Data Visualizations in SSRS 2008 R2

Stacia Misner

Principal Consultant, Data Inspirations

5/13/2011

About Me

Stacia Misner

Consultant, Educator, Mentor, Author

smisner@datainspirations.com
Twitter: @StaciaMisner
blog.datainspirations.com

- BI consulting since 1999
- Mentoring, assessments, classroom instruction
- Works published by TechNet, SQL Server Magazine, Microsoft Press, and McGraw-Hill

Overview

- What's New in SSRS 2008 R2?
- The Good, The Bad, and The Ugly
- Visual Design Principles for Information

What's New in SSRS 2008 R2?

- Data Bars
- Sparklines
- Indicators
- Maps

Data Bars

- "Inline" bar or column chart for single data points

- Horizontal axis properties
  - Axis scope
  - Minimum/maximum values
  - Scale options

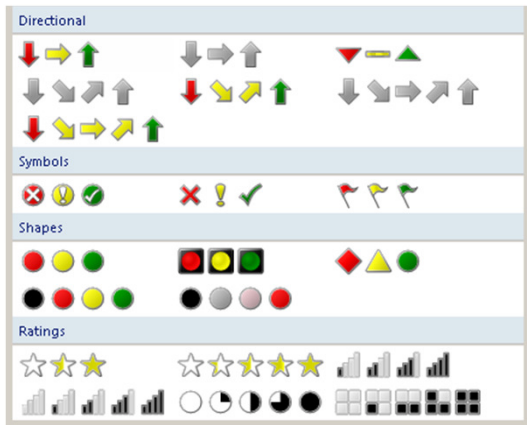- Vertical axis properties usually
not relevant

English Product Category Name	Calendar Year	Sales Amount	
Accessories	2005	$20,235	
	2006	$92,735	
	2007	$296,533	
	2008	$161,794	
Bikes	2005	$7,395,349	
	2006	$19,956,015	
	2007	$25,551,775	
	2008	$13,399,243	
Clothing	2005	$34,376	
	2006	$485,587	
	2007	$871,864	
	2008	$386,013	
Components	2005	$615,475	
	2006	$3,610,092	
	2007	$5,482,497	
	2008	$2,091,012	

Sparklines

- ## Multiple chart types for multiple data points
  - Column, line, area, shape, range
- ## Vertical axis properties
  - Axis scope
  - Minimum/maximum values
  - Scale options
- ## Horizontal axis properties
  - Axis type (category, scalar)
  - Scale direction

		Sales Amount	
Accessories	2005	20,235	
	2006	92,735	
	2007	296,533	
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	2007	25,551,775	
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	2006	3,610,092	
	2007	5,482,497	
	2008	2,091,012	

Indicators

Group	Country	Prev Yr Avg Sales Change	
Europe	France	-2.35 %	🔺
	Germany	3.28 %	🟢
	United Kingdom	-0.80 %	🔺
North America	Canada	-10.35 %	🔴
	United States	2.72 %	🔺
Pacific	Australia	-18.15 %	🔴

- Display condition-based icons in a table, matrix, or list
- Optionally use custom images
- Set indicator states using absolute or percentage values
- Link indicators to action
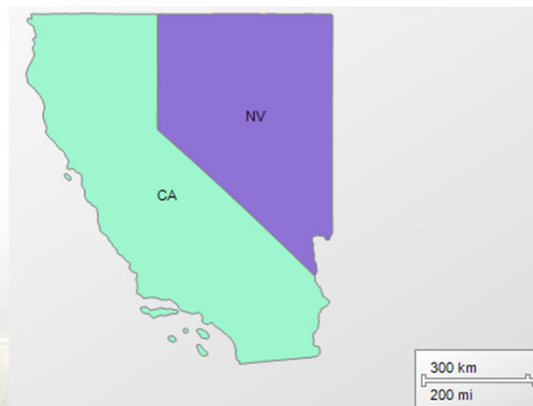
Spatial Data Visualizations

Points
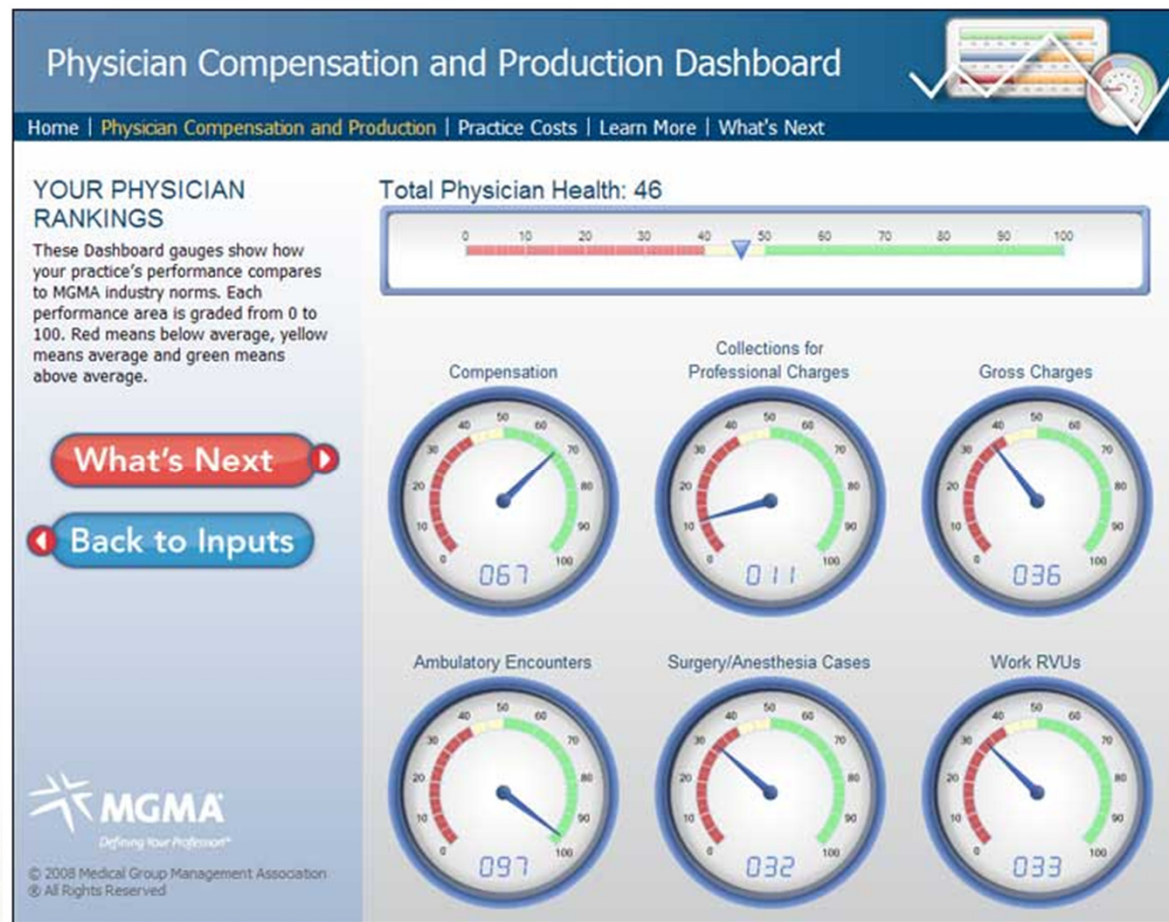

Lines

Polygons
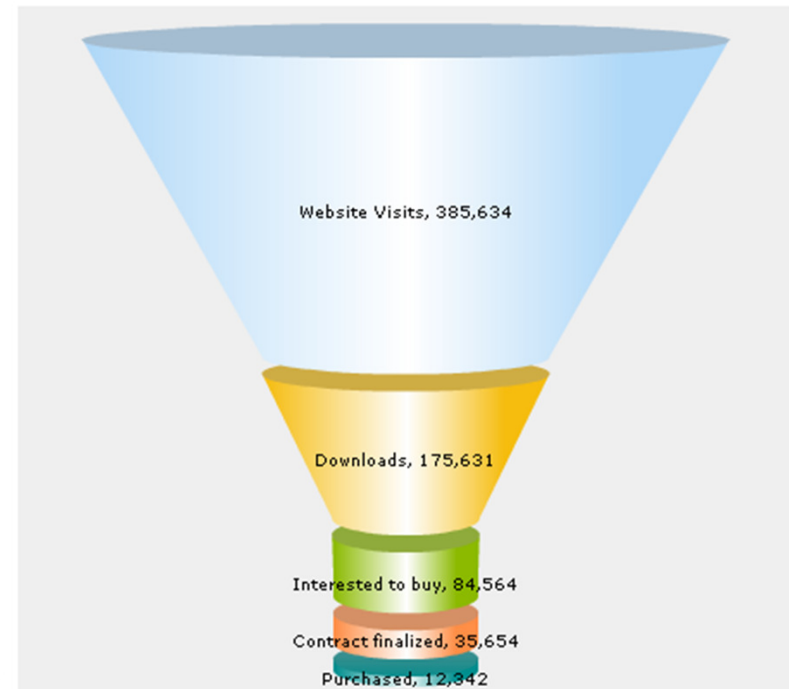
The Good, the Bad, and the Ugly

Demonstrations

The Trouble with Pie Charts

Photo: *Engadget*

Too Many Gauges

Distorted Shapes and Sizes

Sales x Category
March

Bikes, 14.78K
Components, 10.51K
Clothing, 10.74K
Accessories, 2.03K

Website Visits, 385,634
Downloads, 175,631
Interested to buy, 84,564
Contract finalized, 35,654
Purchased, 12,342
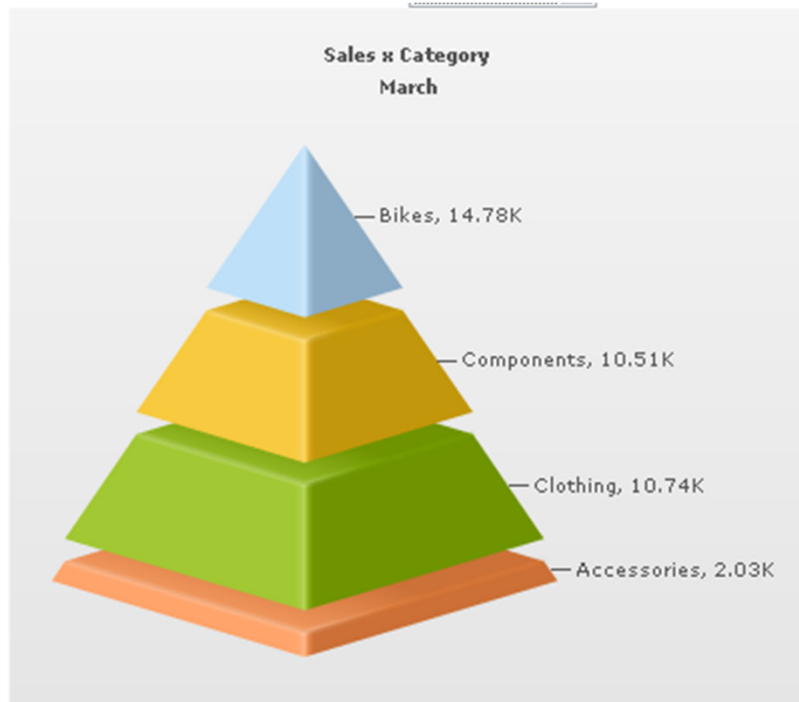
Visual Design Principles in Information

- General Principles
- Best Practices in Chart Design
- Contextual Text

General Principles

- Remember your purpose is to communicate

- Eliminate components that do not add meaning

- Reduce the emphasis of non-data ink
  - Use thin lines and soft-neutral colors
  - Apply consistency

- Highlight the most important data-ink
  - Use thicker lines – bigger fonts – italics
  - Use lines or background fill to enclose important data
  - Emphasize with different hue or color intensities

Best Practices in Chart Design

- ## Avoid skewing results

  - Always start scale at zero

  - Do not create taller but narrower chart

  - Avoid colors that overemphasize one value over another

- ## Help readers understand the data

  - Include tick marks and rules where appropriate

  - Avoid 3-D charting and pie charts

  - Remove grid lines

Working with Bar Charts

- Use horizontal bars for ranking in descending order or when category labels are too large
- Avoid vertical labels with vertical bars; use 45 degree angle or less if available
- Balance white space with width of bar
- Avoid fill patterns
- Intensify one fill color only to highlight a particular value
- Don't use border lines unless required to make bar visible
- Avoid too many categories

Working with Line Charts

- Make multiple quantitative values visually distinct
  - Use either hue or intensity of color
  - Alternatively use line style but use cautiously
- Add horizontal rules to facilitate comparisons
- Use a logarithmic scale when
  - A wide range of values exists (to better view the lowest values with the highest)
  - Ratios or percentages need to be compared (and to compare change over time for different value sets)
  - Be sure to emphasize the scale change on the y-axis

Miscellaneous Components

- Tick marks
  - De-emphasize on y-axis
  - Remove from x-axis (categories stand on their own)

- Legends
  - Include when you cannot put label next to line
  - Avoid borders
  - De-emphasize but position close to chart

Contextual Text – On Every Page

- Title
  - Differentiate from other reports with similar content
  - Include time period, measure, and key dimensions
- Dates
  - Identify range of dates covered by data
  - Stamp the report with execution time
- Contact
  - Identify the contact person for questions about report
- Page numbering
  - Include both current page and total page count

Key Points to Remember

Above all else show the data –
Edward R. Tufte

In anything at all, perfection is finally attained
not when there is no longer anything to add,
but when there is no longer anything to take away.
– Antoine de Saint-Exupery

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For attending this session and
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