

Communicating Scientific Results - Data Visualization: Do's and Don'ts



Evidence Generation Focus Area Working Group



>> NOW SPEAKING: **SCOTT FLANDERS, PhD**

Vice President of Medical Affairs, Dendreon Pharmaceuticals, LLC

Mission Statement

The mission of the Evidence Generation Focus Area Working Group (FAWG) is to educate the MAPS membership on contemporary practices for data generation strategies, including the design, implementation, and communication of new evidence, and educate the MAPS membership how real-world (RW) evidence may be utilized to support product value; including labeling changes.



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Some Housekeeping

Questions for Presenters:

Please submit questions throughout the presentation using the Q&A button in your control panel.

Evaluations:

The control panel includes a webinar evaluation. Please complete that evaluation so that we can work to ensure the highest quality presentations.

On-demand Availability of Webinar:

This webinar, as with all previous ones, will be available on-demand next week in the Community Portal for MAPS members.



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Disclaimer

The views expressed in this Webinar are those of the presenters, and are not an official position statement by MAPS, nor do they necessarily represent the views of the MAPS organization or its members.

This presentation is for informational purposes only and is not intended as legal or regulatory advice.

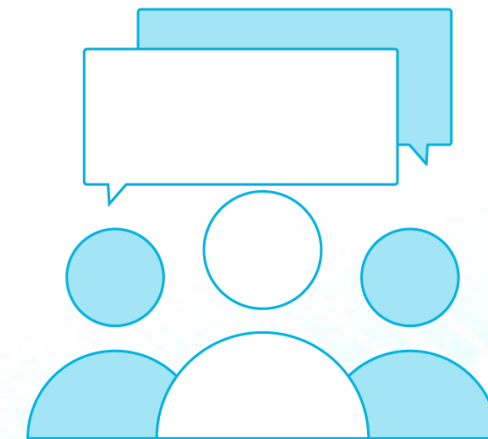


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Challenges with Data Generation - Communication

- Scientific research and analysis can be complex
- Data sources often vary from clinical to humanistic to costs
- Many research designs and methods require assumptions
- Results must often be interpreted by non-specialists
- Our communications are often limited in time and content



Data Visualization



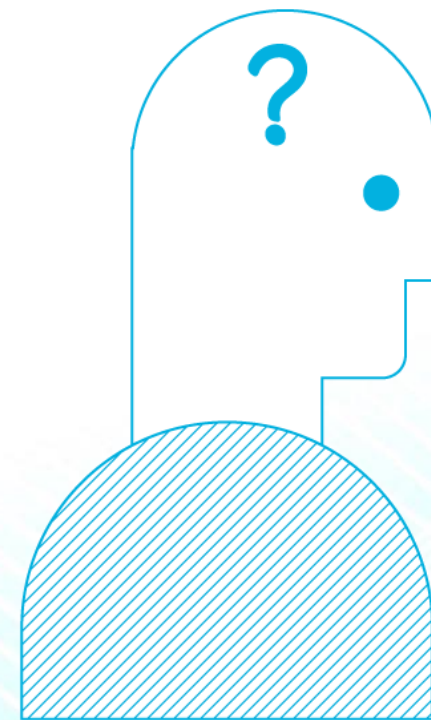
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Educational Objectives

Today we provide a learning opportunity for our audience to understand:

- How brain science affects our understanding of data visualizations and visual cues
- How to identify the right chart for the job and key questions to test your chart selection
- How to avoid common data visualization mistakes
- How to take your data visualizations up a level to ensure they stand out in your presentations





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Our Speaker Today



Amy Balliett

Founder and CEO of Killer Visual Strategies

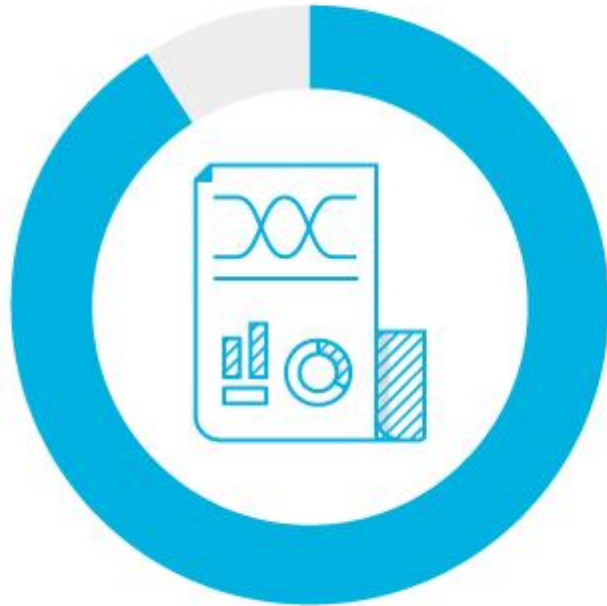
Part 1:

What is Visual Communication?

And why does it matter?

Visual Communication graphically represents information to efficiently and effectively create meaning. When necessary limited text is used to explicate the meaning.





91% OF AUDIENCES

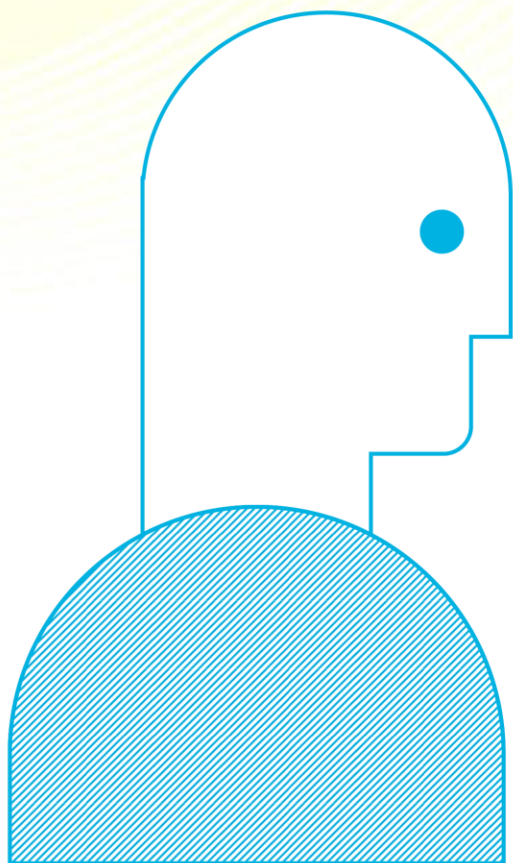
prefer visual content over traditional formats

Source: Demand Gen Report



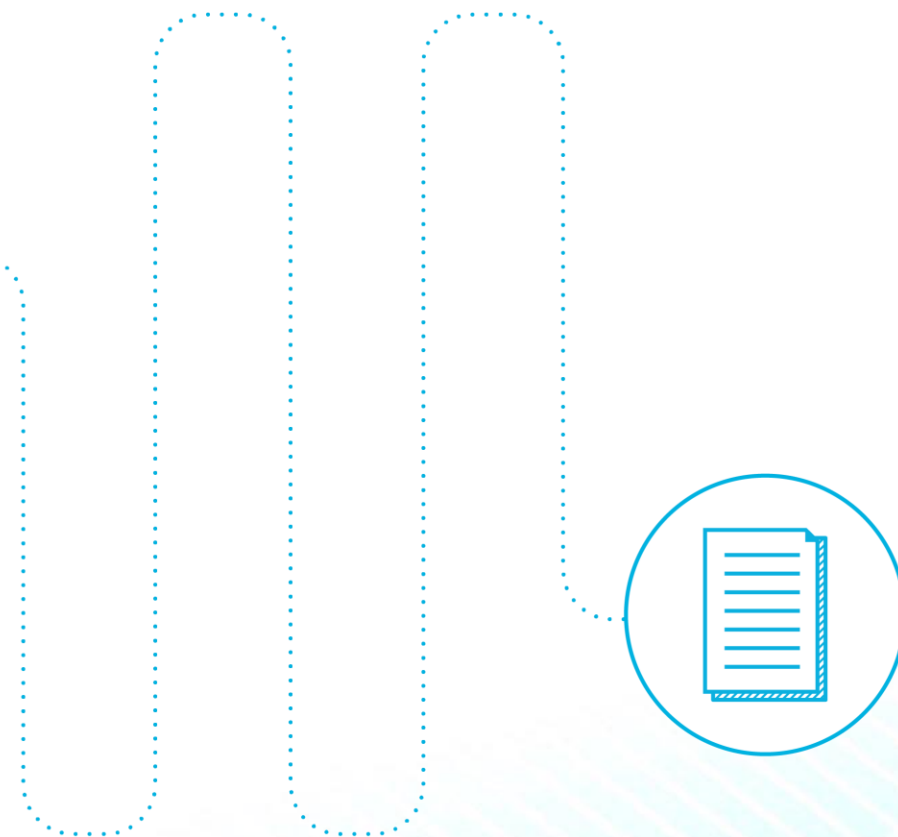
**AUDIENCES WILL ONLY
READ 20% OF A WEB PAGE
WITH 600+ WORDS**

Source: 2019 Venngage Marketing Survey



Visuals communicate
information faster than words
— by one estimate,

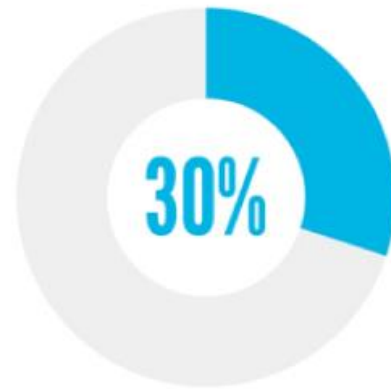
**60,000x
faster**



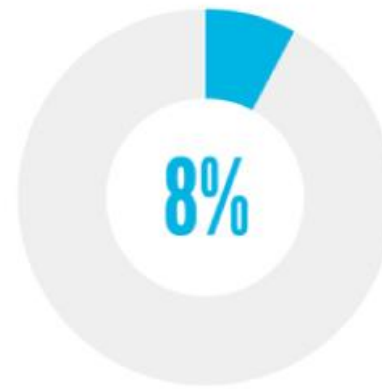
Source: Michael Gazzaniga and Allen Newell, as cited by SAGE Handbook of Political Communication, 2012.

WE ARE INCLINED TO COMMUNICATE VISUALLY

Brain science suggests that our natural inclination to communicate visually is a dominant human trait. In fact, **30% of our cerebral cortex** is composed of neurons firing together to drive visual processing, according to *Discover*. When compared with only 8% for touch and 3% for hearing, this suggests that we prefer visual communication innately.



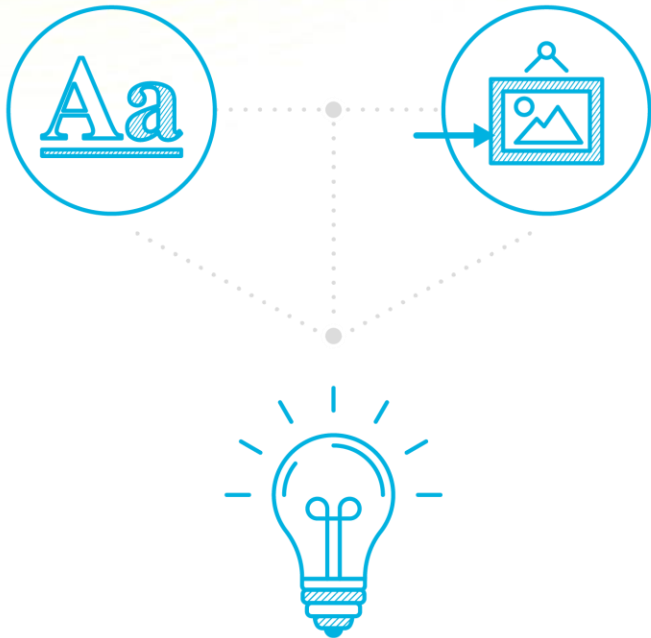
Visual processing



Touch

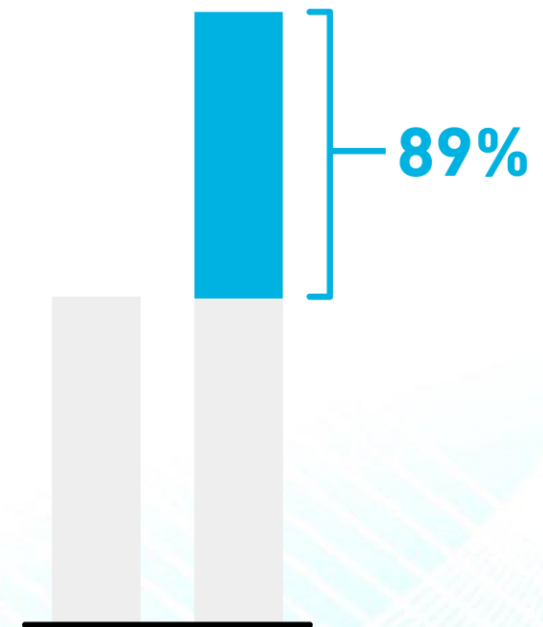


Hearing



Compared to text alone,
text paired with images
improves comprehension
by up to **89%**

Source: *e-Learning and the Science of Instruction* by
Ruth Colvin Clark and Richard E. Mayer



Part 2:

3 Steps to Visualize Data

Step 1: Identify Your Audience

Ask the following questions:

- Who will be viewing this data analysis?
- What do they currently understand and what do they need to understand?
- What are their communication preferences?
- How will the content be viewed/consumed?

Step 2: Select the Right Chart

What do you want your visualization to **achieve**?

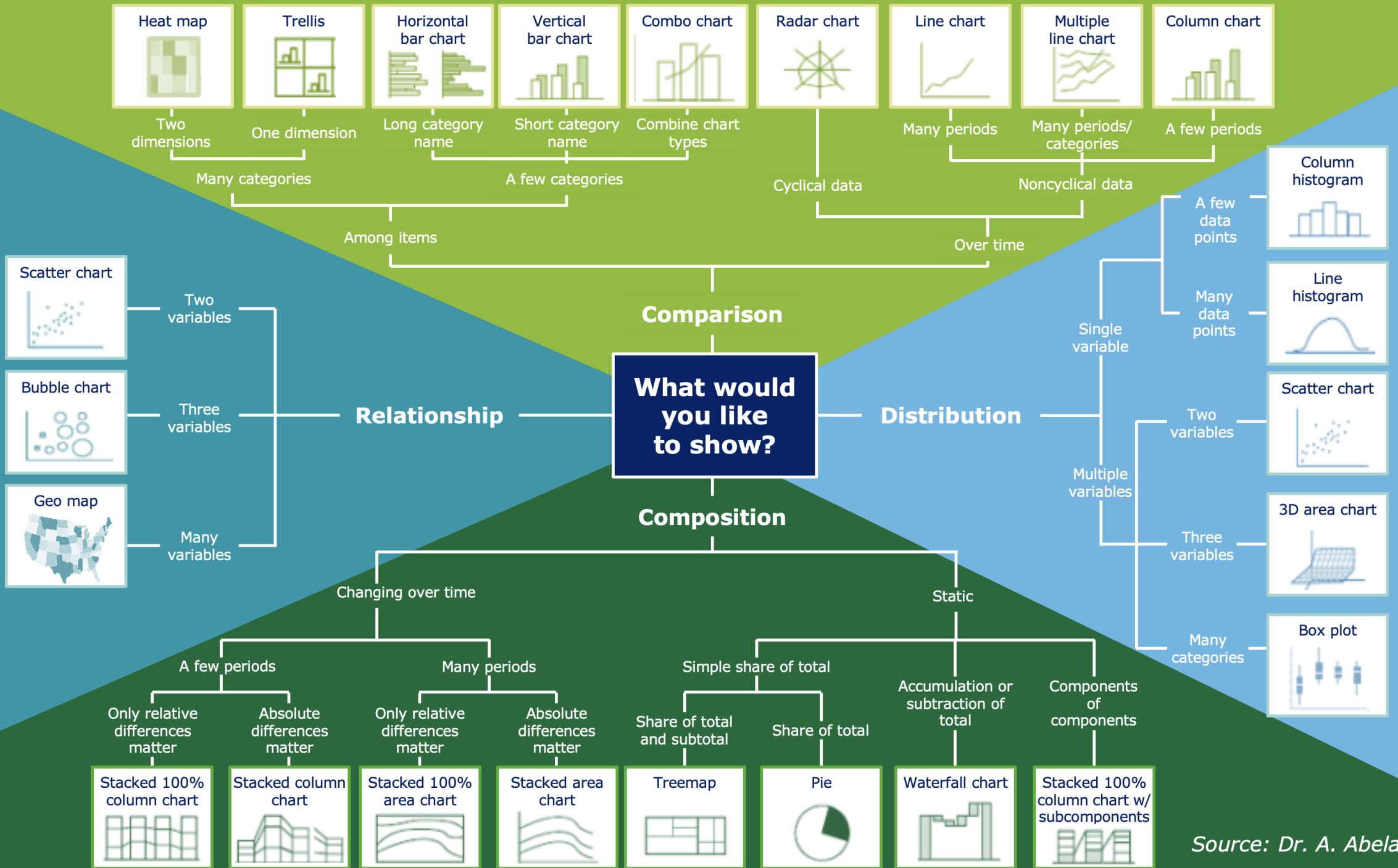
Do you need to show a:

- Comparison?
- Distribution?
- Composition?
- Relationship between two or more variables?

What data do you need to **include**?

Ask the following:

- How many variables do you need to show?
- How many data points do you need to include?
- Do you need to display data over a period of time?

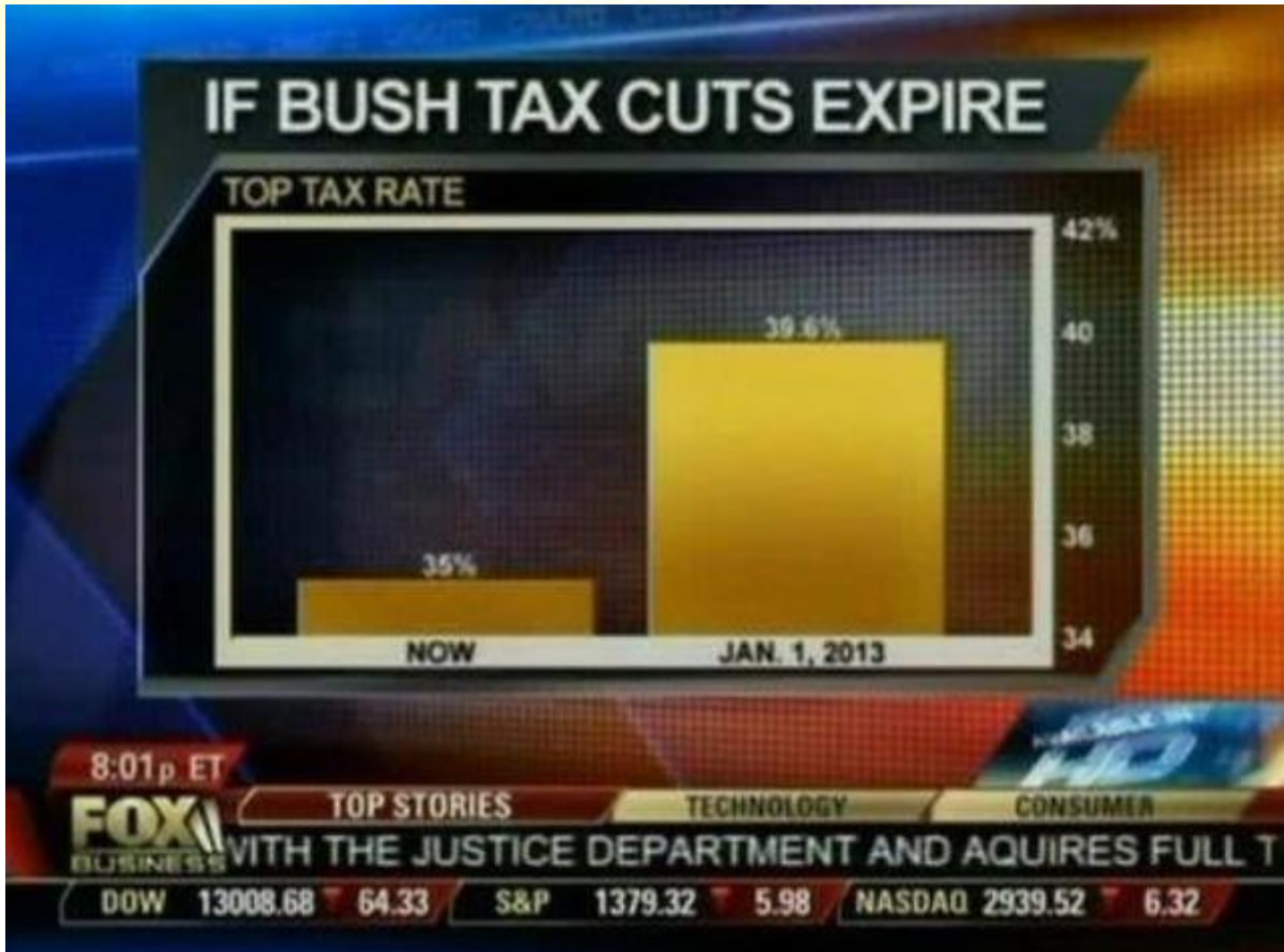


Source: Dr. A. Abela

Part 3:

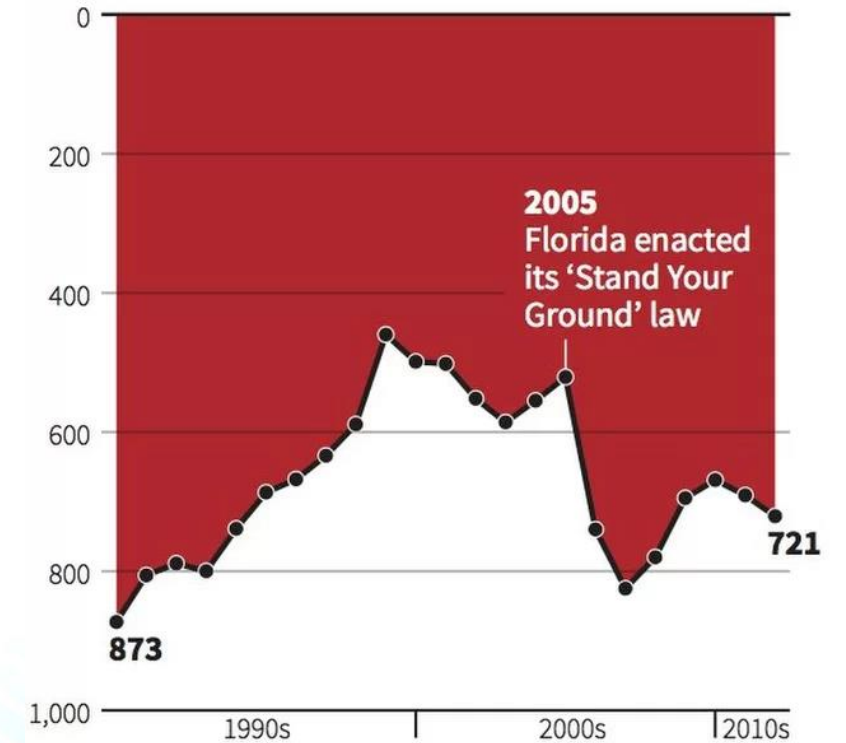
Data Viz Do's and Don'ts

Your Y-Axis Matters



Gun deaths in Florida

Number of murders committed using firearms

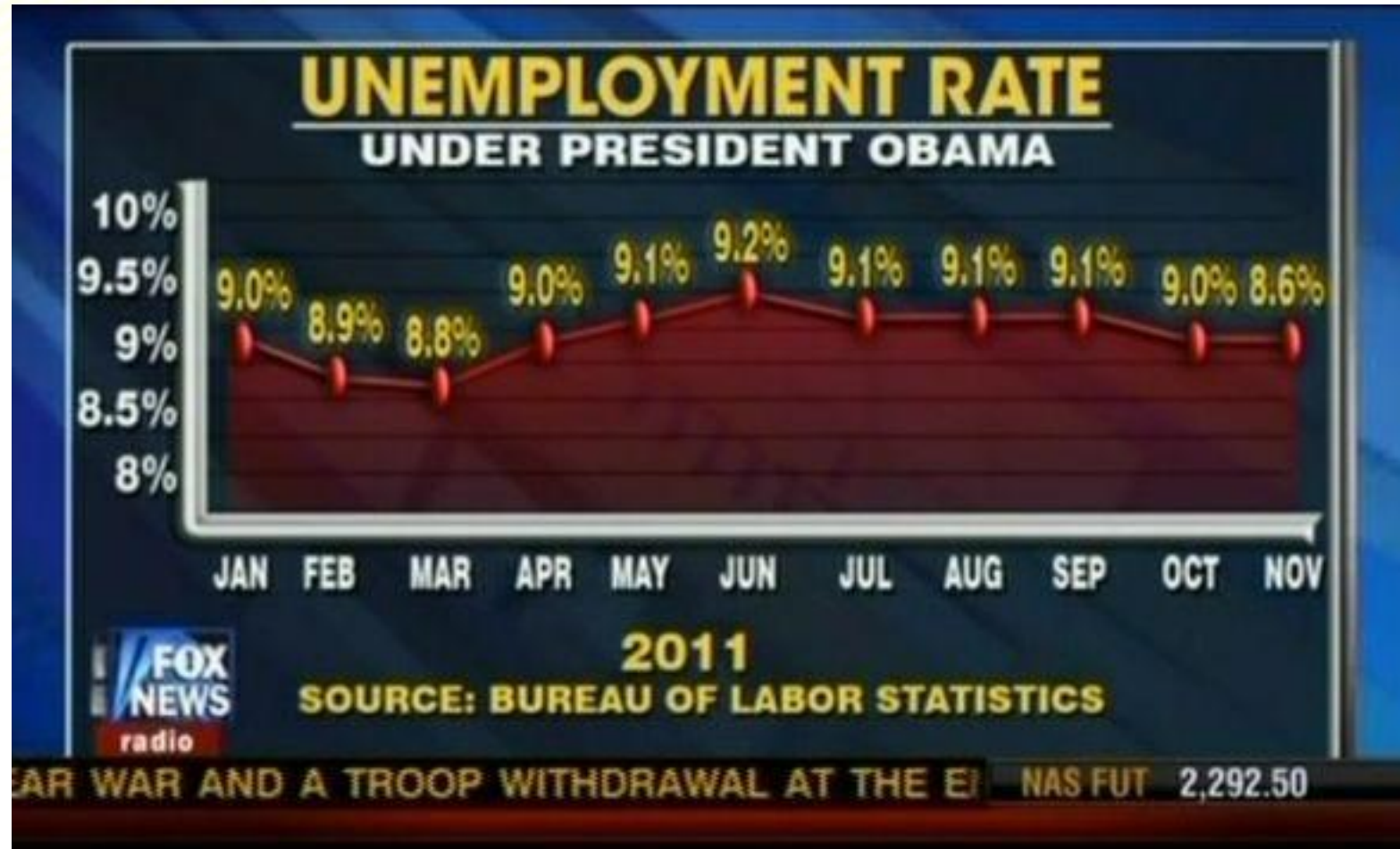


Source: Florida Department of Law Enforcement

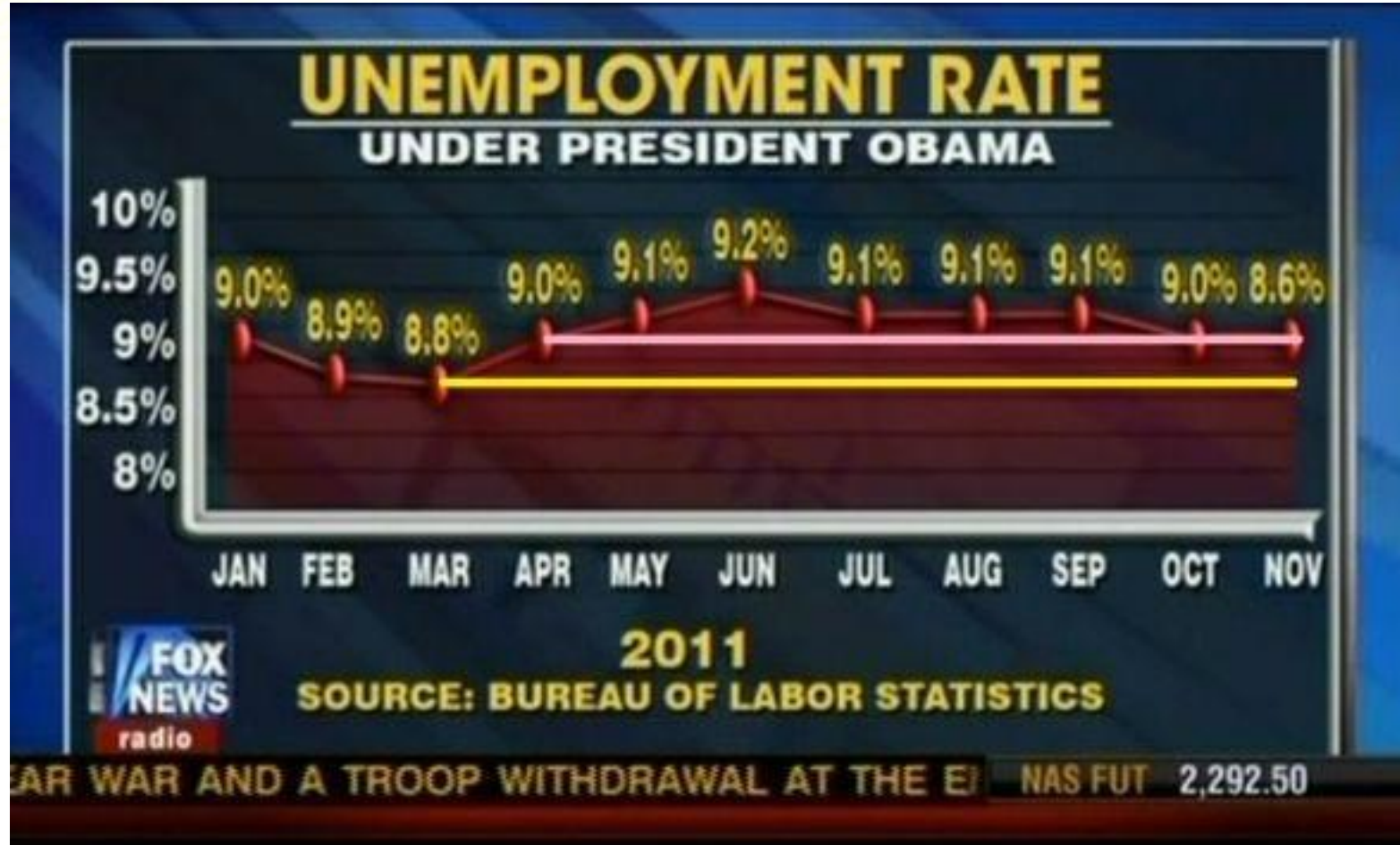
C. Chan 16/02/2014

REUTERS

Accuracy Matters



Accuracy Matters



Colors Create Patterns

Dashboards



Executive view

Channel manager view

7-DAY TREND

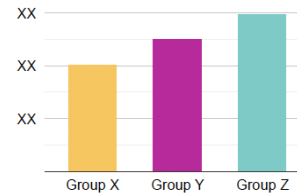
JAN 2-8, 2018

Current 7 Days

Last 7 Days

SURVEYS

Lorem Ipsum

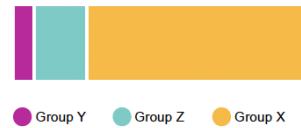


EMAIL

Click-through rate for a given email subject line

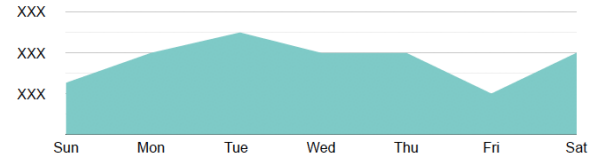
Email Campaign

All



INTRANET

Traffic over time Group Z



TRAFFIC SOURCES

- Group Y
- Group X
- Group Z



INTRANET

Total traffic metrics

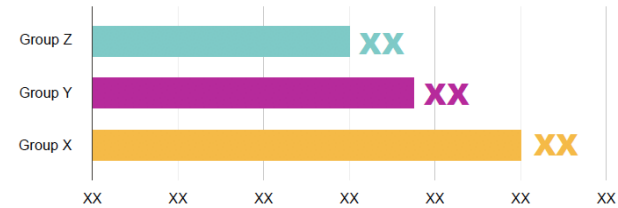
Total Interactions Group Y:

131,000

Duration **2.5** Dwell Time **1.88** Bounce Rate **30.17%**

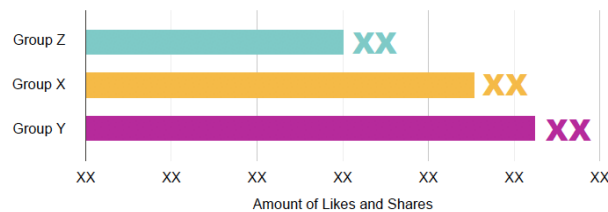
VIDEO INTERACTIONS

Traffic over time



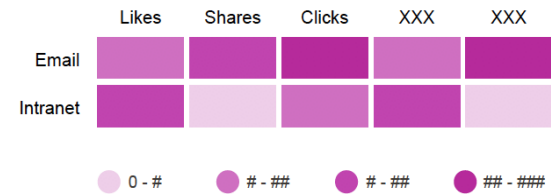
SOCIAL MEDIA

Lorem Ipsum



INTRANET

Amount of interactions with features in a channel Group Y



FILTERS

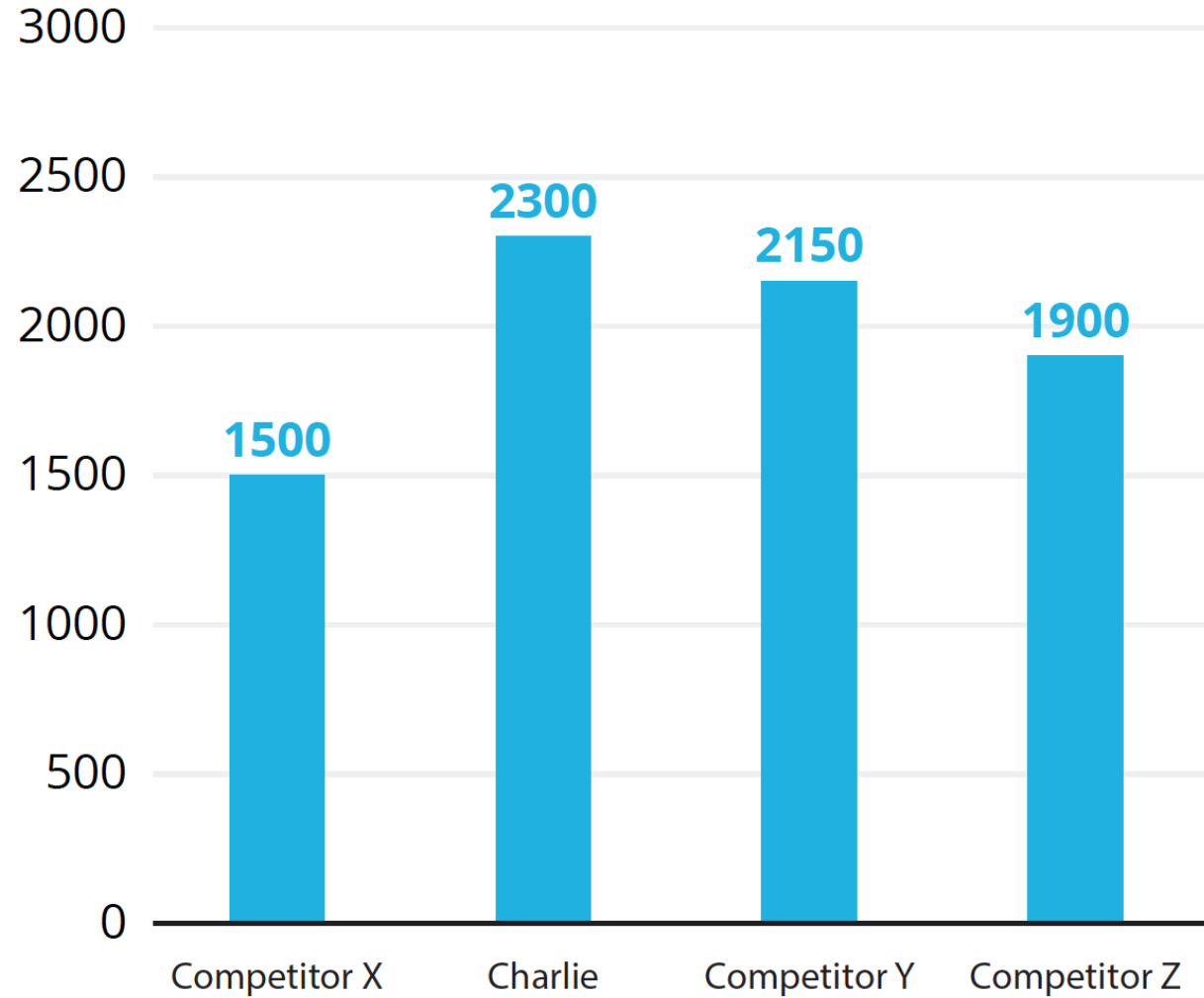


Page level filters

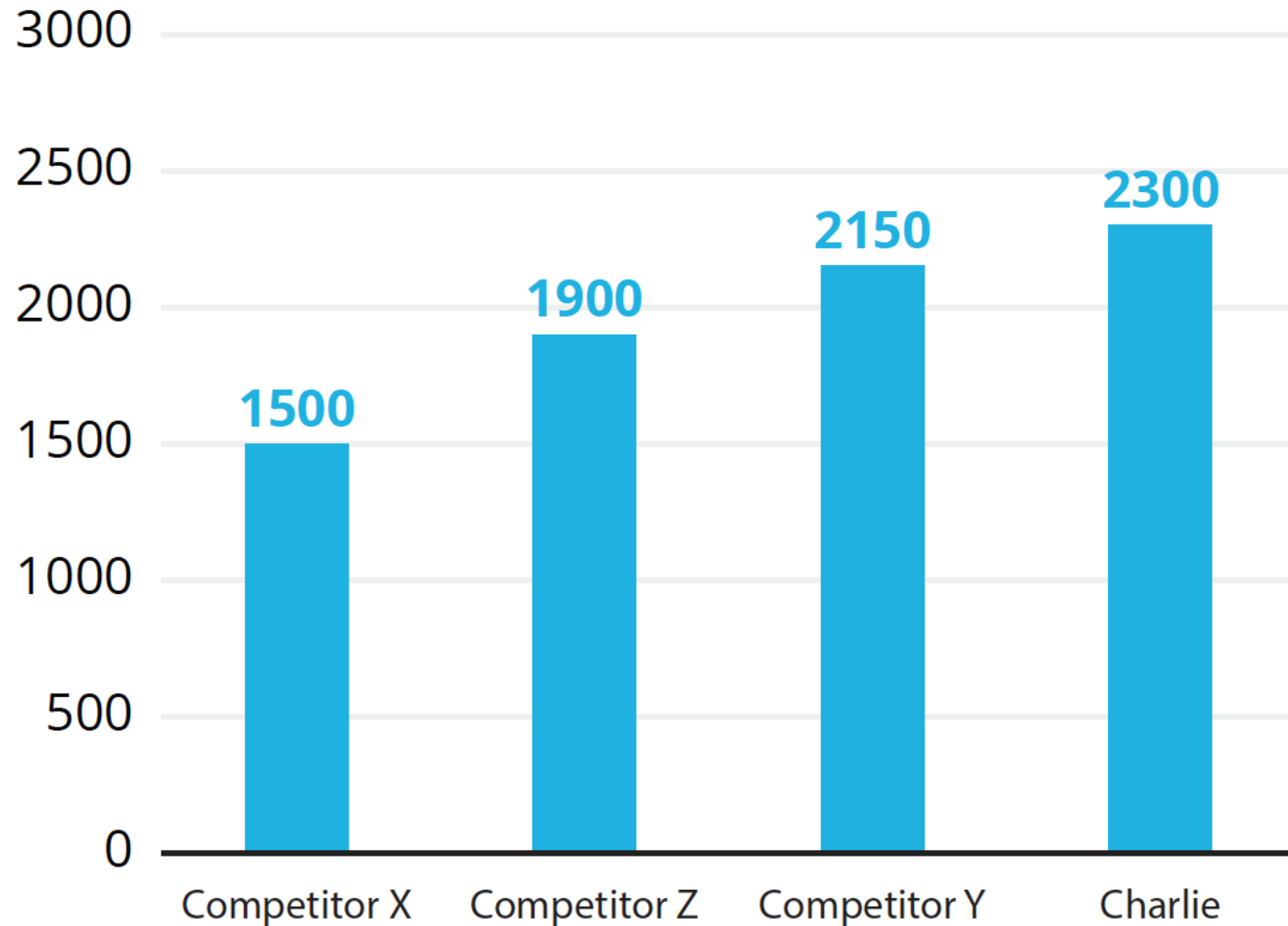
Audience (All)



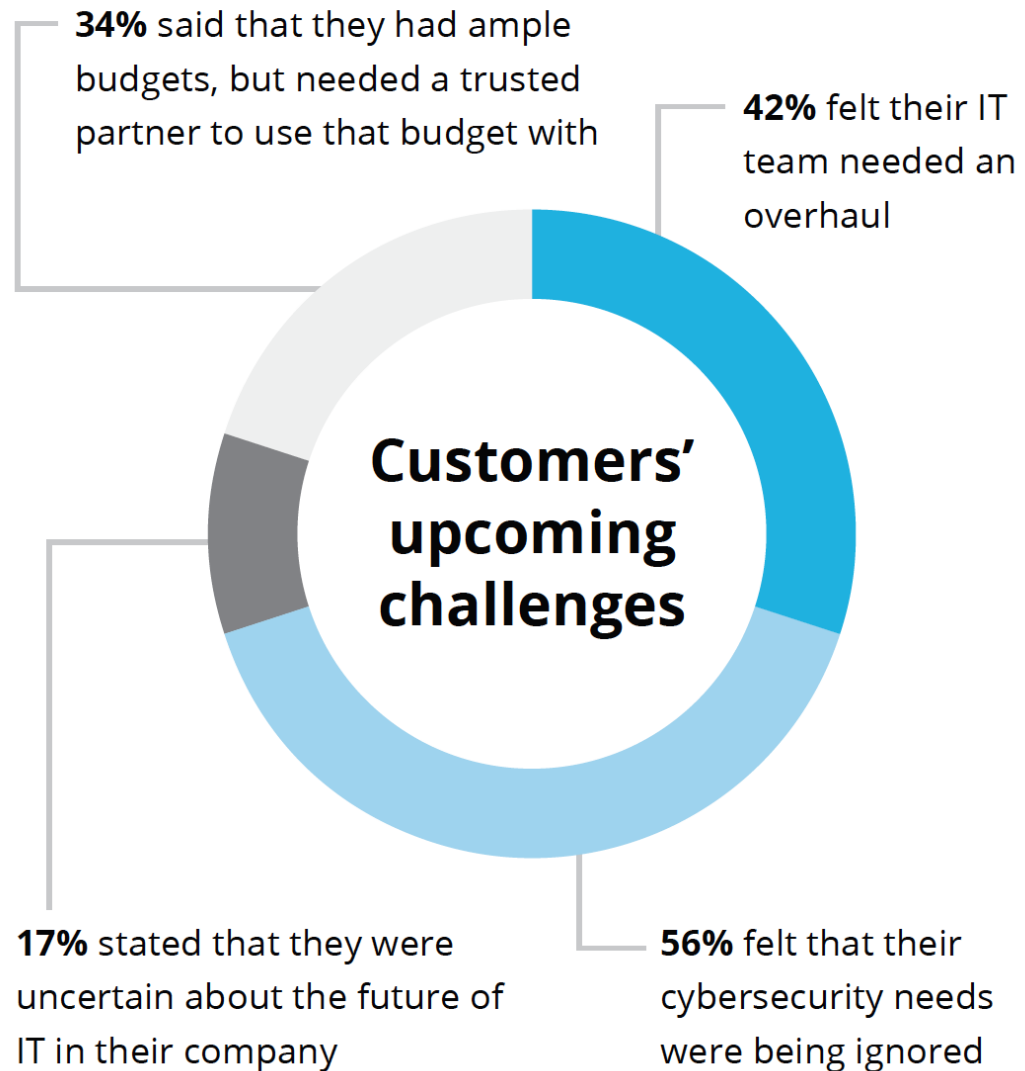
What is Wrong With This Chart?



Order Bars Smallest to Largest or Largest to Smallest



What is Wrong With This Chart?



Pie Charts Add Up to 100

Customers' upcoming challenges



56% felt that their cybersecurity needs were being ignored



42% felt their IT team needed an overhaul



34% said that they had ample budgets, but needed a trusted partner to use that budget with



17% stated that they were uncertain about the future of IT in their company

What is Wrong With These Charts?



82% of our customers visit multiple times a week

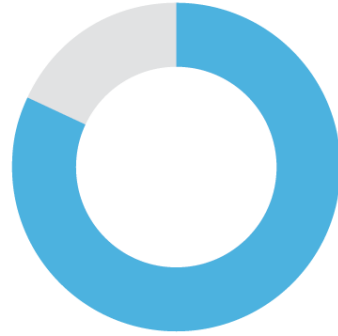


Because of customers like you, we have already achieved **75%** of our giving goals this year!

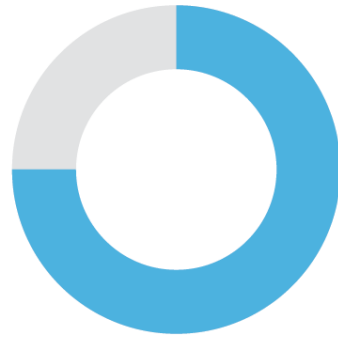


Our loyal customers say that **40%** of their purchases are for our custom drinks.

The Dark Color Should be the “Fill” Color



82% of our customers visit multiple times a week

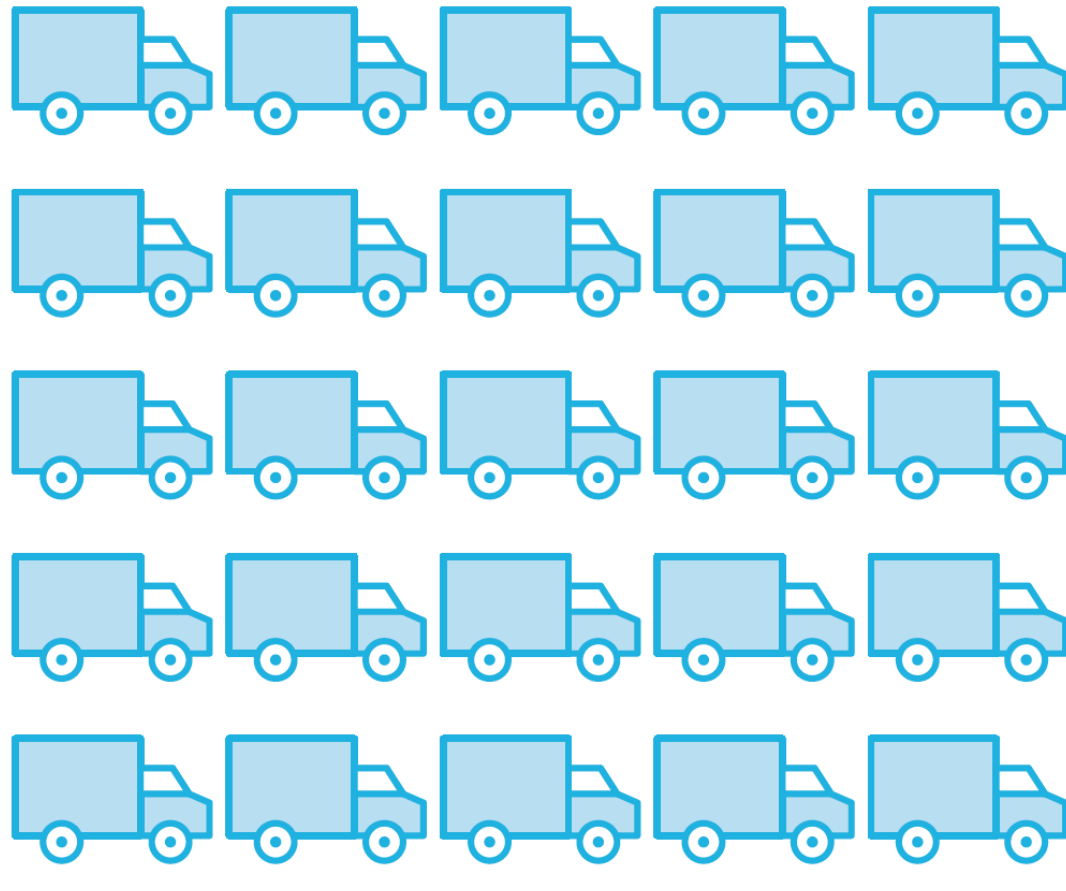



Because of customers like you, we have already achieved **75%** of our giving goals this year!



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What is Wrong With This Quantagram?

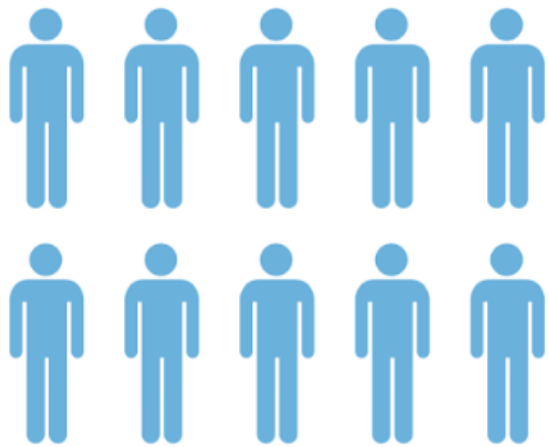


 = 100 trucks

Only Show a 1:1 Ratio

Only use a quantigram as a
1:1 ratio

10 HUMANS



If you cannot clearly visualize a stat any other way **use typography** or **tie it to a related icon/illustration.**



10,450
HUMANS

*A large caveat here is that you may only have this type of data throughout the IG. Make sure that these IG's are not reading assignments

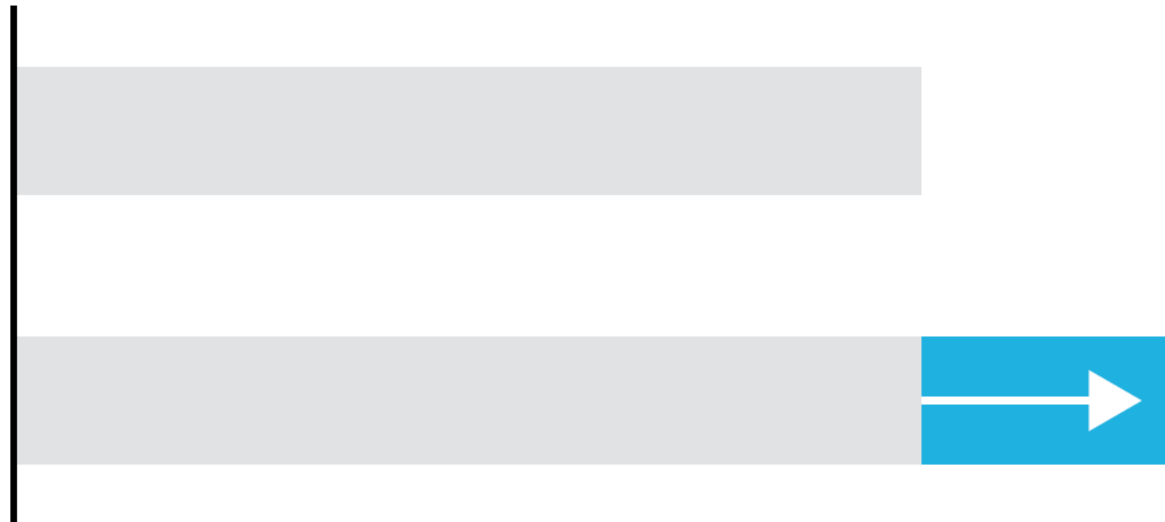
What is Wrong With This Chart?



28% Year-Over-Year
Increase in Sales

Don't Always Indulge in Pie

28% Year-Over-Year Increase in Sales





Amy Balliett

CEO, Founder, Author
Killer Visual Strategies
USA

Thank you!
Questions?