





Hanover Insurance Groups

How Much Data is Generated Every Minute?

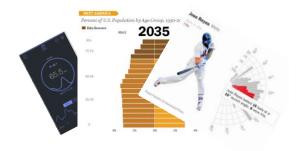
Data never sleeps



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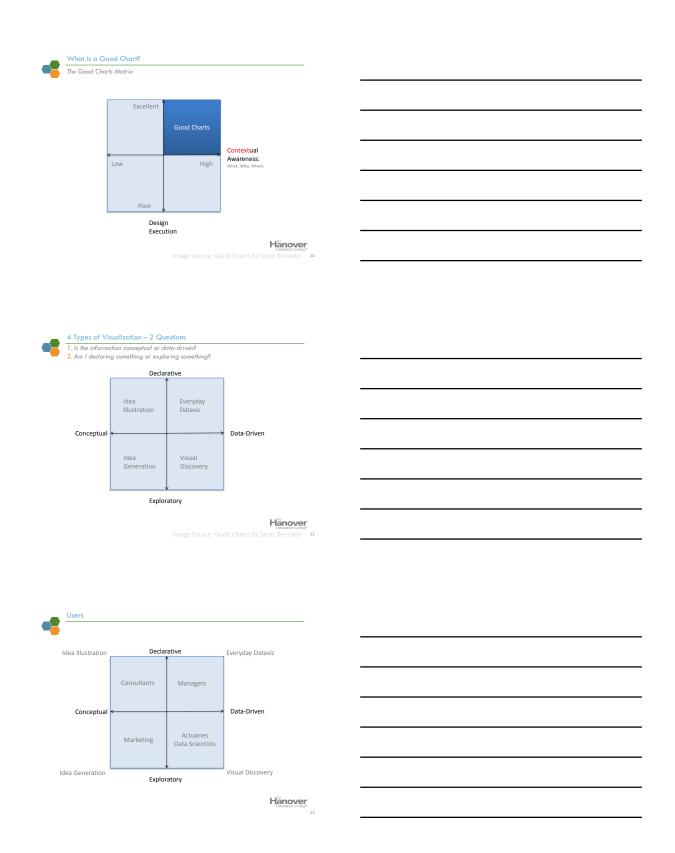
Insurance Groups
Image Source: www.domo.com

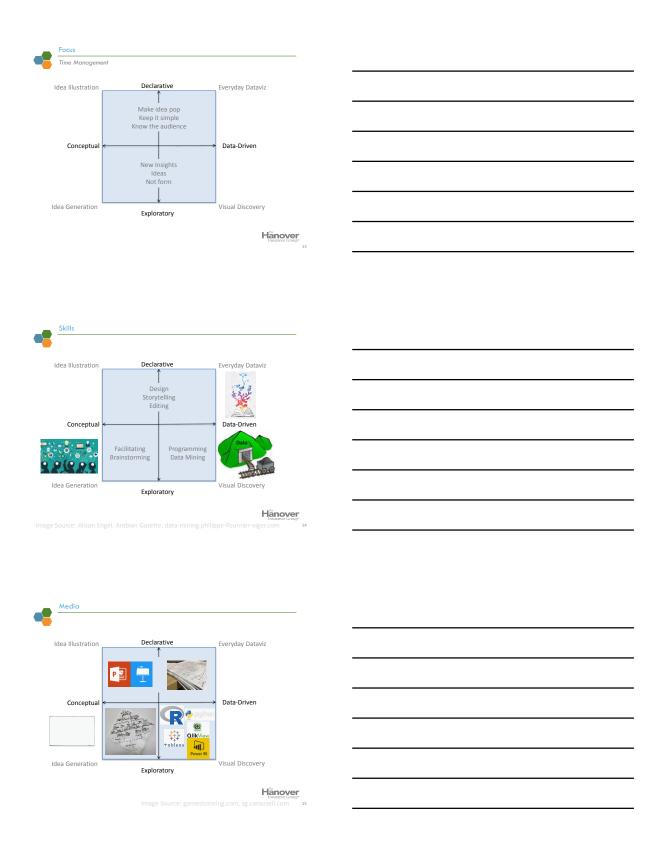
Data Visualization is Everywhere



Histori

Tells A Compelling Story		
Who suffers most from travel stress?		
TRAVEL STRESS INDEX		
60 - 155		
50-		
40-		
30 -		
20		
10- /		
5 10 15 20 25 30 TRAVEL FREQUENCY (TRIPS PER YEAR)		
The greatest value of a picture is when it forces us to notice		
what we never expected to see."  — John Tukey	Hänover	
_		
What is a Good Chart?		
<u> </u>		
	Hanover	
	Insurance Group® 8	
Is this a Good Chart?		
Sales Report		
1000		
800		
600		
400		
200		
2015 2016 2017 2018 2019 →■Jan →●Feb		
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How to Create a Successful Visualization	
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How to Create a Successful Visualization?	
4-Step Visualization Framework	
Best Practice at Consulting Firms	
Overview of Visualization Tools     Interactive Visualizations	
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4-Step Visualization Framework	
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Context Sketch Prototype Refine	
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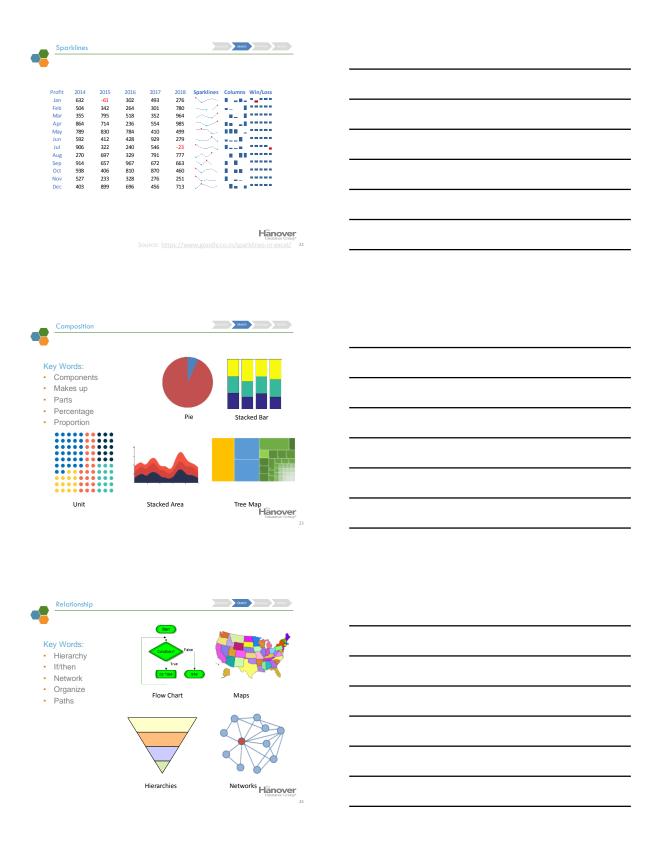
Context	Control (Control (Con	
Questions:  • What is the issue?  • What am I trying to say?  • Why?		
Actions:  Discuss with clients Brainstorm Notes with keywords Revisit		
	Hanover	
Sketch - Comparison  Match keywords to approaches	and start sketching	
Key Words:  Before/after  Compare  Contrast  Trend	Bars	
• Over time		
#Customers Multi Mono		
Slope	Small Multiples	
Distribution		
Key Words: Distributed Spread Scattered	Hotogram	
• Bumps	Histogram	

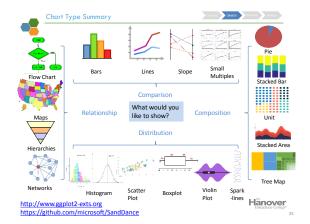
Violin Plot

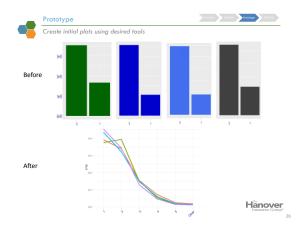
Sparklines Hanover

Boxplot

Scatter Plot

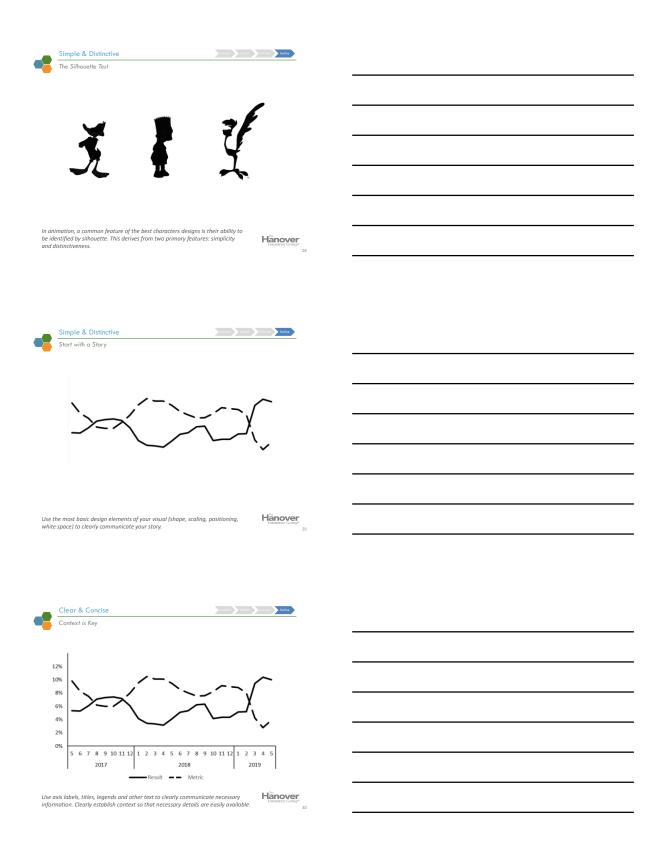


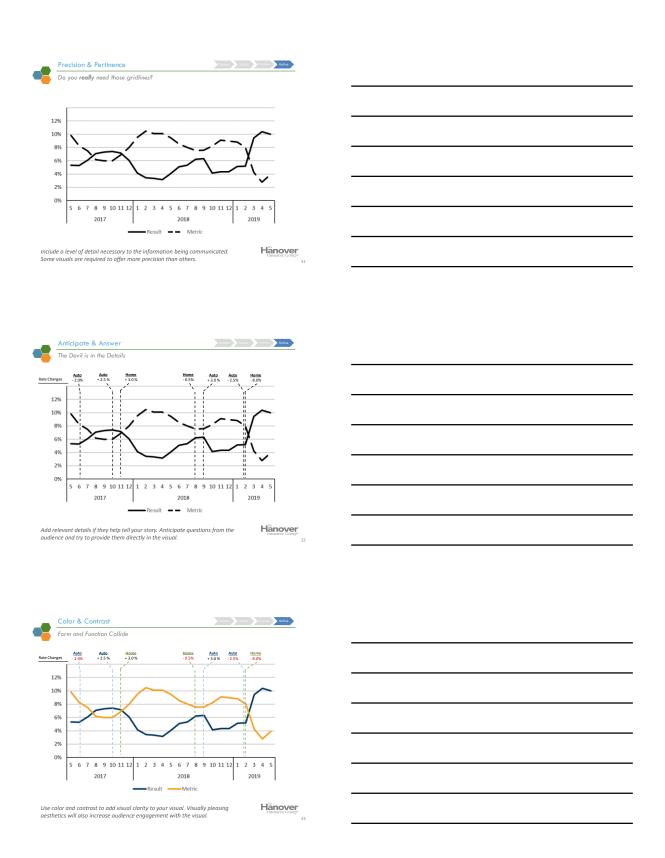


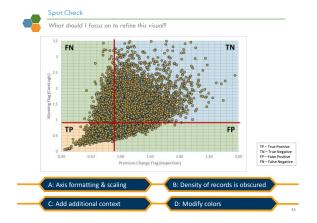




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# How to Create a Successful Visualization?

4-Step Visualization Framework

### Best Practice at Consulting Firms

Overview of Visualization Tool

Interactive Visualizations

# Analyzing the "Art of Storytelling"

### Adapting Hans Rosling's method to the ever changing consulting world



Thought Leadership approval process in (	Consulting		
	ough a stringent approval of all published ect EY. There are 5 levels of approval:		
Actuarial pra	actice review		
Technical review	Proof-read		
Independence review	Legal review		
The better the questions, the better the a	answers		
		-	
Always keep in mind:	Executive Analyst		
<ul> <li>Know your audience</li> <li>Be clear on the goal</li> <li>You need a compelling story</li> </ul>			
Communica Interaction Outcome			
	•		
While crafting the message:     Begin with a question     Find appropriate techniques to displ			
Define what needs to be highlighted	I		
How to Create a Successful Visualization?	?	1	
4-Step Visualization Framework			
Overview of Visualization Tools			

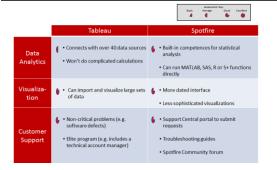
# Statistical analytics vs. Visual analytics Statistical analytics Statistical analytics Visual analytics Visual analytics Visual analytics \*Ad-hoc analysis \*Specialized analysis approach needed (e.g. statistical modeling) \*Pros \*Solutions are fully customizable important \*Solutions are fully customizable of analysis of analysis is important \*Solutions are fully customizable of analysis of analysis is important \*Solutions are fully customizable of analysis of analysis is important \*Solutions one to most data repositories of the box visualization capability \*Substantial coding of Data volume is constrained order ovdes \*Cons of the box visualization capability \*Tools do not come with pre-package solutions unlike Traditional BI

# Visual analytics: Tableau vs Spotfire





# Visual analytics: Comparison of features



# How to Create a Successful Visualization? • 4-Step Visualization Framework Best Practice at Consulting Firms Overview of Visualization Tools • Interactive Visualizations Hanover Incorporating Narrative Visually Letting the Visuals Speak for Themselves Typically, relevant context and details are provided in person... My Very Imports 17 Zvan Haz a Salvii Hanover Incorporating Narrative Visually Letting the Visuals Speak for Themselves Important Report ... or provided in text by documentation or a report narrative.

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# Incorporating Narrative Visually Letting the Visuals Speak for Themselves



Left on its own in an interactive tool, however, the visual must now speak for itself...

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# Incorporating Narrative Visually

Letting the Visuals Speak for Themselves

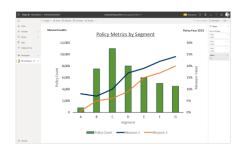




... so all relevant context, takeaways, and narrative must be included directly.

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# Communicating Limitations Post the Warning Signs



Users not as familiar with the data may not realize if a bucket doesn't have enough data for significant results.



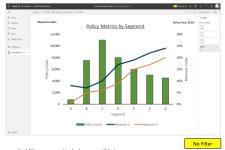




Warn users in cases of data limitations and/or cases of insignificant data.

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# Communicating Limitations Taking Off the Blinders



User applied filters are particularly susceptible to resulting in insignificant data buckets.

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# Communicating Limitations Taking Off the Blinders



Automatic axes allow the visual to look good in all situations, but may obscure a lack of data in these cases...

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### Visual Design Language of Interaction Visually Convey Interactive Elements

Users should be able to identify interactive elements visually. Hover-over color changes encourage clicking for example.

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### Visual Design Language of Interaction Cause-and-Effect of Clicking



When an interactive element is clicked, the effect should be immediately clear and evident...

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Questions?		
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