Business analytics design guidelines

Context

What is the purpose?

If you can't describe in a sentence what the dashboard is trying to say, there's a problem. Is the goal data presentation or exploration?

Presentation
Dashboards for presentation purposes show viewers the current status of whatever KPI's they need to achieve their immediate goals. They are not interactive.

Exploration
Dashboards that are designed for exploration help users search, sort and filter data so they can identify patterns, trends and outliers. They are interactive.

Who is the intended audience?

Knowing your audience is important for effective communication. Is your dashboard for domain experts or casual viewers?

Domain experts
Domain experts have a deep understanding of the problem the dashboard is designed to help with. They are typically willing to accept training on how to use and interpret the dashboard if required.

Casual viewers
Casual viewers have a shorter attention span and need information to be presented as clearly and simply as possible.

What is the delivery method?

It has been said that the medium is the message. Every design decision in your dashboard must consider the screen size, aspect ratio, proximity of the viewer and what interaction methods are available.

Information design

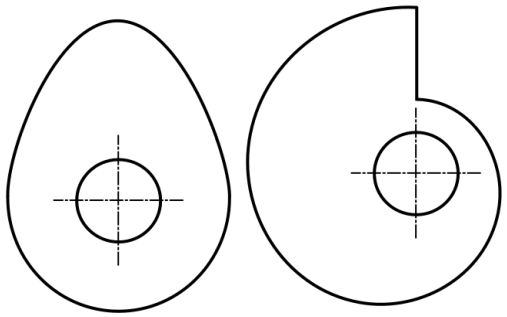
The goal of a dashboard is to encode information with visual cues that are easy for viewers to perceive and interpret. Information should be presented in a logical order. The most important information should be the first thing you notice. Supporting details should not distract viewers from their overall goal.

Business importance:
Poor information design leads to cognitive overload, confusion and disengagement. It is important to think about how information is presented to maximize comprehension and engagement.

Visual design

The essence of a powerful dashboard relies on your decisions of what to emphasize and what to hide. Effective visual design drives adoption by presenting every element in a way that fits the purpose, gives meaning, and supports the overall goal.

Business importance:
Utility satisfies needs, but beauty drives desire. Don't simply make something that works. Create aesthetically pleasing experiences that convey meaning in their form and function. Good visual design engages users and builds trust.



Accessible design

Can the majority of people use the product? What about everyone else? Accessible design helps organizations deliver superior services by ensuring usability for everyone.

Here are some statistics:
- 20 million Americans have difficulty lifting or grasping. This could impact their use of a mouse or keyboard.
- 8.1 million Americans have a vision impairment. These people might rely on a screen magnifier or a screen reader, or might have a form of color blindness.
- 7.1 million Americans have a hearing impairment. They might rely on transcripts or captions for audio and video media.

Source: (http://www.interactiveaccessibility.com/accessibility-statistics)

Design guidelines checklist

Context

What is the purpose?

- [ ] It is easy to explain the overall purpose of the dashboard.
- [ ] Is the dashboard for presentation or exploration?

Who is the intended audience?

- [ ] Domain experts
- [ ] Casual viewers

What is the delivery method?

- [ ] Screen display vs. printed page?
- [ ] Viewing distance near vs. far?
- [ ] Interactive vs. not interactive?
- [ ] Desktop vs. mobile?
- [ ] Portrait vs. landscape?
- [ ] Mouse click vs. touch screen vs. voice?
- [ ] Real time vs. preloaded data?

Information design

- [ ] The most important information is the first thing you notice.
- [ ] Non-critical information is provided on an "as needed" basis.
- [ ] The dashboard has good user flow. Visualizations presenting similar insights are grouped together.
- [ ] Easy to use filters help viewers focus on items of interest.
- [ ] Every chart has a clear and descriptive title.
- [ ] Everything is appropriately labeled.
- [ ] Charts include annotations that provide context and insights.
- [ ] Data is intelligently sorted according to the task.
- [ ] KPI's include comparison values and directional indicators.
- [ ] Tables use conditional formatting to highlight outliers.
- [ ] Data is rounded to an appropriate number of digits of precision for the task.
- [ ] All numbers include their units of measurement ($, km, days, etc.)
- [ ] The dashboard responds quickly to user input.
- [ ] The charts are appropriate for the kind of data they are displaying.
- [ ] Everything on the page supports the user's overall goal.

Visual design

- [ ] Layout has a clear focal point that stands out at first glance.
- [ ] There is a clear path the eye follows while scanning the dashboard.
- [ ] There is a logical hierarchy of objects through size, color and shape.
- [ ] Elements are aligned in rows and columns, presenting a clean and legible dashboard.
- [ ] No unnecessary gridlines or borders on charts or tiles.
- [ ] Objects related to each others are grouped together.
- [ ] Elements not related to each other are separated by white space.
- [ ] White space separates different sections and makes the text easy to read.
- [ ] There is a simple, consistent color palette.
- [ ] Dominant colors are used sparingly.
- [ ] There is consistent visual styling across all charts, tiles and pages.
- [ ] Interactive controls (e.g. navigation, filters, links) use common design patterns.
- [ ] All headings, sub-headings, titles, labels, axes, and annotations use consistent fonts and styles.
- [ ] There are no more than 2 fonts on the page.
- [ ] Text is easily readable (not too small, sufficient contrast, no overlapping labels).
- [ ] There are no gratuitous or distracting graphics or design elements.
- [ ] Icon styles are consistent throughout the dashboard.
- [ ] All the "ink" on the dashboard is necessary for conveying information.

Accessible design

- [ ] Choose contrasting colors for background and foreground.
- [ ] Provide valuable alt text descriptions.
- [ ] Include a link to a CSV or other machine-readable format so people with impaired vision can explore the data with a screen reader.
- [ ] Visualizations should be purposeful with a descriptive title, minimal color palette, and clear labels.
- [ ] Write plainly. Avoid figures of speech, jargon, acronyms and idioms to boost comprehension.
- [ ] Be concise. Use short sentences and white space to separate information.
- [ ] Get specific. Use descriptive words for button actions so the outcome is predictable.