UNIT - V

CASE STUDIES

Case Studies

- Color considerations with a dark background
- Leveraging animation in the visuals you present
- Establishing logic in order
- Strategies for avoiding the spaghetti graph
- Alternatives to pie charts

1. Color considerations with a dark background

Color considerations with a dark background

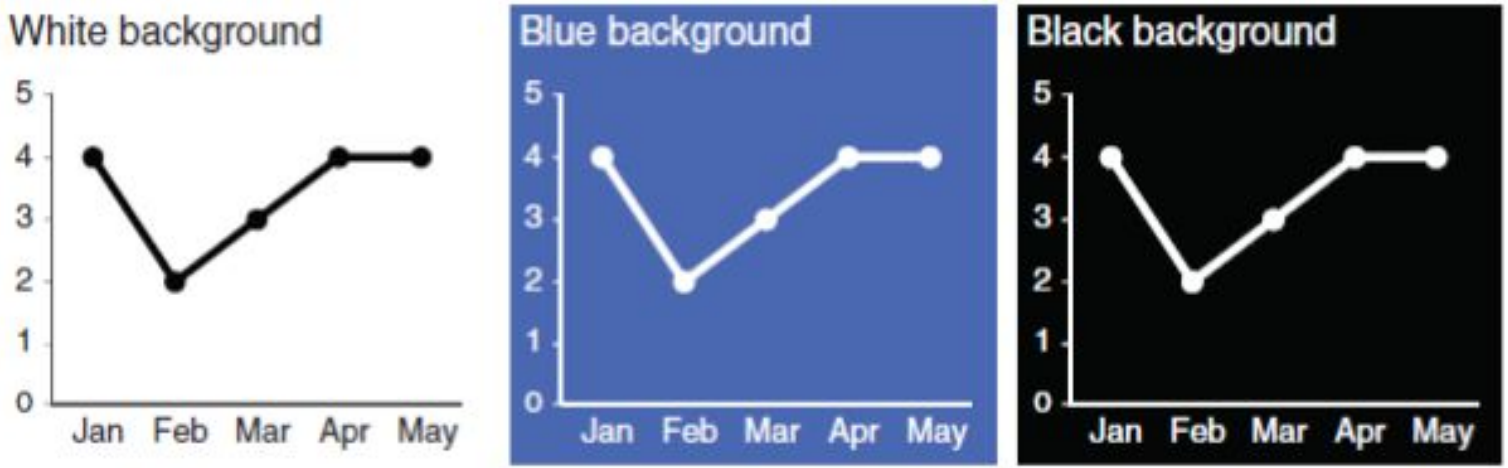
When communicating data, the recommended background is **WHITE.**

DARK background would be HEAVY

Light elements on a dark background can create a stronger contrast but are generally harder to read

WHITE BACKGROUND	DARK BACKGROUND
Easy to focus on the data	Pull eyes away from the data

Color considerations with a dark background



Simple graph on white, blue, and black background

Color considerations with a dark background

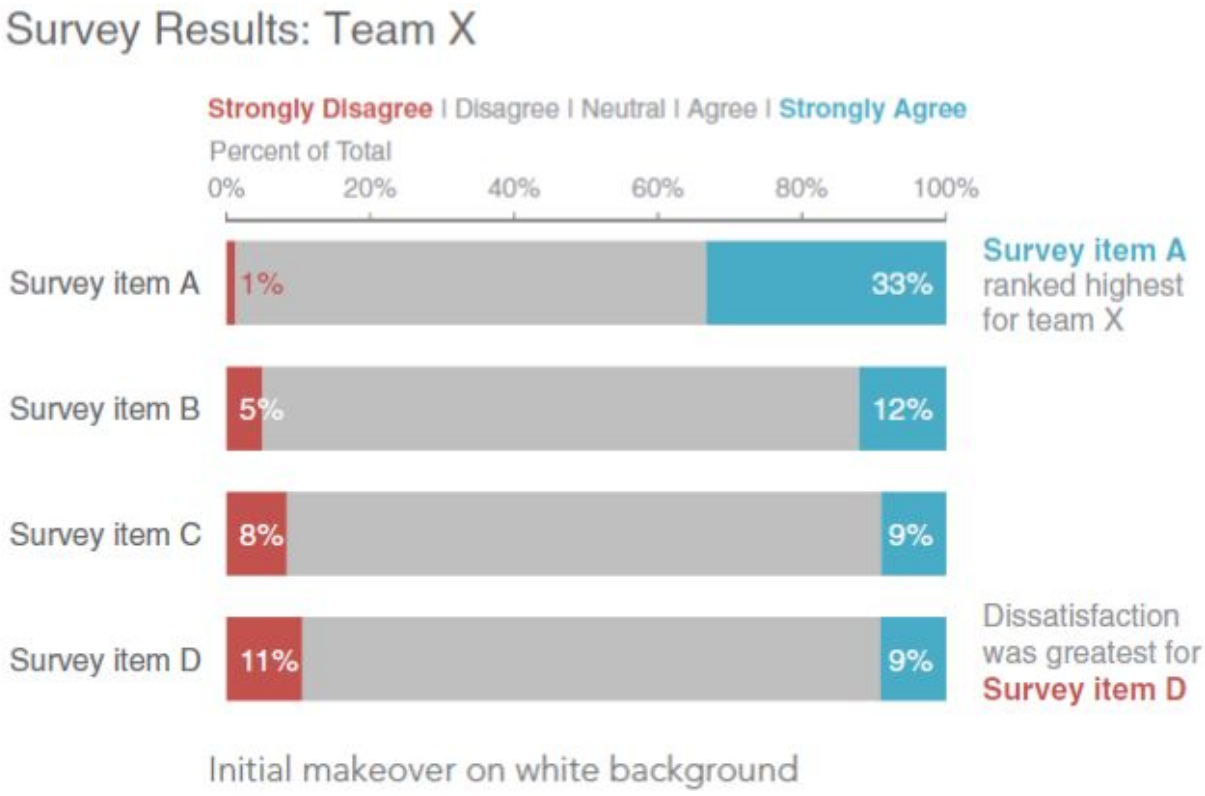
There are other considerations outside of the ideal scenario for communicating with data that must be taken into account

- Company or client's brand
- Corresponding standard template

Color considerations with a dark background : Employee Survey Feedback

This Visual didn't quite fit with the look and feel of the work products of Client group.

Their template was bold and in your face with a mottled, black background spiked with bright, heavily saturated colors.



Color considerations with a dark background :

This Visual sync with the client's brand.

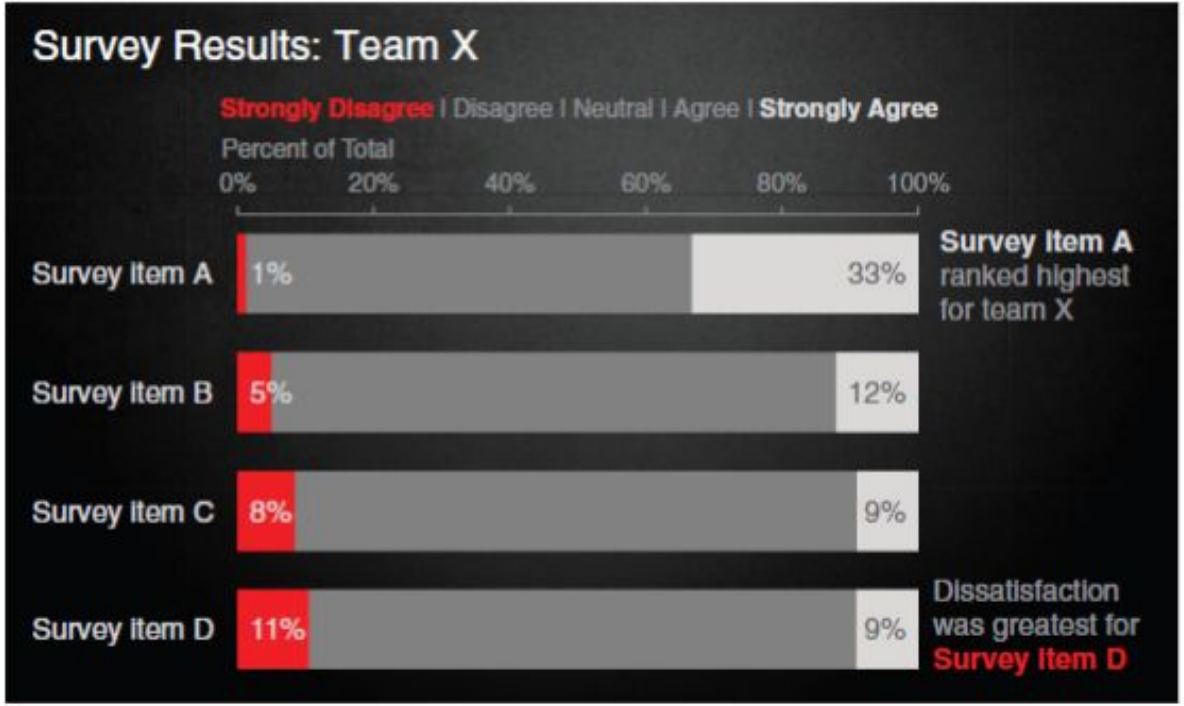
Black becomes the baseline.

Grey and white stand out less.

Some colors are verboten with white background (Eg: Yellow)

Yellow are incredibly attention grabbing against black

Employee Survey Feedback



Remake on dark background

2. Leveraging animation in the visuals you present

Leveraging animation in the visuals you present

Common conundrum faced when communicating with data is when a single view of the data is used for both presentation and report.

- In Visual Presentation - you (presenter) want to be able to walk your audience through the story, focusing on just the relevant part of the visual.
- In Circulate/Report Version - It needs to be able to stand on its own without you, the presenter.

Leveraging animation in the visuals you present

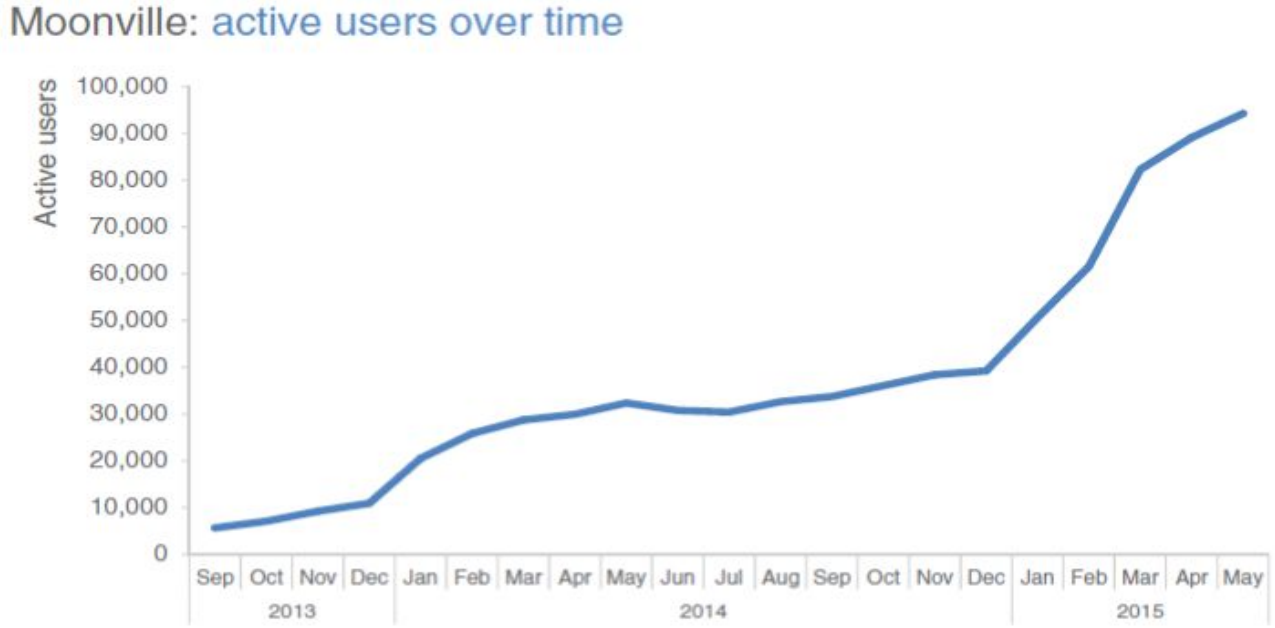
When we use the exact same content and visuals for both purposes (presentation and report):

- The content too detailed for the live presentation (projected on big screen).
- Sometimes not detailed enough for the circulated content.

This gives rise to the slideument—part presentation, part document, and not exactly meeting the needs of either.

Leveraging animation in the visuals you present

Figure talks about growth since the launch of the game in late 2013.

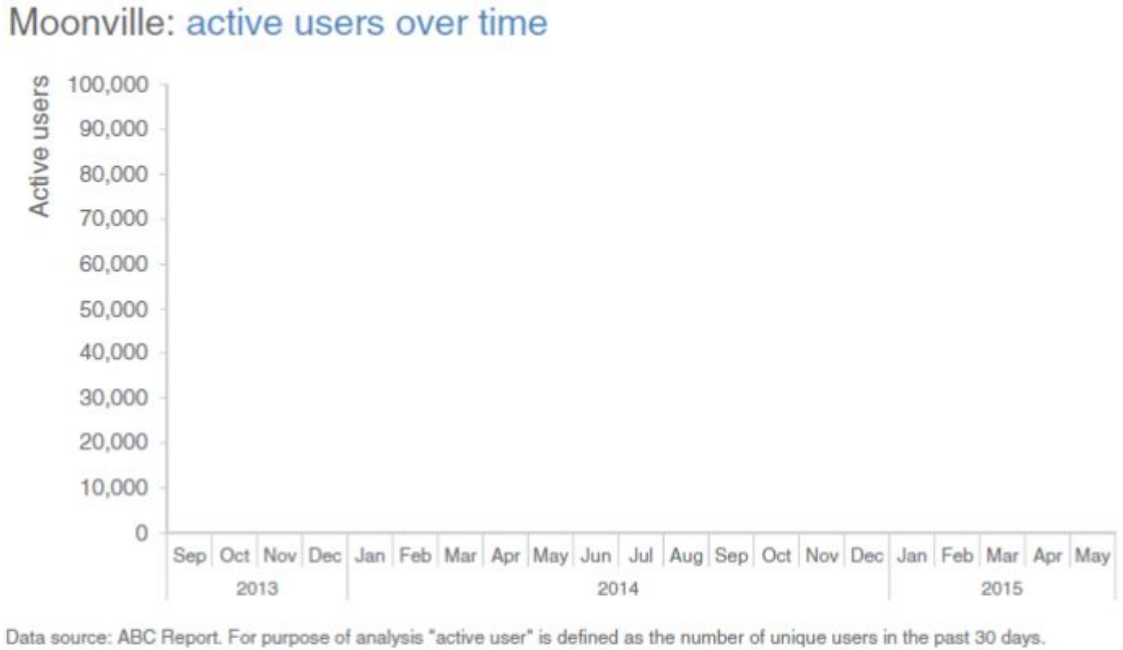


Original graph

When this visual is presented chronologically, audience lost control over their attention and may jump immediately to the sharp increase in 2015.

Leveraging animation in the visuals you present

Alternatively, you can leverage animation to walk your audience through your visual as you tell the corresponding points of the story.



Start with a blank graph.
This forces the audience to look at the graph details with you, rather than jump straight to the data and start trying to interpret it.

Leveraging animation in the visuals you present

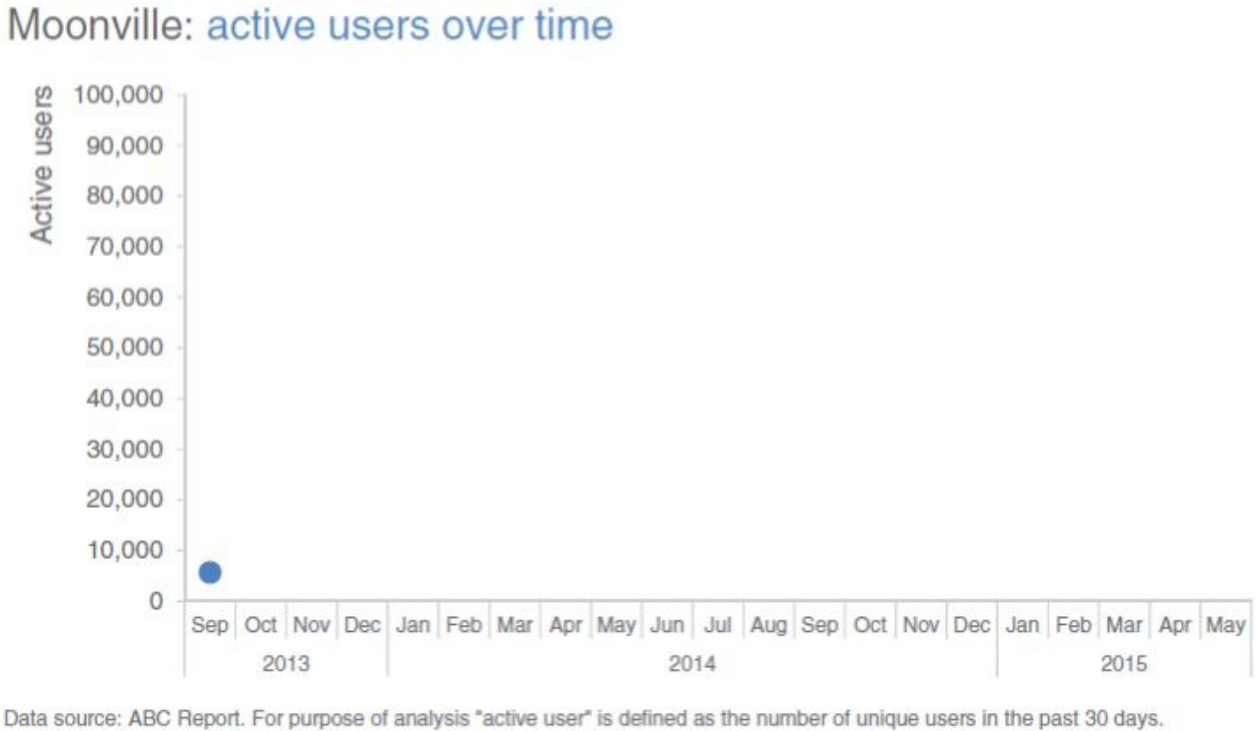
Show or highlight only the data that is relevant to the specific point forcing the audience to be exactly at the same point.

Let’s have a look at -

A Success Story: the increase in Moonville users over time.

Leveraging animation in the visuals you present:

A Success Story: the increase in Moonville users over time.

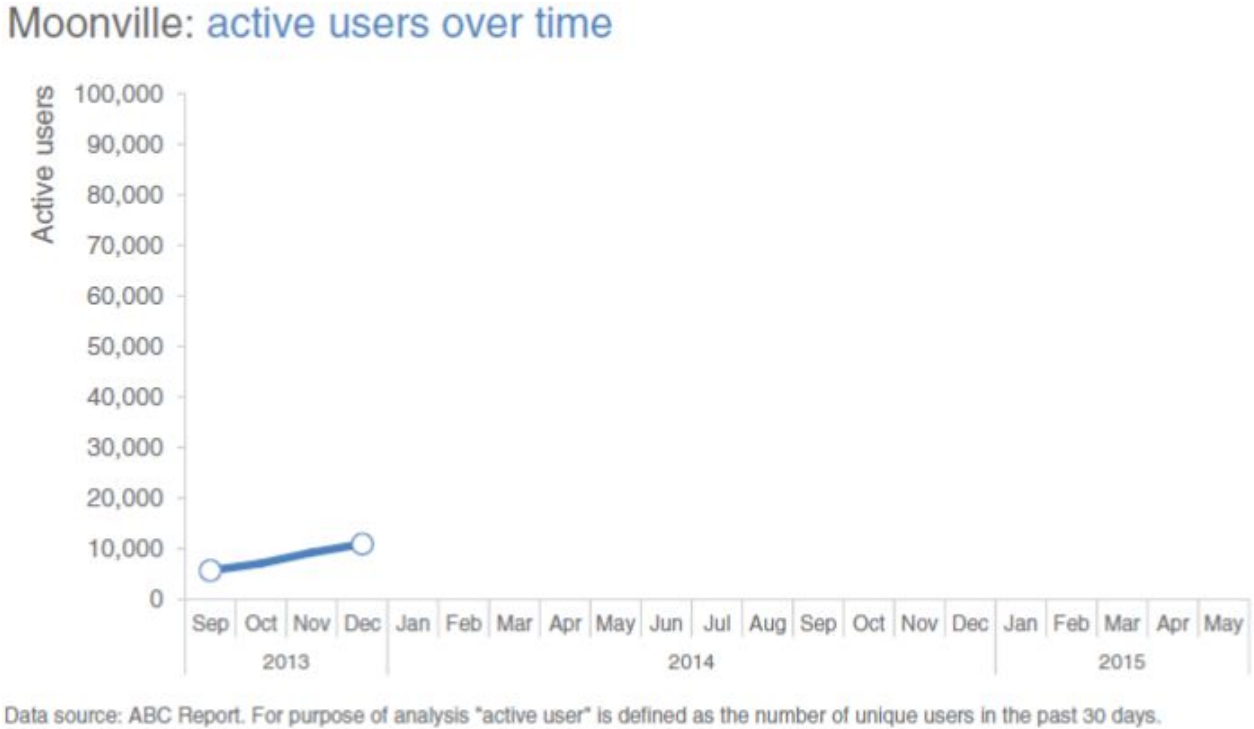


Data source: ABC Report. For purpose of analysis "active user" is defined as the number of unique users in the past 30 days.

We launched Moonville in September 2013. By the end of that first month, we had just over 5,000 active users, denoted by the big blue dot at the bottom left of the graph.

Leveraging animation in the visuals you present:

A Success Story: the increase in Moonville users over time.

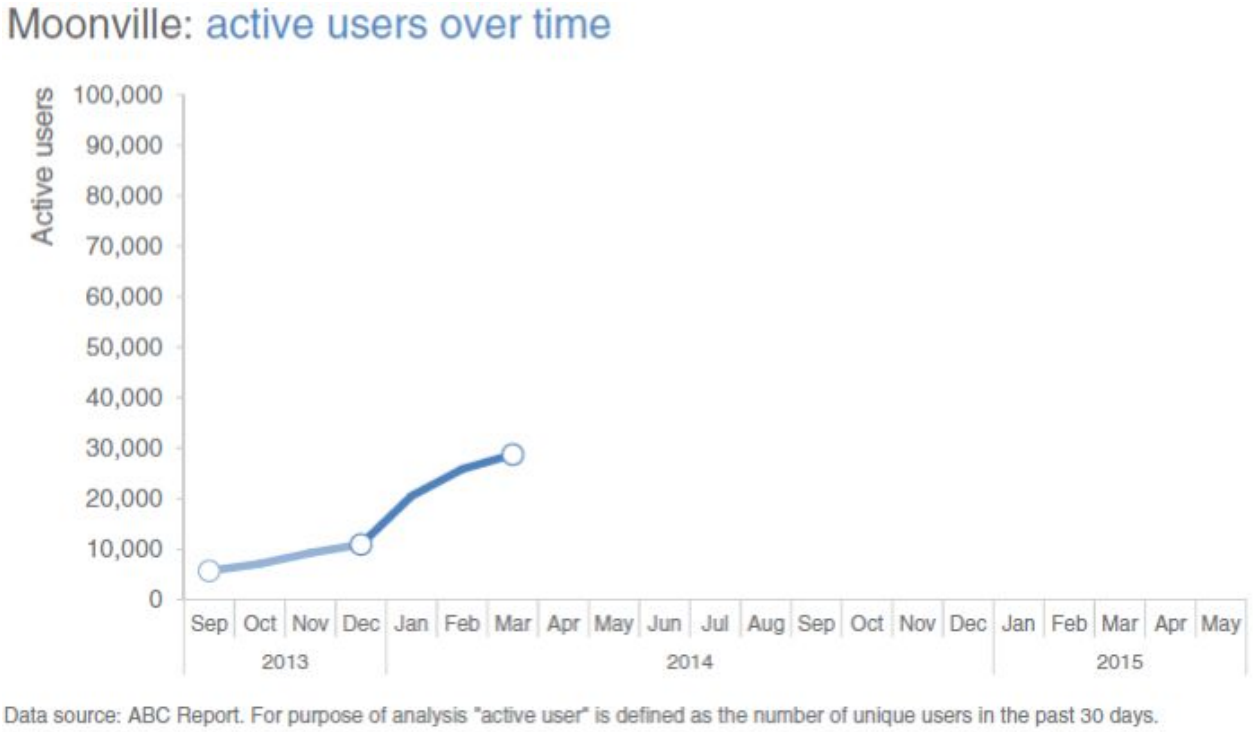


Data source: ABC Report. For purpose of analysis "active user" is defined as the number of unique users in the past 30 days.

Early feedback on the game was mixed. In spite of this—and our practically complete lack of marketing—the number of active users nearly doubled in the first four months, to almost 11,000 active users by the end of December.

Leveraging animation in the visuals you present:

A Success Story: the increase in Moonville users over time.



Data source: ABC Report. For purpose of analysis "active user" is defined as the number of unique users in the past 30 days.

In early 2014, the number of active users increased along a steeper trajectory. This was primarily the result of the friends and family promotions we ran during this time to increase awareness of the game.

Leveraging animation in the visuals you present:

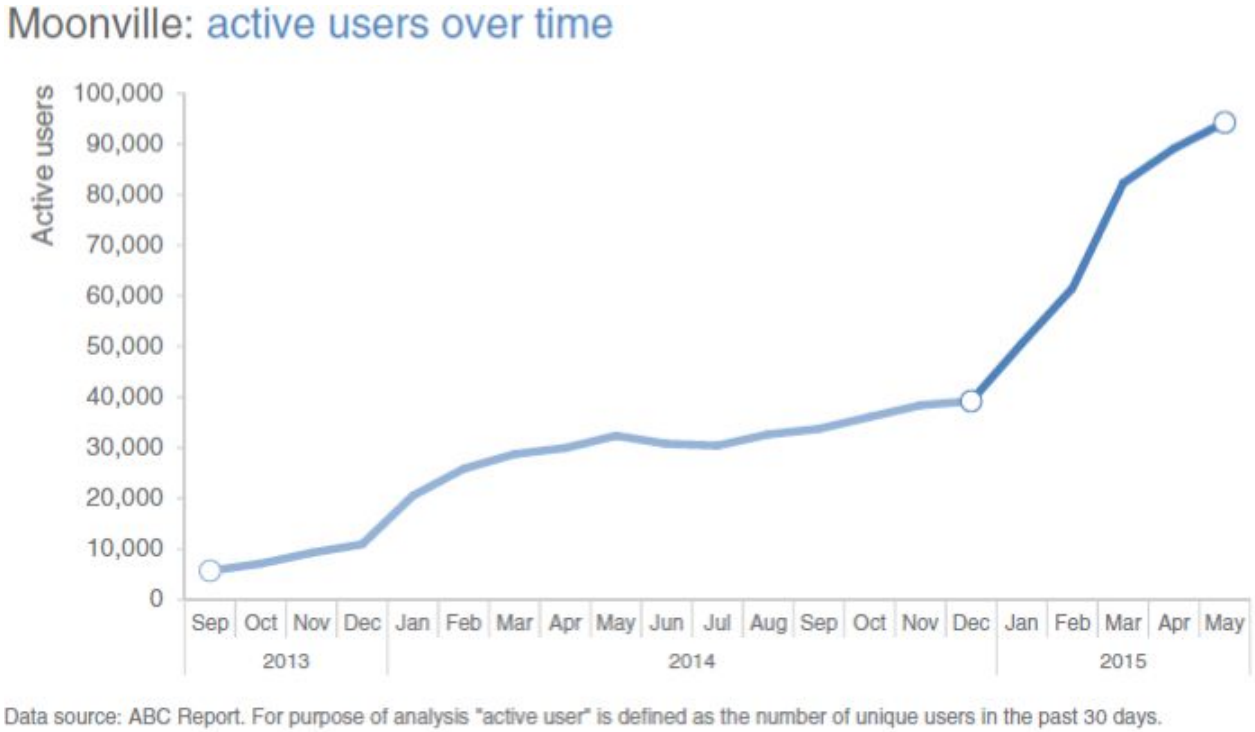
A Success Story: the increase in Moonville users over time.

Data source: ABC Report. For purpose of analysis "active user" is defined as the number of unique users in the past 30 days.

Growth was pretty flat over the rest of 2014 as we halted all marketing efforts and focused on quality improvements to the game.

Leveraging animation in the visuals you present:

A Success Story: the increase in Moonville users over time.



Data source: ABC Report. For purpose of analysis "active user" is defined as the number of unique users in the past 30 days.

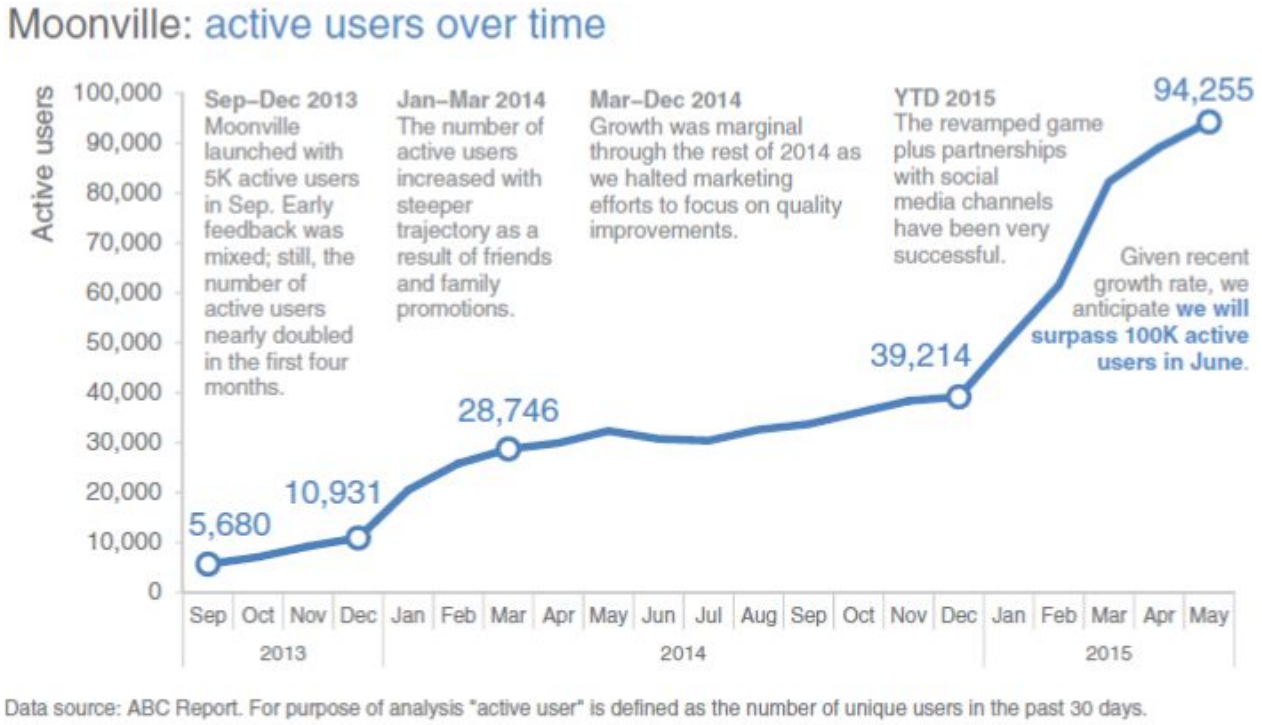
The revamped and improved game has gone viral.

The partnerships we've forged with social media channels have proven successful for continuing to increase our active user base.

At recent growth rates, we anticipate we'll surpass 100,000 active users in June!

Leveraging animation in the visuals you present:

A Success Story: the increase in Moonville users over time.



Data source: ABC Report. For purpose of analysis "active user" is defined as the number of unique users in the past 30 days.

For the circulate and detailed version for those who missed the presentation, you can leverage a version that annotates the salient points of the story on the line graph directly.

This strategy meets both the needs of your live presentation and the circulated version

3. Logic in order

Logic in order

There should be logic in the order in which you display information.

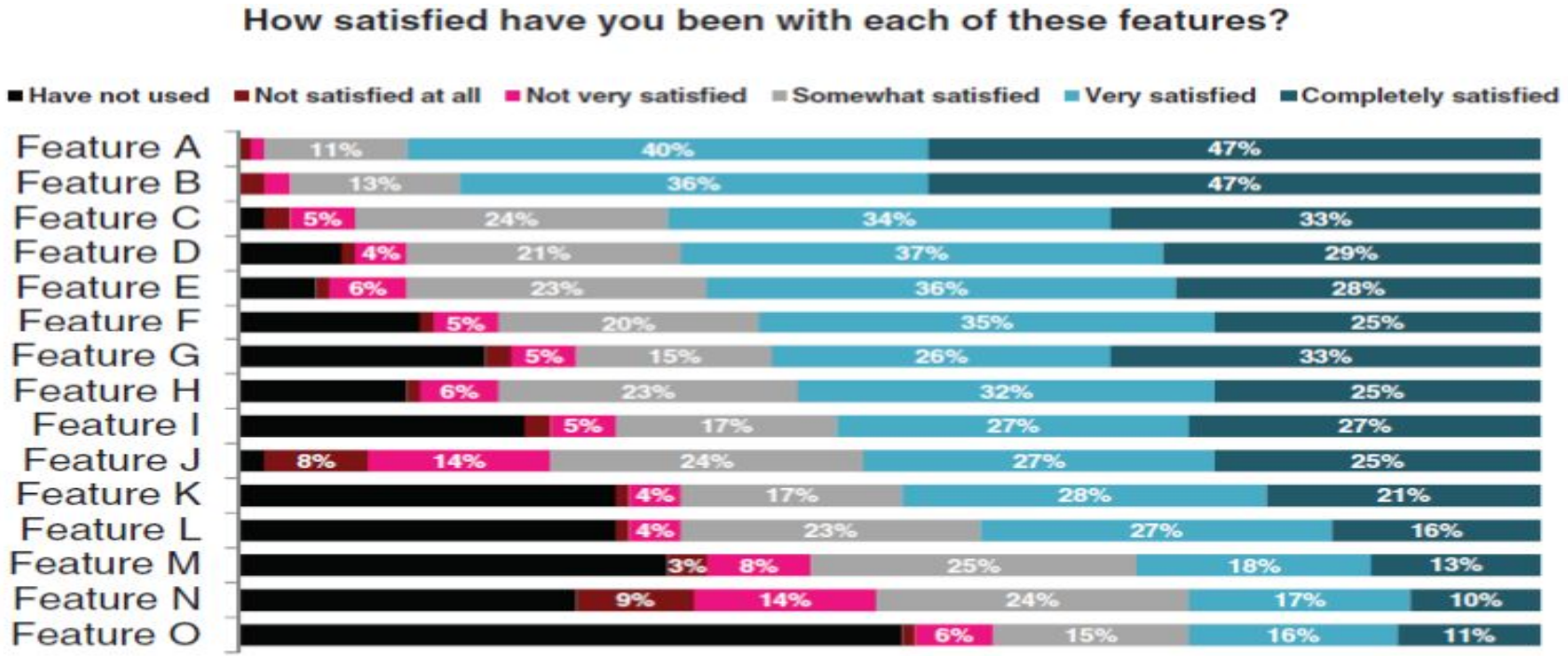
Let’s have a look at -

Leveraging order for categorical data in a horizontal bar chart.

A company that sells a product that has various features. Company surveyed the users to understand whether they are using each of the features and how satisfied they’ve been with them and want to put that data to use.

Logic in order:

Leveraging order for categorical data in a horizontal bar chart



User satisfaction, original graph

Logic in order: Leveraging order for categorical data in a horizontal bar chart

Above Visual describes the following:

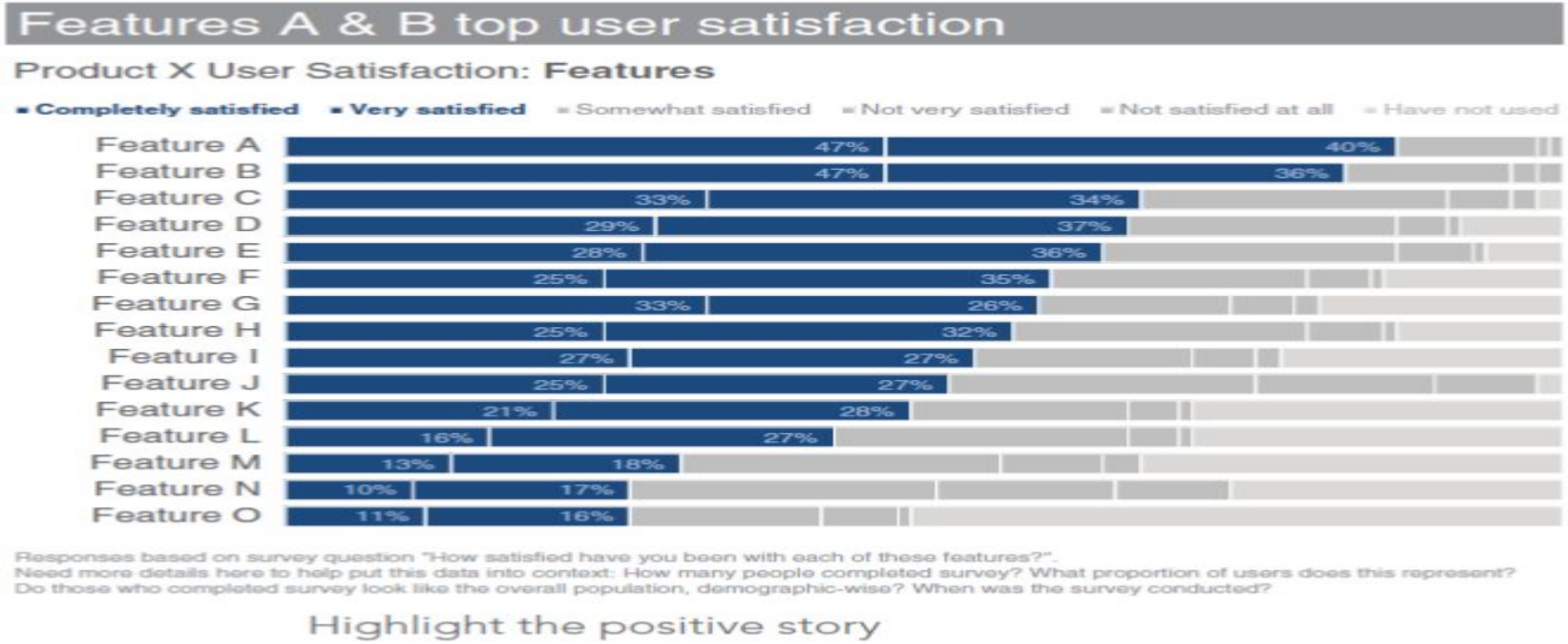
- Descriptive Features: A, B and So on…
- Data: Arranged in decreasing order of “very satisfied” plus “Completely satisfied” (to pay attention).
- Color standpoint: Bold black for “Have not used”.

Inference from Data: Shows the areas of **dissatisfaction** that would be of most interest.

Challenging part: How could we tell a number of different stories and focus on a number of different aspects (positive) of this data.

Logic in order: Leveraging order for categorical data in a horizontal bar chart

Highlighting the positive story: where our users are most satisfied



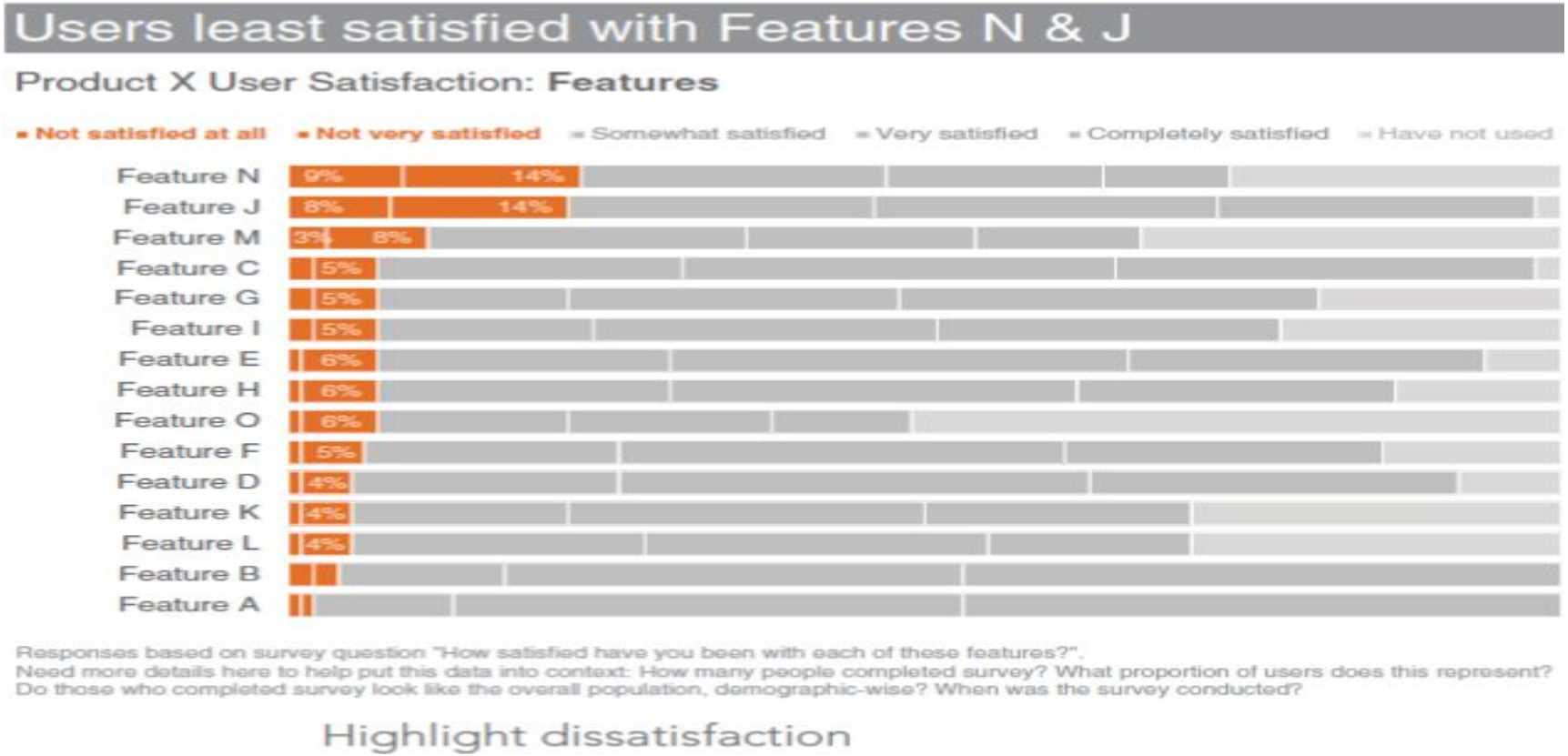
Logic in order: Leveraging order for categorical data in a horizontal bar chart

Order the data clearly by putting “Completely satisfied” plus “Very satisfied” in descending order.

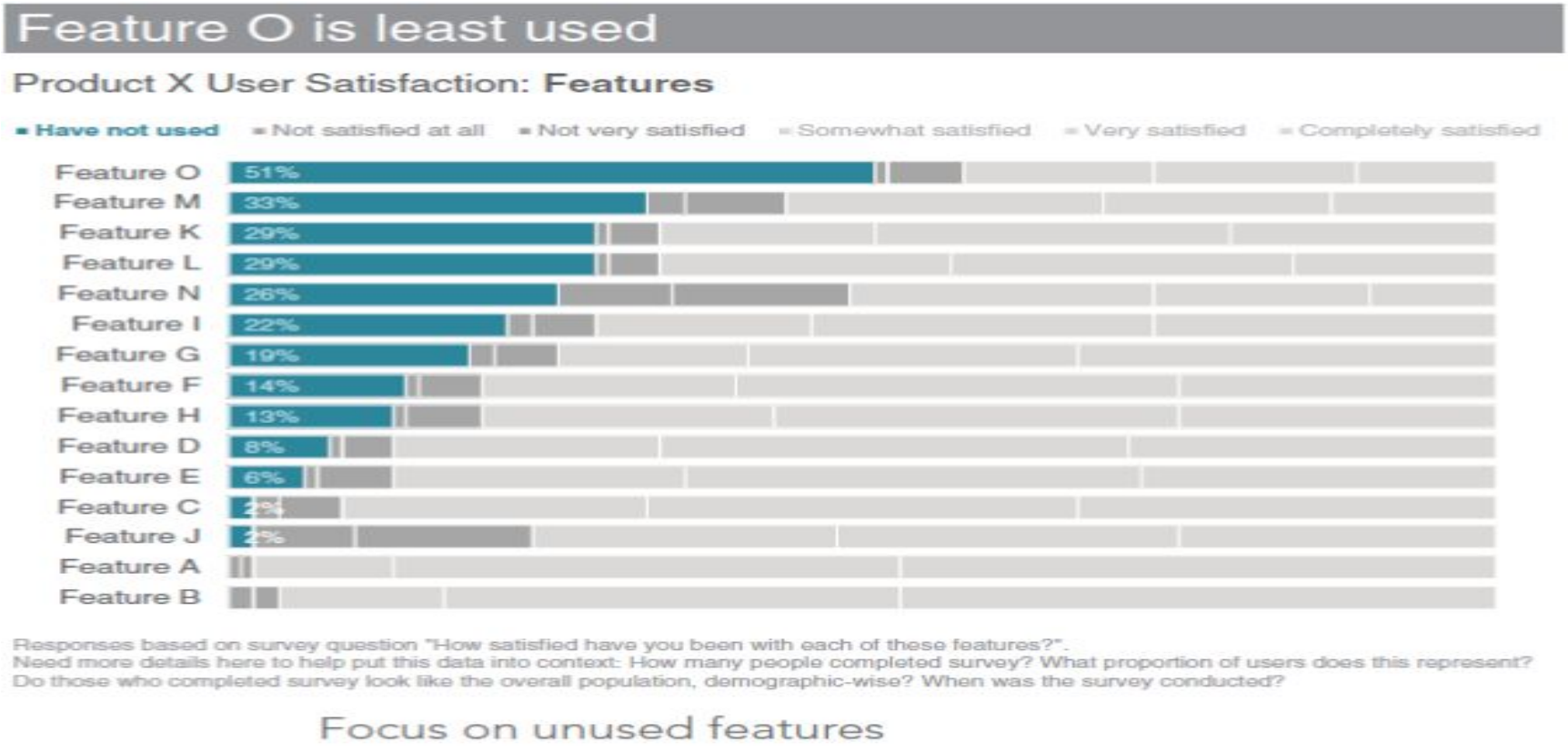
The visual cues like color, positioning of segments, explanation word all draws the attention of the audience to where they should be seeing in the visual.

Same tactics - **order, color, placement and words** can be leverage to highlight a different story within this data: where users are least satisfied

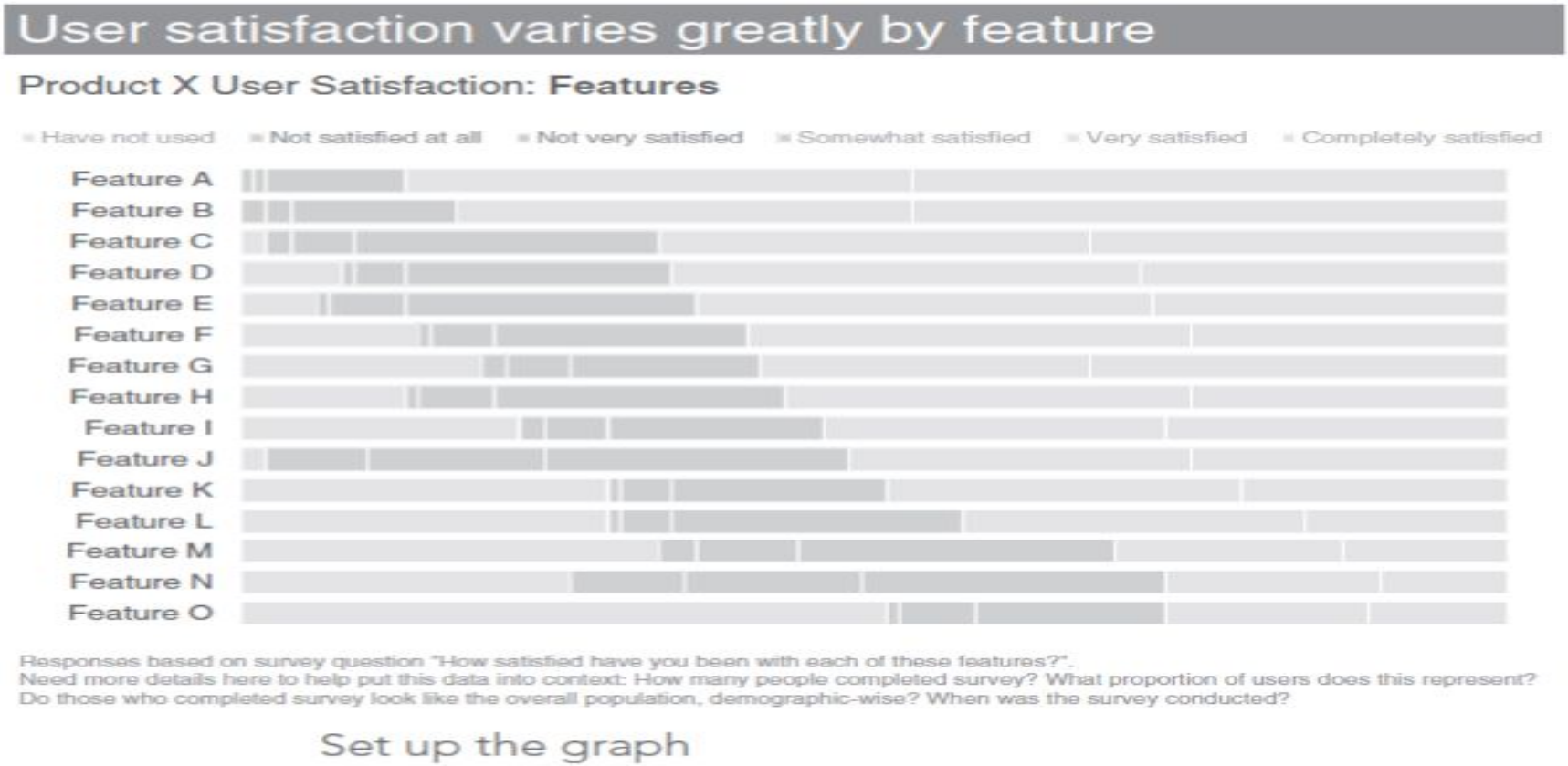
Logic in order: Leveraging order for categorical data in a horizontal bar chart



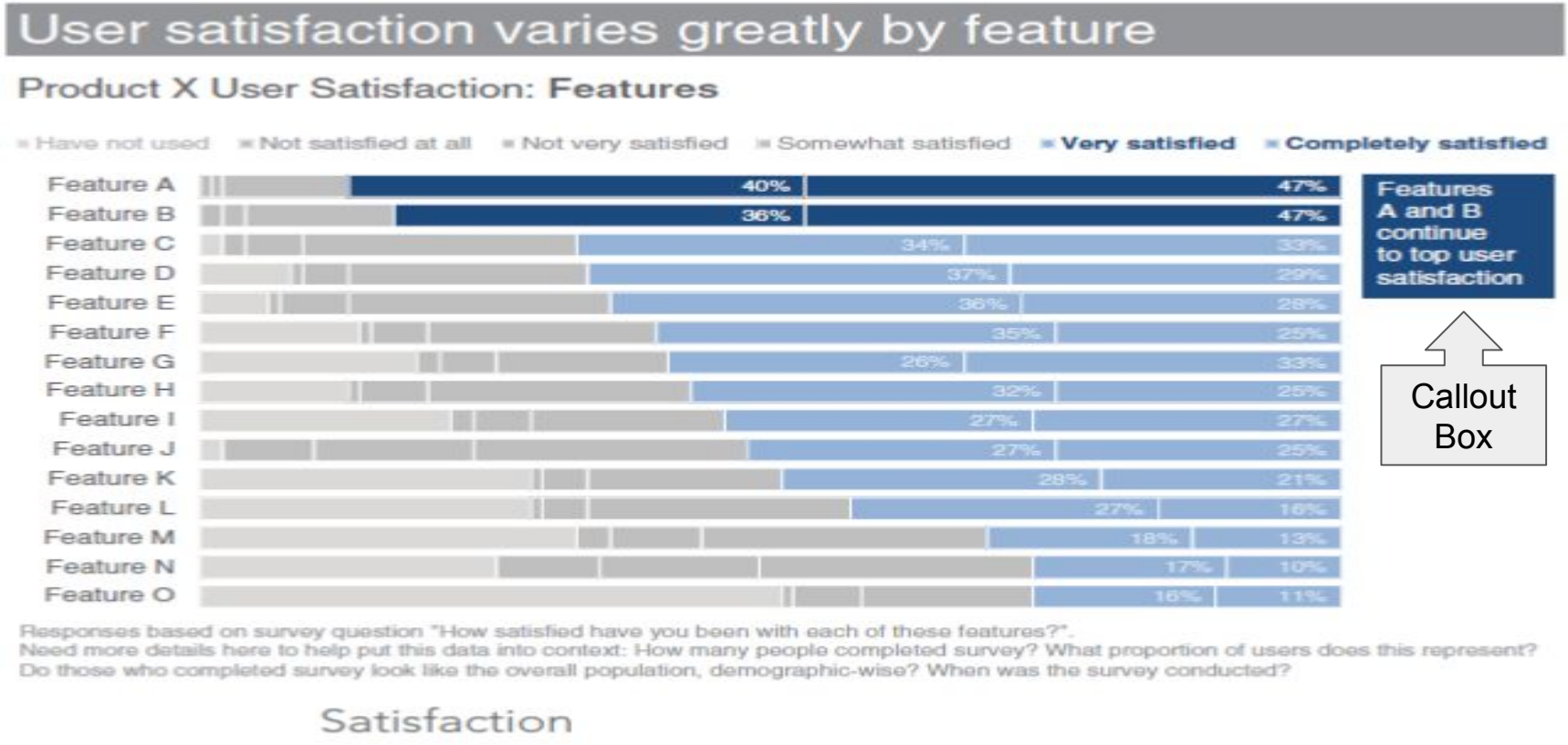
Logic in order: Leveraging order for categorical data in a horizontal bar chart



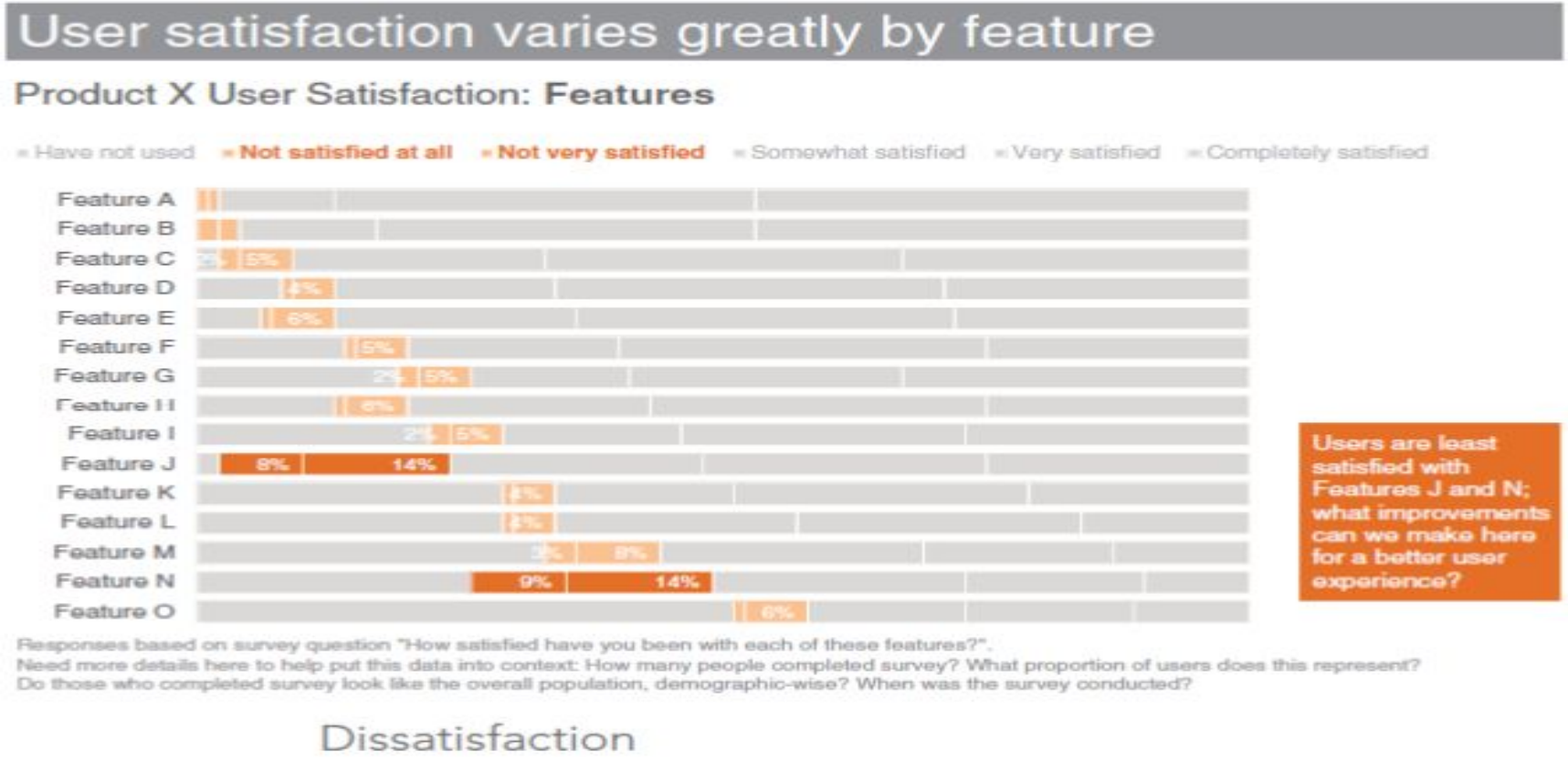
Logic in order: Leveraging order for categorical data in a horizontal bar chart



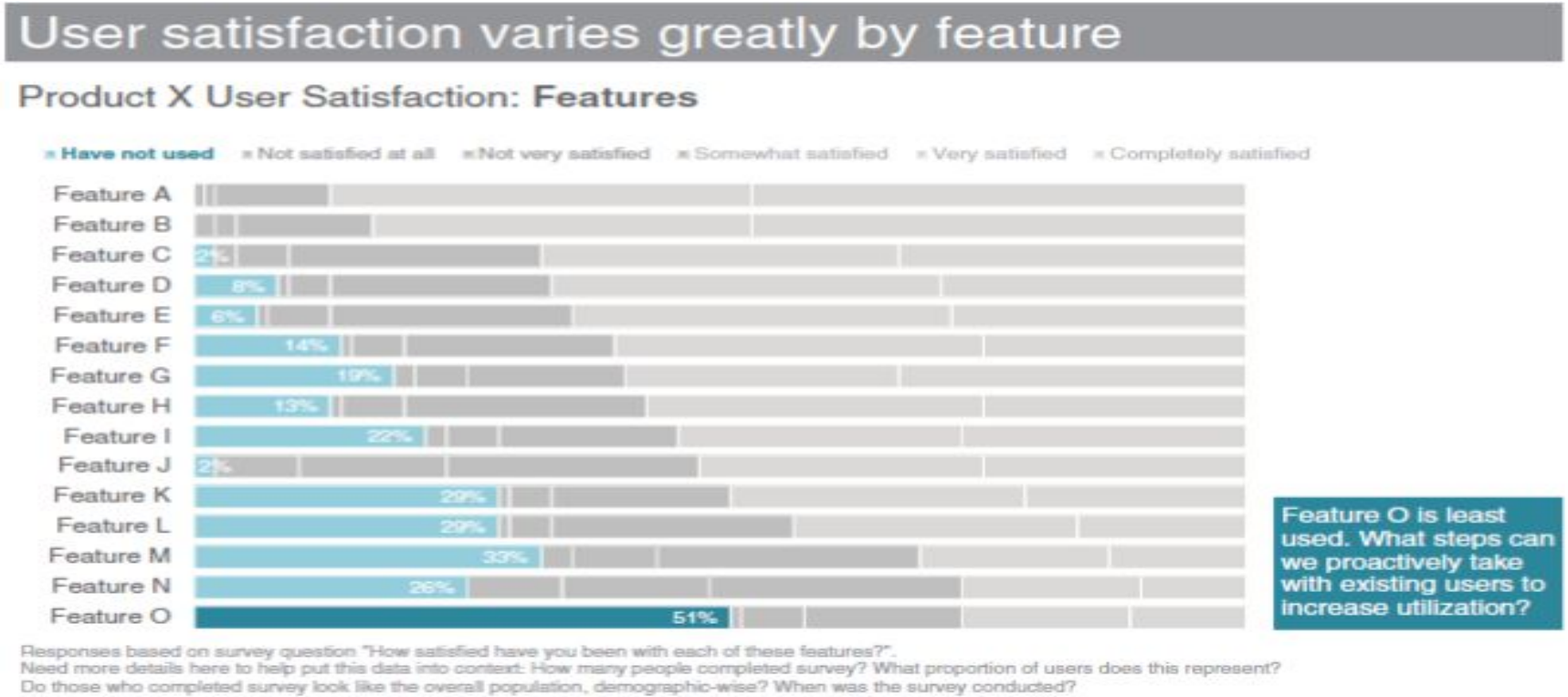
Logic in order: Leveraging order for categorical data in a horizontal bar chart



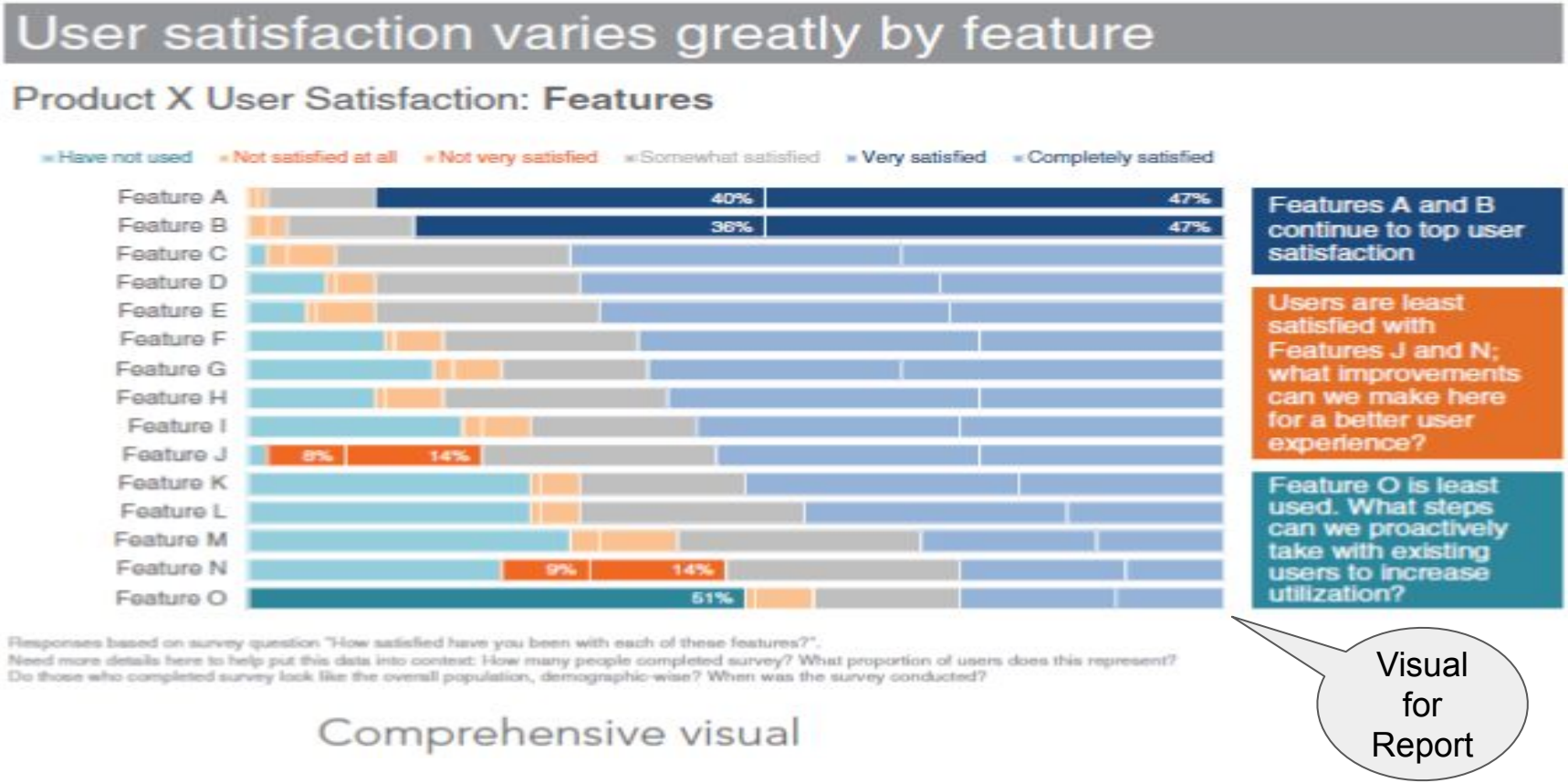
Logic in order: Leveraging order for categorical data in a horizontal bar chart



Logic in order: Leveraging order for categorical data in a horizontal bar chart



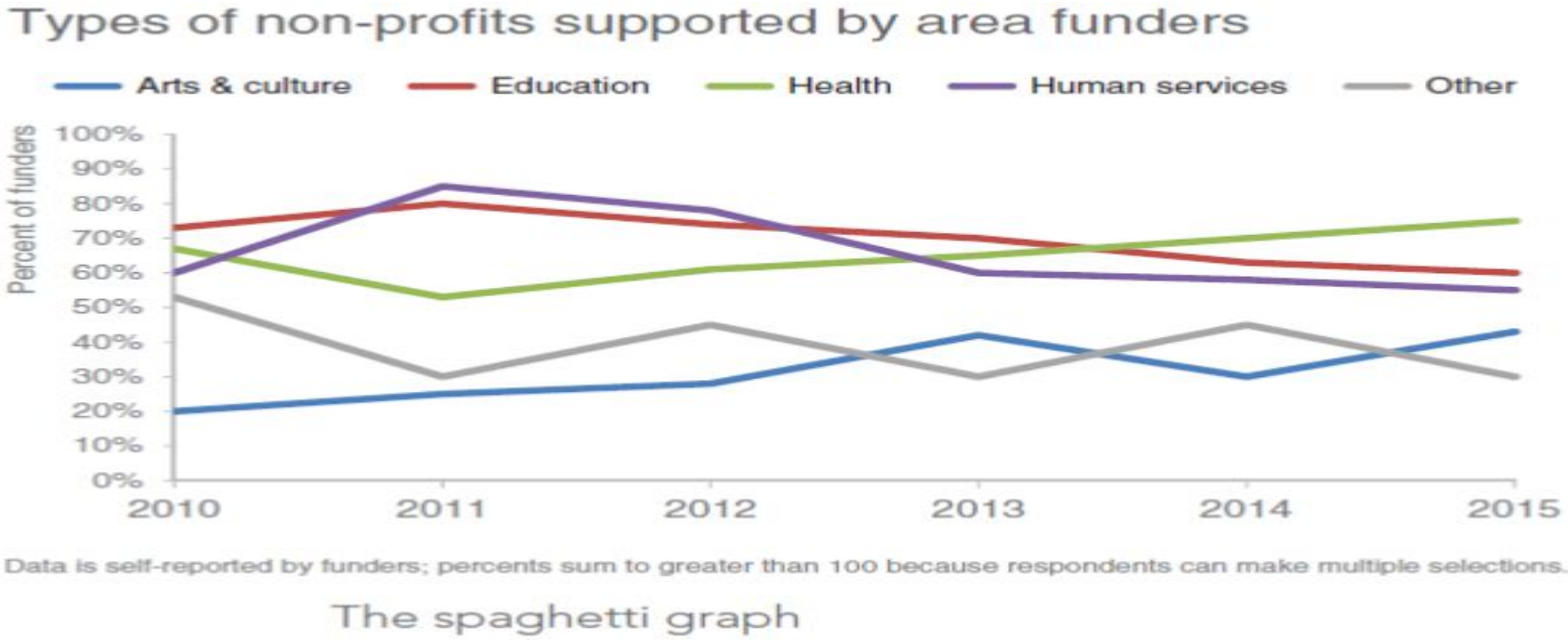
There should be logic in the order of the data you show



4. Strategies for avoiding the spaghetti graph

Strategies for avoiding the spaghetti graph

A spaghetti graph is a line graph where the lines overlap a lot, making it difficult to focus on a single series at a time.



The spaghetti graph

Strategies for avoiding the spaghetti graph

Disadvantage: It is difficult to concentrate on a single line within that mess, due to all of the crisscrossing and because so much is competing for your attention.

A few strategies to be followed for taking the would-be-spaghetti graph and creating more visual sense of the data:

- Using preattentive attributes to emphasize a single line at a time.
- Separate the lines spatially.
- Combined approach.

Strategies for avoiding the spaghetti graph: Emphasize one line at a time

To use preattentive attributes to draw attention to a single line at a time.

For example,

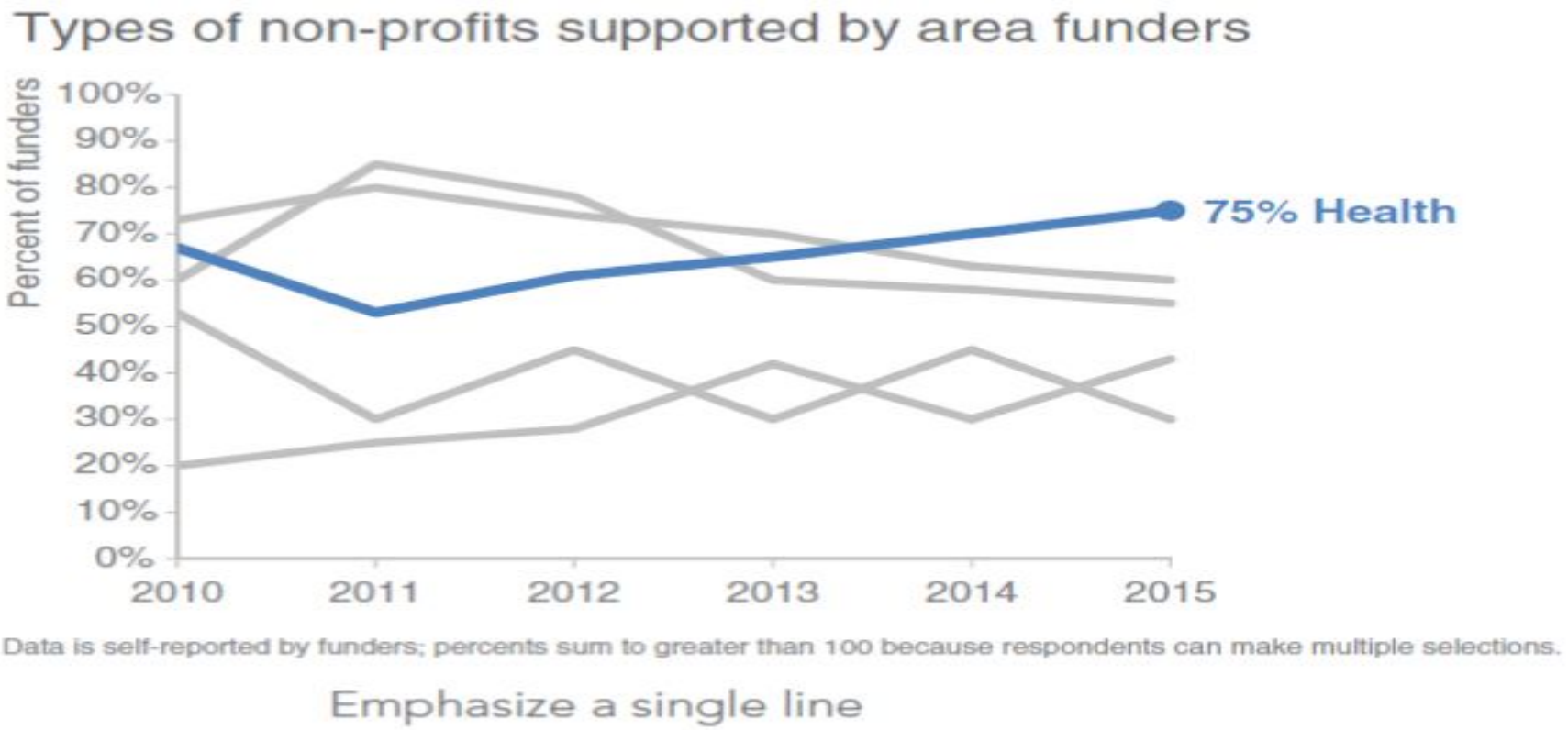
We could focus our audience on the increase in the percentage of funders donating over time to health nonprofits.

OR

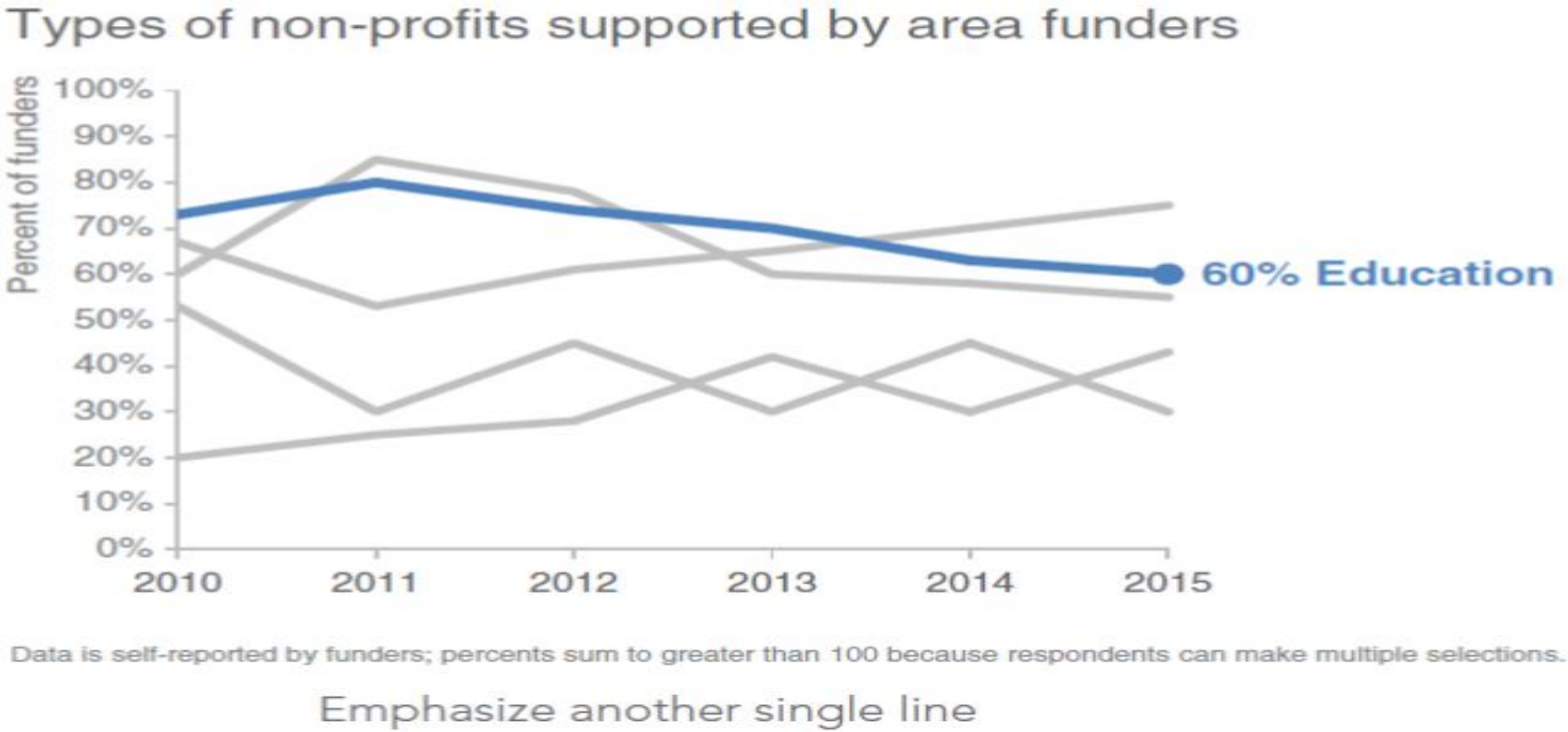
We could use the same strategy to emphasize the decrease in the percentage of funders donating to education-related nonprofits

Visual Cues to draw attention of audience to focus: **color, thickness of line, and added marks**

Strategies for avoiding the spaghetti graph: Emphasize one line at a time



Strategies for avoiding the spaghetti graph: Emphasize one line at a time



Strategies for avoiding the spaghetti graph: Separate Spatially

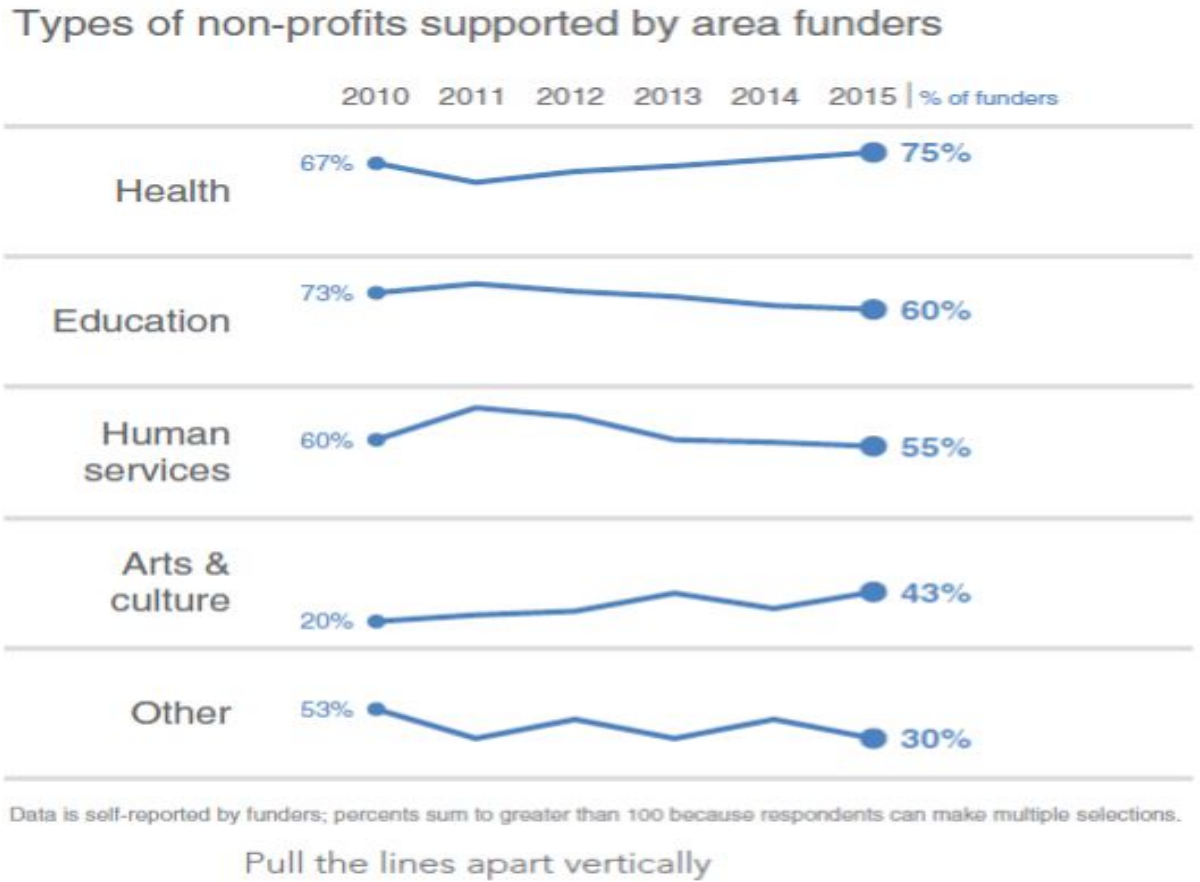
We can untangle the spaghetti graph by pulling the lines apart either vertically or horizontally

Created five separate graphs but organized them such that they appear to be a single visual.

The y-axis within each graph isn't shown; but it is important that y-axis minimum and maximum are the same for each graph so the audience can compare the relative position of each line or point within the given space.

This approach assumes that being able to see the trend for a given category (Health, Education, etc.) is more important than comparing the values across categories.

Strategies for avoiding the spaghetti graph: Separate Spatially



Strategies for avoiding the spaghetti graph: Separate Spatially

If knowing the trend is not the case then we can pull the data apart horizontally.

The relative height of the various data series allows them to more easily be compared with each other.

We can quickly see that the highest percentage of funders in 2015 donate to Health, a lower percentage to Education, an even lower percentage to Human Services, and so on.

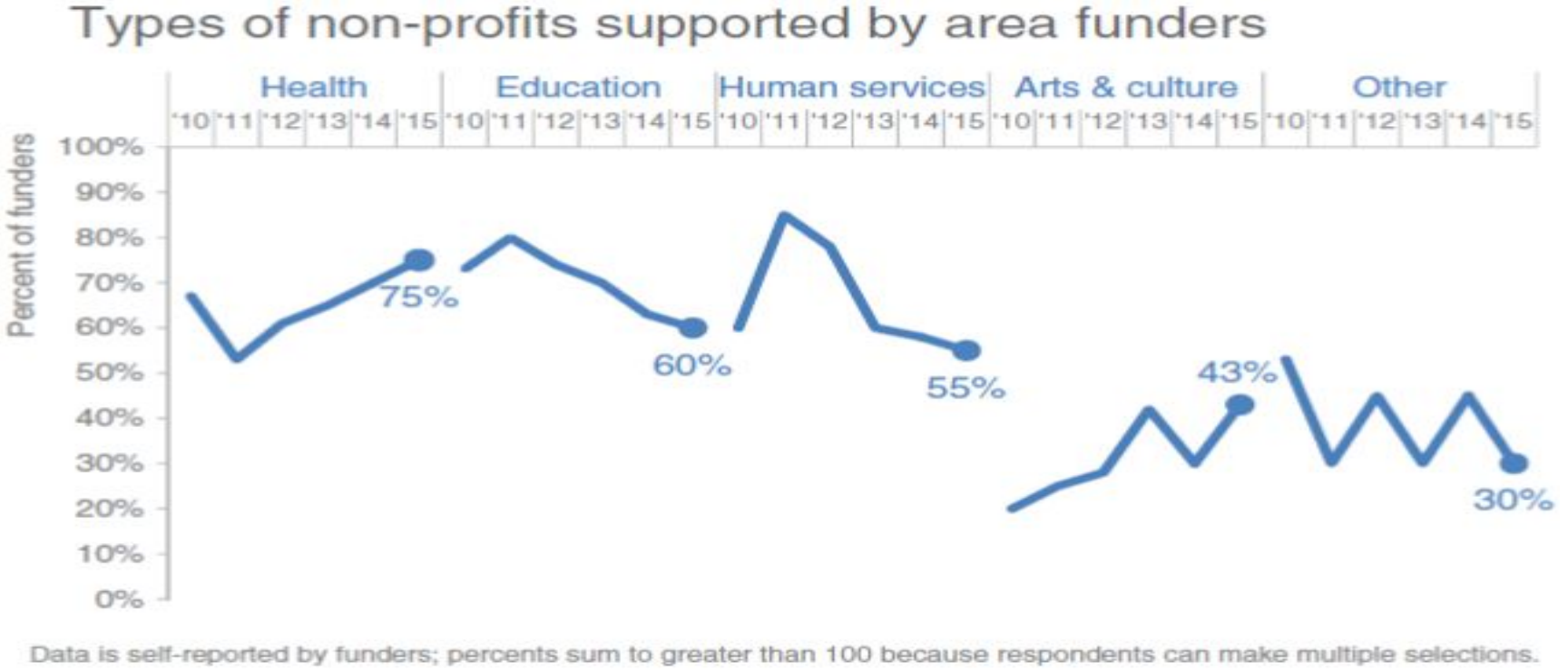
Strategies for avoiding the spaghetti graph: Combined approach

Having a number of small graphs together is referred to as “small multiples.”

This approach work well if the context of the full dataset is important but you want to be able to focus on a single line at a time.

The denseness of information, this combined approach may work better for a report or presentation that will be circulated rather than a live presentation.

Strategies for avoiding the spaghetti graph: Separate Spatially



Pull the lines apart horizontally

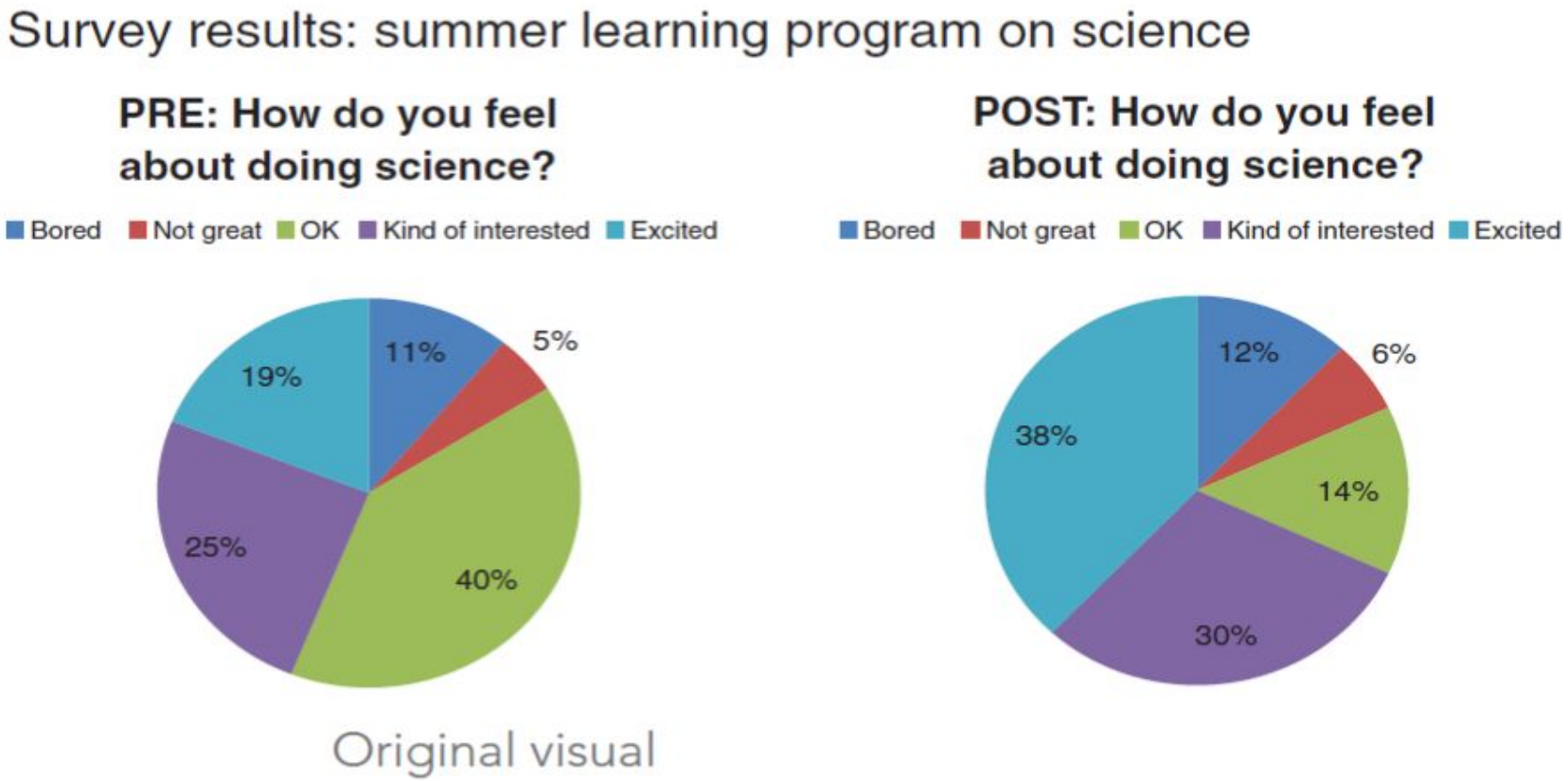
5. Alternatives to pies

Alternatives to pies

Example: Pilot Summer Program on Science

A survey being conducted at the start and at the end of the program to know the success of the pilot summer program and keep the data as evidence of success of the program and to request for future funding.

Alternatives to pies



Original visual

Alternatives to pies

Example: Pilot Summer Program on Science

The biggest segment of students (40%, the green slice, left) felt just "OK" about science. However, after the program (right), we see the 40% in green shrinks down to 14%.

"Bored" (blue) and "Not great" (red) went up a percentage point each, but the majority of the change was in a positive direction.

After the program, nearly 70% of kids (purple plus teal segments) expressed some level of interest toward science.

we've to limit or eliminate the work your audience has to do to get at the information by choosing a different type of visual.

Alternatives to pies

Example: Pilot Summer Program on Science

Four alternatives for displaying this data—

- Show the numbers directly,
- Simple bar graph,
- Stacked horizontal bar graph, and
- Slopegraph

Alternatives to pies

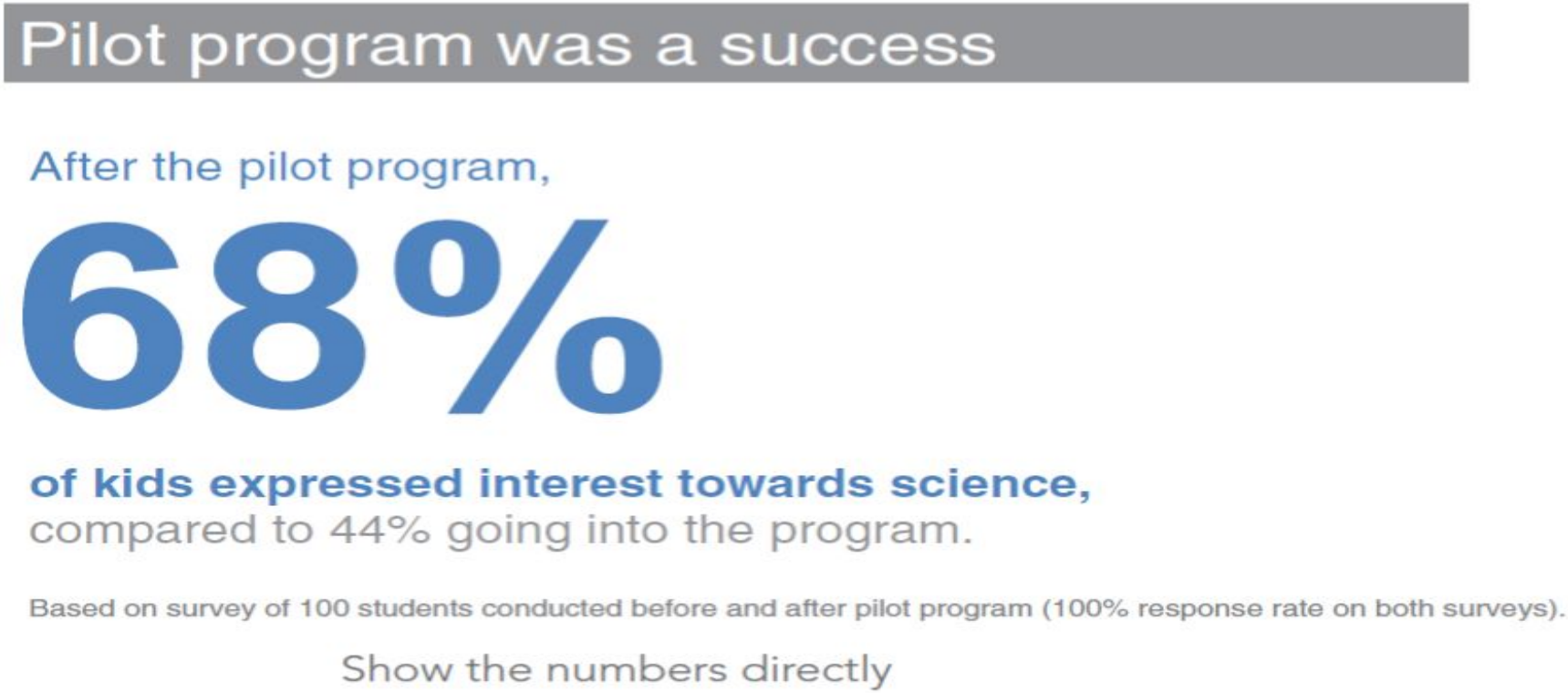
Example: Pilot Summer Program on Science

Four alternatives for displaying this data—

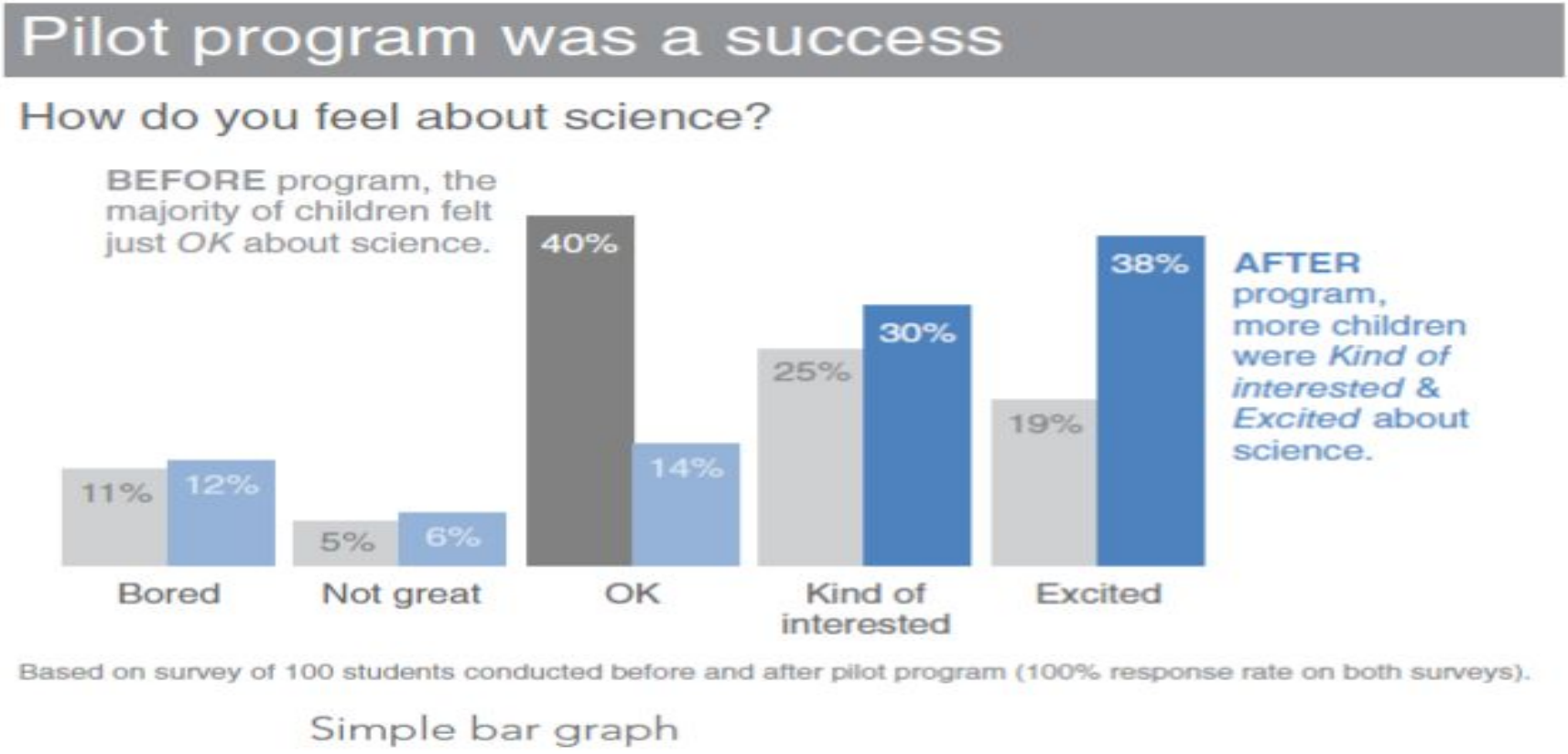
- Show the numbers directly,
- Simple bar graph,
- Stacked horizontal bar graph, and
- Slopegraph

Alternatives to pies: show the numbers directly

- **Show one or two numbers directly**



Alternatives to pies: simple bar graph



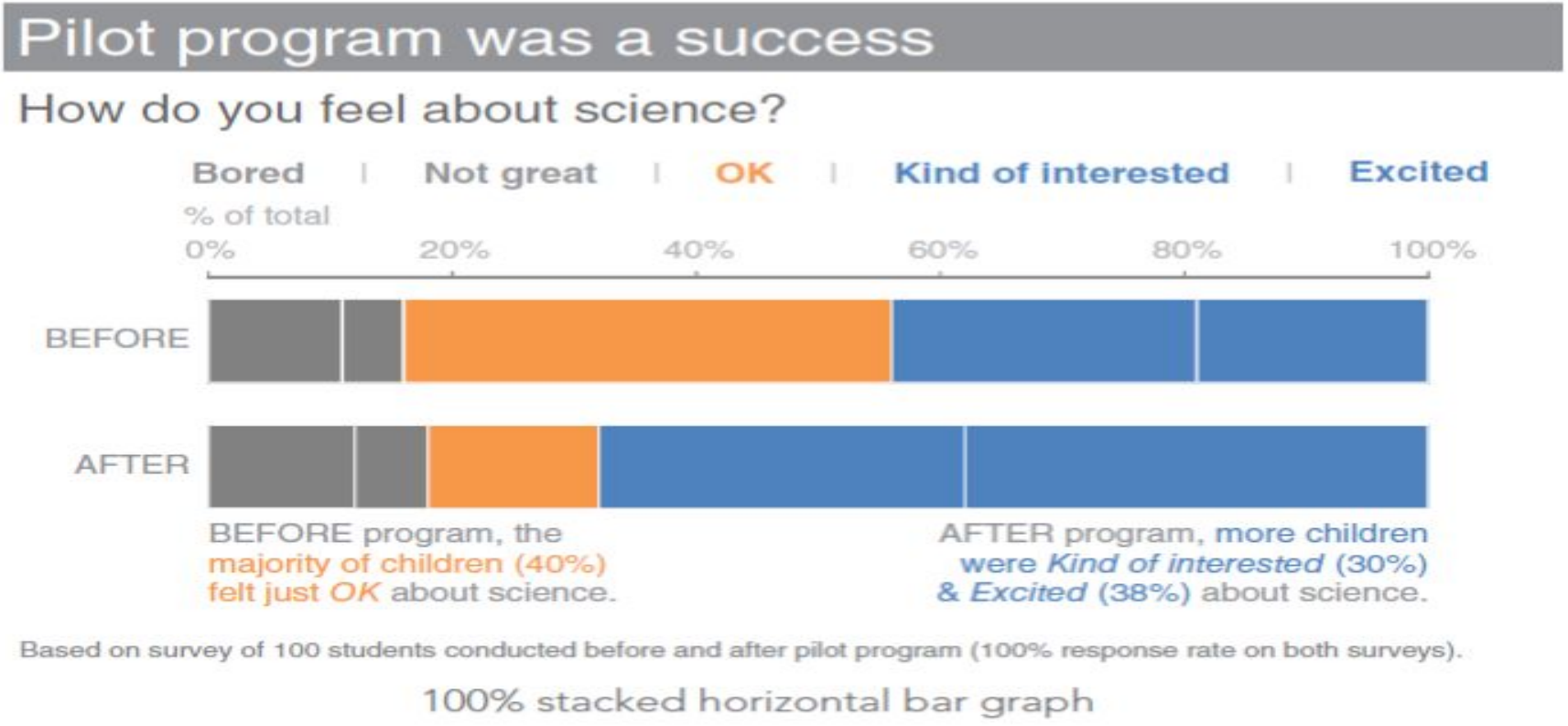
Simple bar graph

Alternatives to pies: simple bar graph

When you want to compare two things, you should generally put those two things as close together as possible and align them along a common baseline to make this comparison easy.

The simple bar graph does this by aligning the Before and After survey responses with a consistent baseline at the bottom of the graph.

Alternatives to pies: 100% stacked horizontal bar graph



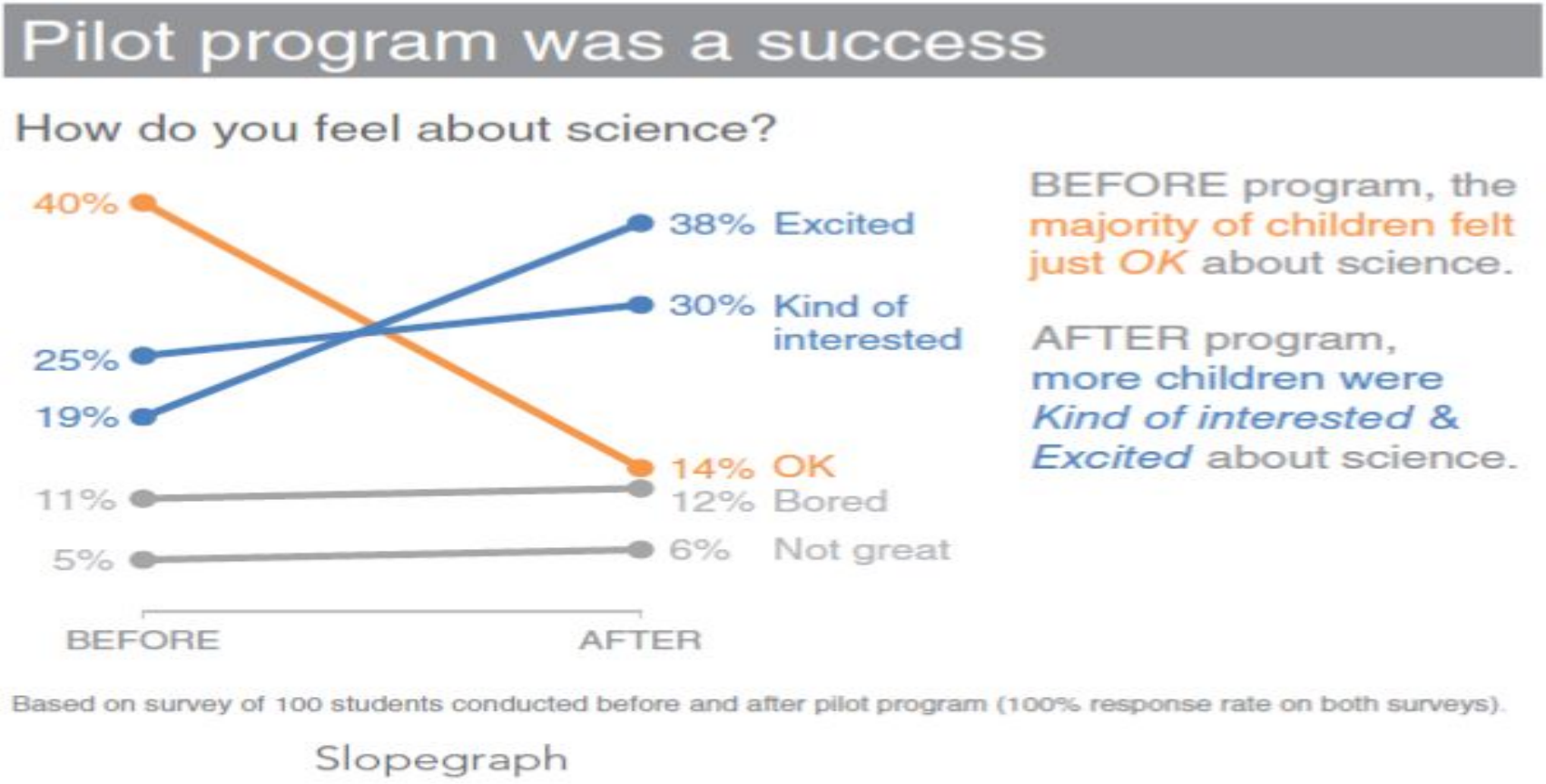
100% stacked horizontal bar graph

Alternatives to pies: 100% stacked horizontal bar graph

When the part-to-whole concept is important, then the stacked 100% horizontal bar graph achieves this.

This allows the audience to easily compare both the negative segments at the left and the positive segments at the right across the two bars and, because of this, is a useful way to visualize survey data in general.

Alternatives to pies: slopegraph



Alternatives to pies: Slopegraph

With the slopegraph, you can easily see the visual percentage change from Before to After for each category via the slope of the respective line.

The big lesson here is that you have a number of alternatives to pies that can be more effective for getting your point across.

Where to go from here?

Five final tips:

- Learn your tools well,
- Iterate and seek feedback,
- Allow ample time for this part of the process,
- Seek inspiration through example and,
- Have some fun

Popular Visualization tools:

- Google spreadsheets
- Tableau
- Programming language: R D3(Java Script, Processing and Python)
- Adobe Illustrator
- Paper

- Eager Eyes
- FiveThirtyEight's Data Lab
- Flowing Data
- The Functional Art
- The Guardian Data Blog
- HelpMeViz

- Junk Charts
- Make a Powerful Point
- Perceptual Edge
- Visualising Data
- VizWiz
- Storytelling with data

Finally

Communicating the data:

- Understand the context
- Choose an appropriate visual display
- Eliminate clutter
- Focus attention where you want it
- Think like a designer
- Tell a story

THE END