GETTING STARTED

Slides are on my blog

Questions and comments are welcome throughout the presentation

Who are You?
WHO AM I?

Business Intelligence Solutions Consultant with BlueGranite from Kansas City, MO

Experience with various industries and business units including healthcare, government, education, marketing, sales, finance, HR

Passionate about data visualization

Significant experience guiding clients through early maturity phases of business intelligence

Blog: http://datasavvy.wordpress.com

Twitter: @mmarie
Crimes Committed in My Neighborhood in 2013

- Agg Assault - Domest
- Aggravated Assault:
- Armed Robbery
- Auto Theft
- Burglary - Non Resid
- Burglary - Residence
- Credit/Debit/ATM Card
- Disorderly Conduct
- Driving Under Influence
- False Information to
- Family Offense
- Fraud/Confidence Game
- Impersonation
- Intimidation
- Misc Violation
- Non Agg Assault Dome
- Non Aggravated Assault
- Possession of Drug E
- Possession/Sale/Ost
- Property Damage
- Rape
- Resisting an Officer
- Sex Off Fondle - mol
- Sex Off Incepn Exp
- Sex Off Mlcndct
- Sex Offense-others
- Stealing All Other
- Stealing Auto Parts/
- Stealing Bicycles
- Stealing From Auto
- Stealing from Build
- Stealing Shoplifting
- Strong Arm Robbery
- Trespassing
- Violation Full Order
- Weapons Law Violatio

SAY WHAT?
### MY DATA SOURCE

<table>
<thead>
<tr>
<th>Report_No</th>
<th>Reported_Date</th>
<th>Reported_Time</th>
<th>From_Date</th>
<th>From_Time</th>
<th>Offense</th>
<th>IBRS</th>
<th>Description</th>
<th>Beat</th>
<th>Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>130093651</td>
<td>12/31/2013</td>
<td>2:11:00 PM</td>
<td>12/31/2013</td>
<td>7:45:00 AM</td>
<td>640</td>
<td>23F</td>
<td>Stealing From Auto</td>
<td>115</td>
<td>KESSLER RD/W PERSHING RD</td>
</tr>
<tr>
<td>130093651</td>
<td>12/31/2013</td>
<td>2:11:00 PM</td>
<td>12/31/2013</td>
<td>7:45:00 AM</td>
<td>640</td>
<td>23F</td>
<td>Stealing From Auto</td>
<td>115</td>
<td>KESSLER RD/W PERSHING RD</td>
</tr>
<tr>
<td>130093620</td>
<td>12/31/2013</td>
<td>9:48:00 AM</td>
<td>12/31/2013</td>
<td>8:30:00 AM</td>
<td>1849</td>
<td>35A</td>
<td>Possession/Sale/Dist</td>
<td>115</td>
<td>2300 HOLMES ST</td>
</tr>
<tr>
<td>130093620</td>
<td>12/31/2013</td>
<td>9:48:00 AM</td>
<td>12/31/2013</td>
<td>8:30:00 AM</td>
<td>1849</td>
<td>35A</td>
<td>Possession/Sale/Dist</td>
<td>115</td>
<td>2300 HOLMES ST</td>
</tr>
<tr>
<td>130093433</td>
<td>12/30/2013</td>
<td>3:21:00 PM</td>
<td>12/30/2013</td>
<td>3:21:00 PM</td>
<td>401</td>
<td>13A</td>
<td>Aggravated Assault (</td>
<td>115</td>
<td>1000 E 24 ST</td>
</tr>
<tr>
<td>130093433</td>
<td>12/30/2013</td>
<td>3:21:00 PM</td>
<td>12/30/2013</td>
<td>3:21:00 PM</td>
<td>401</td>
<td>13A</td>
<td>Aggravated Assault (</td>
<td>115</td>
<td>1000 E 24 ST</td>
</tr>
<tr>
<td>130093502</td>
<td>12/30/2013</td>
<td>9:06:00 PM</td>
<td>12/30/2013</td>
<td>9:06:00 PM</td>
<td>2601</td>
<td>90Z</td>
<td>Misc Violation</td>
<td>115</td>
<td>E 27 ST/CHARLOTTE ST</td>
</tr>
<tr>
<td>130093502</td>
<td>12/30/2013</td>
<td>9:06:00 PM</td>
<td>12/30/2013</td>
<td>9:06:00 PM</td>
<td>2601</td>
<td>90Z</td>
<td>Misc Violation</td>
<td>115</td>
<td>E 27 ST/CHARLOTTE ST</td>
</tr>
<tr>
<td>130093026</td>
<td>12/18/2013</td>
<td>2:18:00 PM</td>
<td>12/28/2013</td>
<td>2:18:00 PM</td>
<td>2001</td>
<td>13A</td>
<td>Family Offense</td>
<td>115</td>
<td>3400 HARRISON ST</td>
</tr>
<tr>
<td>130093026</td>
<td>12/18/2013</td>
<td>2:18:00 PM</td>
<td>12/28/2013</td>
<td>2:18:00 PM</td>
<td>2001</td>
<td>13A</td>
<td>Family Offense</td>
<td>115</td>
<td>3400 HARRISON ST</td>
</tr>
<tr>
<td>130092849</td>
<td>12/27/2013</td>
<td>5:15:00 PM</td>
<td>12/27/2013</td>
<td>7:45:00 AM</td>
<td>1401</td>
<td>290</td>
<td>Property Damage</td>
<td>115</td>
<td>GRAND AV/E PERSHING RD</td>
</tr>
<tr>
<td>130092849</td>
<td>12/27/2013</td>
<td>5:15:00 PM</td>
<td>12/27/2013</td>
<td>7:45:00 AM</td>
<td>1401</td>
<td>290</td>
<td>Property Damage</td>
<td>115</td>
<td>GRAND AV/E PERSHING RD</td>
</tr>
<tr>
<td>130092674</td>
<td>12/27/2013</td>
<td>12:11:00 AM</td>
<td>12/27/2013</td>
<td>12:11:00 AM</td>
<td>801</td>
<td>13B</td>
<td>Non Aggravated Assault</td>
<td>115</td>
<td>1000 E 24 ST</td>
</tr>
<tr>
<td>130092672</td>
<td>12/27/2013</td>
<td>12:09:00 AM</td>
<td>12/27/2013</td>
<td>12:01:00 AM</td>
<td>2655</td>
<td>90J</td>
<td>Trespassing</td>
<td>115</td>
<td>0 E PERSHING RD</td>
</tr>
</tbody>
</table>

2013 Crimes in My Neighborhood as Percent of Total

- Non Aggravated Assault
- Stealing From Auto
- Trespassing
- Stealing from Building
- Misc Violation
- Auto Theft
- Properly Damage
- Stealing Auto Parts
- Aggravated Assault
- Possession/Sale/Dist
- Strong Arm Robbery
- Burglary - Residence
- Rape
- Stealing All Other
- Agg Assault - Domestic
- Resisting an Officer
- Armed Robbery
- Non Agg Assault Dome
- Disorderly Conduct
- Burglary - Non Resid
- Credit/Debt/ATM Car
- Violation Full Order
- Stealing Bicycles
- Sex Offense - others
- Sex Off Indecent Exp
- Intimidation
- Family Offense
- False Information to
- Sex Off Fondle - mol
- Stealing Shoplifting
- Sex Off Misconduct
- Driving Under Influe
- Possession of Drug E
- Impersonation
- Fraud/Confidence Gam
- Weapons Law Violatio
WHY DOES THIS MATTER?

At some point in your career, you will probably have to create a report.

The way you display information to the end user can enhance or render useless any great data model/ETL you have created.

Just like the rest of your job, report design requires certain skills and understanding to do it well. Report/data visualization design should be treated like any other UI design, with conscious decisions made to direct users and effectively communicate important information.
WHAT’S THE PROBLEM?

Most people don’t have this knowledge of how to present data.

Your audience is missing the point if you aren’t providing useful information in a consumable format.

Not only can bad report design be ineffective, it can mislead users.
Question 1: Which graph makes it easier to determine whether Mid-Cap U.S. Stock or Small-Cap U.S. Stock has the greater share? (Click one of the two buttons below the graphs.)

http://www.perceptualedge.com/files/GraphDesignIQ.html
GRAPH SELECTION

Use the Graph selection matrix to help you decide.

Just because a graph exists doesn’t mean you need to use it.

- In most cases, say no to pie charts.
- Consider a bullet chart instead of a gauge.

NEWER GRAPH TYPES

**Bullet Chart — Few**
- Small footprint
- Linear
- [Bullet graph design specs](http://www.perceptualedge.com/articles/misc/Bullet_Graph_Design_Spec.pdf) available online

**Sparklines — Tufte**
- Provide context by showing a trend
- “Word-sized”, clear and compact
- Example on [Google Finance](https://www.google.com/finance)
DATA-INK RATIO

Definitions:
- data-ink/total ink used in graphic
- proportion of a graphic’s ink devoted to the non-redundant display of data-information
- 1.0 - proportion of a graphic that can be erased without loss of data-information

Erase non-data-ink and redundant data-ink, within reason

Example
CHART JUNK

Keep gridlines light and remove them where necessary.

Avoid 3-D presentation of 2-D data.

Remove unnecessary legends when information is redundant with the chart title.

“We-Used-A-Computer-To-Build-A-Duck Syndrome”: Just because it’s new/possible/shiny doesn’t mean you should use it.
SUFFICIENT CONTEXT

Graphics must not quote data out of context.

Questions for context:
- How good/bad is it?
- Is it historically good/bad?
- How much precision makes sense?

Demo: Repeat column headers on each page
Perception of basic visual attributes without conscious effort

Application to bar charts:
- Start numerical scales at 0
- Order bar charts by value
- Use a single color in bars of bar charts unless there is a good reason
- Don’t rotate labels
GOOD EXAMPLE BAR CHART

Demo: Build a bar chart

Image from http://www.perceptualedge.com/blog/?p=247
Legibility and consistency are the goals of font choice for data visualizations.

Serif or Sans-Serif is acceptable: Arial, Verdana, Tahoma, Times New Roman, Palatino

**Emphasis** and **color** can be used for grouping text.
COLORS

We can distinguish preattentively between no more than about 8 different hues.

Fully saturated, bright versions of primary hues tend to demand attention and should be used to highlight information.

My favorite tools:
- Instant Eyedropper
- Color Combos
COLOR PALETTES

Ways to indicate your color palette in SSRS:
• Using a fill color on each series
• Built-in color palette
• Custom color palette
• Expressions
• VB Code

Melissa Coates article on MSBICentral.com

Demo
WEB RESOURCES

Stephen Few’s blog: http://www.perceptualledge.com/blog/

Jason Thomas’ blog: http://www.sqljason.com

Jen Stirrup’s blog: http://www.jenstirrup.com/


Chart anatomy video: http://www.youtube.com/watch?v=VgaPGaO_8sc


Blog post: http://darkhorseanalytics.com/blog/data-looks-better-naked/
RECOMMENDED BOOKS

Data Visualization:
- *Information Dashboard Design* by Stephen Few
- *Show Me the Numbers* by Stephen Few
- *The Visual Display of Quantitative Information* by Edward Tufte

Reporting Services:
- *Microsoft SQL Server 2012 Reporting Services* by Stacia Misner
- *Visual Intelligence: Microsoft Tools and Techniques for Visualizing Data* by Mark Stacey, Joe Salvatore, Adam Jorgensen
QUESTIONS AND FINAL COMMENTS

Please feel free to contact me with questions or feedback

Meagan Longoria
BI Solutions Consultant
Twitter: @mmarie
Blog: DataSavvy.wordpress.com