Berkeley Business Process Management Office

DATA VISUALIZATION CHECKLIST

CONTENT

☐ **Data Visual is clear and concise.**

☐ **Data Visual is audience-centric.**

- Deliver information that is relevant to readers.
- Eliminate or reduce jargon.

☐ **Tells the story.**

- All graphs need a narrative: aim for one message versus many.
- Graphs should have a "so what?"-- practical or statistical significance to warrant their presence.
- Stories include plot, characters, and conflict.
- Present contextualized data: show causality, mechanism, structure, explanation, and comparison to help the viewer understand the significance of the data.

☐ **Data selected carefully.**

- Use need-to-have versus nice-to-have data.
- Avoid too many graphics of unimportant information as they dilute the power of visualization.
- Survey data: Use modesty in the study of human behavior; don't over-generalize, avoid absolutes.

☐ **Graphs and charts used for big data, not little data.**

- For "little data" use words and numbers (table, sentence); don't necessarily need to recreate through visuals.

☐ **The type of graph is appropriate for data & level of precision.**

- When precision is important, choose a type of graph that displays differences through length or points along a line (e.g., bar charts, dot plots). When precision is less important, you can use a graph that displays differences through angles or area (e.g., pie charts, circle charts).
- Use bar charts to visualize achievement of an objective.
- Opt for time series to best display patterns or change over time.
- If horizontal axis is a measure with a natural sequence, use line graph or scatter plot.

☐ **Sufficient documentation provided.**

- Cite sources and authors to give credibility and integrity to your presentations.
- Link to raw data when possible.

COLOR

☐ **Intentional color scheme, not random.**

- Use Berkeley Brand template.
- Use sites like ColorBrewer2.org to find color schemes suitable for printing in black-and-white and for color-blindness.

☐ **Color is used to highlight key patterns.**

- Action colors should guide the viewer to key parts of the display.
- Less important or supporting data should be a muted color.
- No more than 3 colors; use shading and contrast instead to highlight instead.
- Don't use red unless you mean it to signify danger/stop/bad.

ARRANGEMENT

☐ **Spatial flow is intuitive to the reader.**

- Improper arrangement of graph elements can confuse readers at best and mislead viewers at worst. The human brain sees position as the most important factor when it's looking at data. After that comes color, size and shape.
- Use layout to set priorities for readers.
- Individual chart elements (graph type, text, arrangement, color, and lines) work together to reinforce a unified takeaway message.
- Time is visualized as moving left to right, often in a linear fashion.
- Data is intentionally ordered by frequency counts, by groupings or bins, by time period, alphabetically, etc.

☐ **Proportions are accurate.**

- A viewer should be able to take a ruler to measure the length or area of the graph and find that it matches the relationship in the underlying data.
- Axes are clear and intervals are equidistant.
- Graph is two-dimensional: Avoid three-dimensional displays, bevels, and other distortions.

☐ **Display is free from distractions.**

- There is a clear path for the eye to move. Avoid distracting graphics and animations that cause visual meandering.
- Graph is free from clipart or other illustrations used solely for decoration.
- Know when to use logo and when to leave it out.
- Remove chartjunk such as gridlines. Excessive lines— gridlines, borders, tick marks, and axes—can add clutter or noise to a graph, so eliminate them whenever they aren't useful for interpreting the data.
- White space is desired on graphs. Open space vs cluttered.

LABELS & LINES

☐ **Graphs don't contain much text, so existing text encapsulates your message and packs a punch.**

☐ **Descriptive title is left-justified in upper left corner.**

- For the title, rather than a generic phrase, use a descriptive sentence that encapsulates the graph's finding or "so what?"
- Short (6- 12 words), clear titles enable readers to comprehend takeaway messages while quickly skimming the graph.
- Be precise and consistent in naming every object.

☐ **Text is scannable.**

- Too much text can overwhelm readers.
- Orient graph so the data and text are easiest to read.
- Black/very dark text against a white/transparent background is easiest to read.
- Text size is hierarchical: Titles > subtitles or annotations > labels > axis labels > source information
- The smallest text is at least 9 point font size on paper, at least 20 on screen.

☐ **Labels are clear and used sparingly.**

- Subtitles and call-out text within the graph can add explanatory and interpretive power to a graph. Use them to answer questions a viewer might have or to highlight one or two data points.
- Focus attention by removing the redundancy in labelling.
- Few numeric labels need decimal places.
- Position data labels near the data rather than in a separate legend.
- Horizontally-oriented labels are easier to read than vertically-oriented labels.

BPMO METRICS & REPORTING TEAM'S TABLEAU TEMPLATE GUIDELINES UTILIZING BERKELEY BRAND CONCEPTS

Attribute	Guideline
Text	
Font	Tableau Book
Chart Title	Left justified, 16 pt font
Text in graph	Gray
Color	
Color palette	Berkeley Brand (Orange-Blue Diverging) OR Use Tableau Preference .tps file to create a custom color palette in Tableau Desktop.
Bars	Berkeley Blue (Blue)
Primary line	Blue
Secondary line	Orange
Background	White
Graph Attributes	
Legend placement	Right of graph
Table placement	Depends
Table content	Time and data (for graphs over time)
Notes and source box	Bottom of graph, containing: Target Analysis Other Notes Sources
Format for Dashboards	
Header	Tableau Book
Header unit title	18 pt font, left justified
Footer	8 pt font