choose the Right Visual for the Story, continued…

- Use bar chart to compare items, show relationships
- Use paired charts to tell complex stories
3. Choose the Right Visual for the Story, continued…

- Uses line charts to
  - Compare items over time
  - Show frequency or distribution
  - Show correlations
3. Choose the Right Visual for the Story, continued…

- Use photographs to
  - Create a sense of authenticity
  - Show item in use

- Use drawings to
  - Show dimensions
  - Emphasize detail
3. Choose the Right Visual for the Story, *continued*...

- Use maps to emphasize location
3. Choose the Right Visual for the Story, continued…

- Use Gantt charts to show timelines

1. Determine criteria for exploring each option
2. Select most feasible option based on criteria
3. Determine what levels of training, education and communication will be necessary for implementing the option
4. Develop plan for assessing option implementation
5. Develop an implementation plan
6. Determine resources and responsibilities are necessary to complete tasks
7. Determine critical path to estimate time required to complete all tasks

Week:
- 9/10
- 9/17
- 9/24
- 9/30
- 10/7
- 10/14

Events:
- Kick-off Meeting
- Interim Meeting
- Final Presentation

- bi-weekly status calls
3. Choose the Right Visual for the Story, *continued*...

- Perspective makes graphs hard to read
4. Follow Conventions for Designing Visuals

Six Parts of Every Visual

1. Title that tells story visual shows
2. Clear indication of what data are
3. Clearly labeled units
4. Labels or legends identifying axes, colors, symbols, etc.
5. Source of data used to create visual
6. Source of visual if not your work
5. Use Color and Decoration with Restraint

- Audiences interpret color based on contexts
- Color connotations vary among cultures and professions
  - Red = go in China; stop in U.S.
  - Blue = masculinity in U.S.; criminality in France; strength/fertility in Egypt
- Use minimum shading and lines
- For B&W graphs, use shades of gray
6. Be Sure Visual is Accurate, Ethical

- Make sure audience does not have to study visual to learn main point
- Distinguish between actual and estimated or projected values
- Include the context of data
- Avoid perspective and 3-D graphs
- Avoid combining with multiple scales
- Use images that are bias-free
Integrating Visuals into Your Text

- Refer to every visual in your text
- Refer to the table or figure number, not the title
  - Ex: Table 10 shows a detailed comparison…
  - Ex: Data in Figure 6 reveals a marked trend of…
- Put visual as soon after reference as space and page design permit
  - Ex: As Figure 3 shows (page 10), …
  - Ex: (See Table 2 on page 14)
Integrating Visuals into Your Text, continued...

- Summarize main point of visual before the visual itself
  - Amount of discussion depends on audience, complexity of visual, and importance of point
- After visual, evaluate the data, discuss its implications
  - Weak: *Listed below are the results.*
  - Better: As Figure 4 shows, sales doubled in the last decade.