Dashboard Design and Data Visualization Best Practices

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Agenda

- What’s my point?, Why does it matter?, How to achieve it
- Bad dashboards and visualizations examples
- 6 dashboard and data visualizations design mistakes to avoid
What's my point?
- We’re in an age where every business event is captured, stored and can be reported on.
- We’re in an age of easy to use dashboarding and data visualisation tools where anyone can build and share content
- But not anyone can do this well......
- You should pay extra attention on how to present and visualise your data to your users to ensure it serves its intended purpose

Why does presenting data intuitively matter?
- The value of the data is severely diminished if presented non-intuitively.
- Confusing presentation may result in users misinterpreting the data and making bad decisions, adversely affecting your business
- Confusing presentation may inhibit adoption of data driven decision making
- Your company will not benefit from the investment made in the tool nor from the value hidden in the data

How......
Why does presenting data intuitively matter?
Visualization done wrong!
## Anscombe’s Quartet

- 4 sets of X & Y pairs
- Each set of X & Y columns have the same:
  - Count
  - Sum
  - Mean
  - Variance

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Anscombe’s Quartet
How?

6 Common Dashboarding and Visualization Mistakes to **Avoid**
“Simplicity is the ultimate sophistication”

- Leonardo da Vinci
Mistake #1 – Avoid Not Using Comparisons

Comparison Values and Spark Lines Give Context and Meaning

Use:
- Rates
- Averages
- Percentages
- Ratios

and comparison values:
- Actual This Week vs. Actual Last Week
- Actual vs Budget
- Actual vs Forecast
- Actual vs Predicted
- Avg. vs Avg. of the past 30 days
- % Margin
Mistake #2 – Avoid Makings Users do the Math

Looks typical right?

- Which months were below target?
- Which months were above target?
- And by how much?
Mistake #2 – Avoid Makings Users do the Math

Go the extra mile to make it great

- Shows Actuals
- Shows Good and Bad months
- Quantifies good and bad
- Uses and Overlay and dual Y Axis.
Mistake #3 Avoid Color Controversy

Why should we both change from our home kits?

Home Jerseys

Wales

Portugal
Mistake #3 Avoid Color Controversy

1 in 12 Males and 1 in 200 Females are Red Green Colour Blind

Croatia vs Portugal
Normal Vision | Color Blindness
Original | Simulate - D

Wales vs Portugal
Normal Vision | Color Blindness
Original | Simulate - P
Mistake #3 Avoid Color Controversy

Use colours AND symbols to deal with colour blindness

Enhancement Request?
Mistake #3 Avoid Color Controversy

Define your palette and override the defaults

ReportName: MySearch

sourcetype=access_combined
| eval redCount=if(status>400 AND status<600,count,0)
| eval greenCount=if(status<400 OR status>=600,count,0)
| sort count desc
| fields - count

Simple XML

<chart>
  <searchName>MySearch</searchName>
  <title>HTTP Status Count</title>
  <option name="charting.chart.stackMode">stacked</option>
  <option name="charting.fieldColors">{"redCount":0xFF0000,"greenCount":0x73A550}</option>
</chart>
Mistake #4 Avoid Sloppy Labelling

Make it idiot proof, I mean “self explanatory”!

- What is the unit of measure on the Y axis?
- Are you using a log scale? (If so, mention it)
- Are the numbers shown in K’s, M’s or B’s?
- If Currency, which currency?
- Net Revenue or Gross Revenue?
- How long is the rolling window being shown?
- How long does each bar represent?

Real Time Gross Revenue ($) last 1 hour in 4 minute buckets
Mistake #5 Avoid Bad Performance
Too Many Objects Can Cause Performance Issues

Consider the following to boost reduce load times:
• Limit the number of objects on a *single* screen
• Limit real-time searches
• Limit the time window for searches
• Specify filters to reduce the data
• Look for long-running searches and schedule them
• Look for searches eligible for report acceleration
• Use summary indexes to reduce the search load of the dashboard
• Look for commonality between searches. When found, combine several searches into one and use **post-processing** to drive several panels off one search.

Mistake #6 Avoid Bad Layout

Dashboard Flow

• Research shows that people read dashboards like a book - top left to bottom right.
• Key metrics should be at the top left
Mistake #6 Avoid Bad Layout

Orientation

- Landscape mode on a mobile will require scrolling to see content
- Are your key metrics at the top?
- Sizes to the width of the app
And Finally

“You cannot say anything about how dashboards ought to be designed without first specifying the purpose of the display”

- Stephen Few
THANK YOU