



Mu Sigma

Thursday Learning Hour – Application of storyboarding in Dashboard Design

by
Hussain Kothari

Basics of creating a story with data

Do The Math

Chicago, IL

Bangalore, India

www.mu-sigma.com

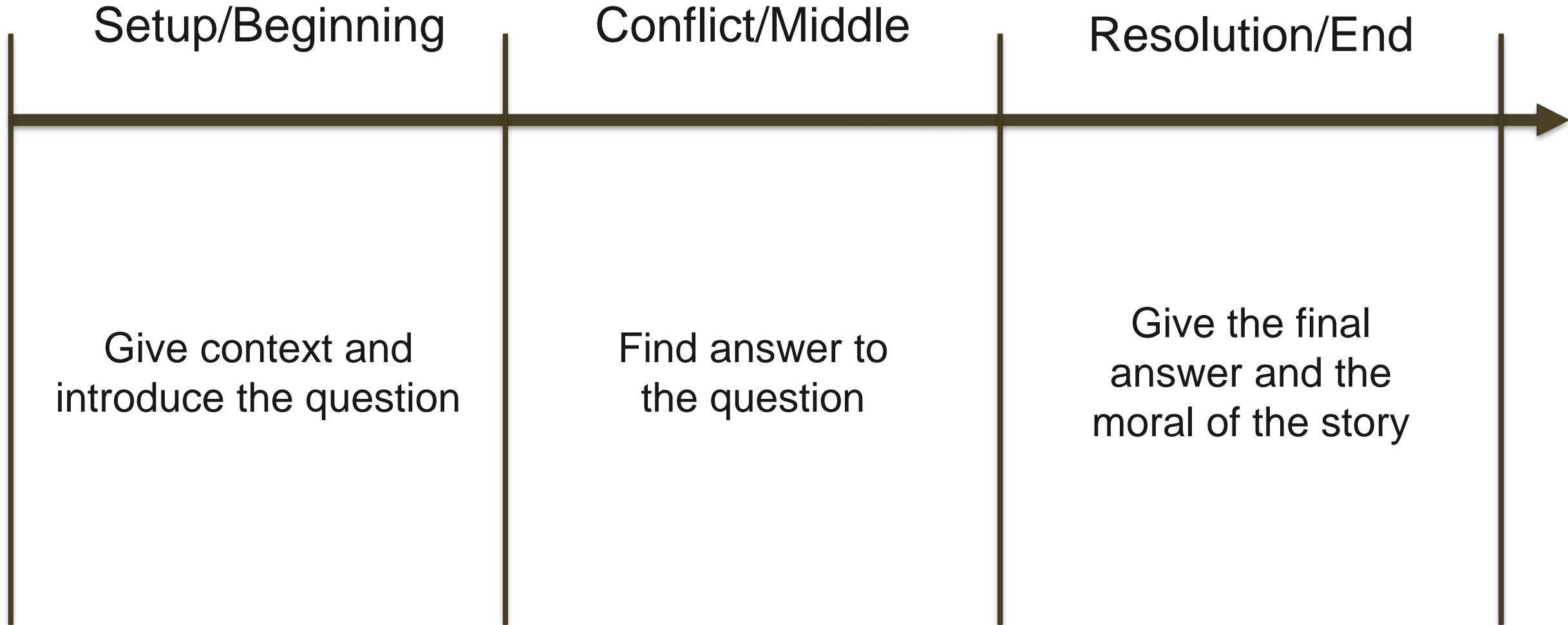
13th Jan 2022

- The power of a good story
 - Why even bother with a story?
 - The 3-act structure
 - How can I make my story interesting
 - Create a compelling narrative
 - Other tips to make a story
- Your most powerful weapon – Data Visuals
 - Types of visuals
 - Clutter is your enemy
 - Direct their focus and grab attention
- Case study
 - Creating a storyboard
 - Design Basics of a dashboard
 - Power BI best practices

Why even bother with a story?



The 3-Act Structure



How can I make my story interesting?

Conflict and tension are the most important pieces of your story



Create a compelling narrative

- Know your audience
- Action driven or decision driven
- Executive summary
- Chronological or Reverse Chronological

Other tips to make a story

- Horizontal and Vertical logic
- Take a fresh perspective
- 3-minute story/ elevator pitch
- Include an executive summary at the beginning and at the end

Decision Scientist's Greatest Weapon – Data Visualisation

91%

	A	B	C
Category 1	15%	22%	42%
Category 2	40%	36%	20%
Category 3	35%	17%	34%
Category 4	30%	29%	26%
Category 5	55%	30%	58%
Category 6	11%	25%	49%

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Category 1	15%	22%	42%
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Category 6	11%	25%	49%



Simple text

Table

Heatmap

Vertical bar



Scatterplot

Line

Slopegraph

Horizontal bar

Types of visuals – Text and Tables

Heavy borders

Group	Metric A	Metric B	Metric C
Group 1	\$X.X	Y%	Z,ZZZ
Group 2	\$X.X	Y%	Z,ZZZ
Group 3	\$X.X	Y%	Z,ZZZ
Group 4	\$X.X	Y%	Z,ZZZ
Group 5	\$X.X	Y%	Z,ZZZ

Light borders

Group	Metric A	Metric B	Metric C
Group 1	\$X.X	Y%	Z,ZZZ
Group 2	\$X.X	Y%	Z,ZZZ
Group 3	\$X.X	Y%	Z,ZZZ
Group 4	\$X.X	Y%	Z,ZZZ
Group 5	\$X.X	Y%	Z,ZZZ

Table

	A	B	C
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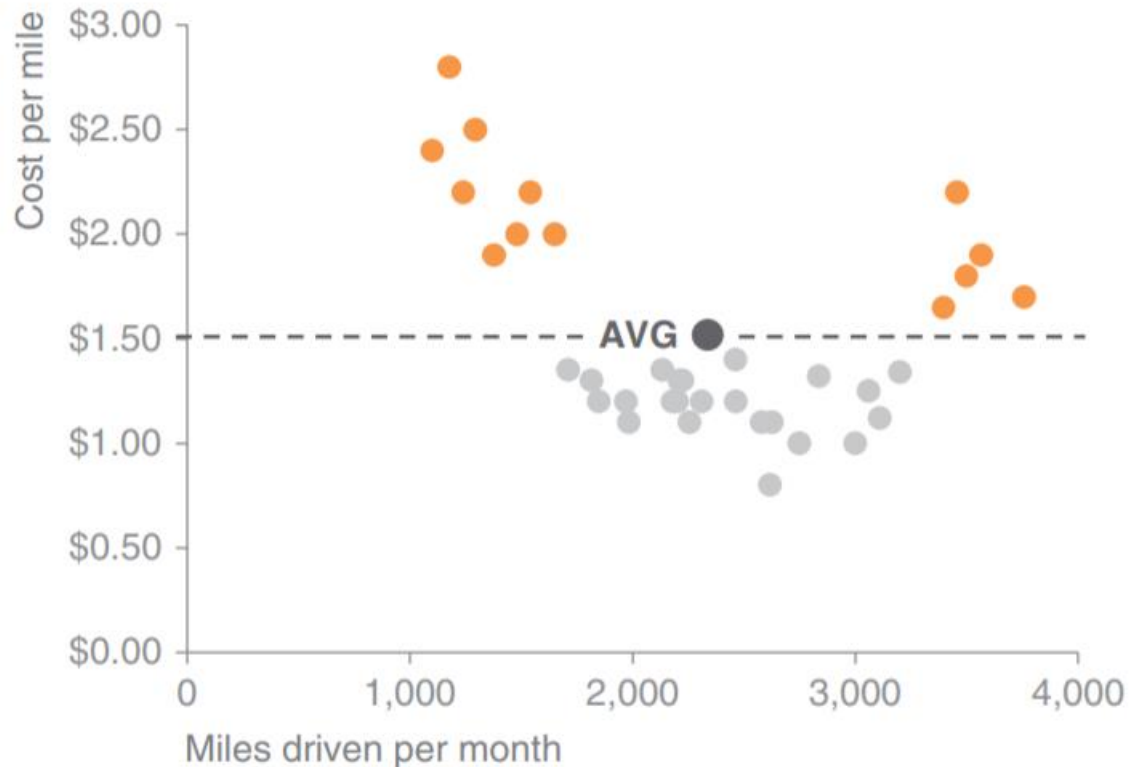
Heatmap

LOW-HIGH

	A	B	C
Category 1	15%	22%	42%
Category 2	40%	36%	20%
Category 3	35%	17%	34%
Category 4	30%	29%	26%
Category 5	55%	30%	58%
Category 6	11%	25%	49%

Types of visuals – Scatterplots

Cost per mile by miles driven



Scatterplots can be useful for showing the relationship between two things, because they allow you to encode data simultaneously on a horizontal x-axis and vertical y-axis to see whether and what relationship exists

Types of visuals – Line Graphs

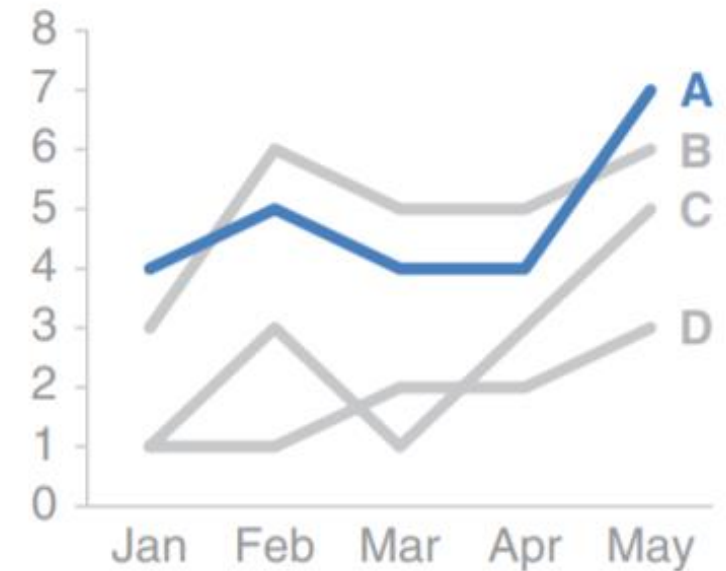
Single series



Two series

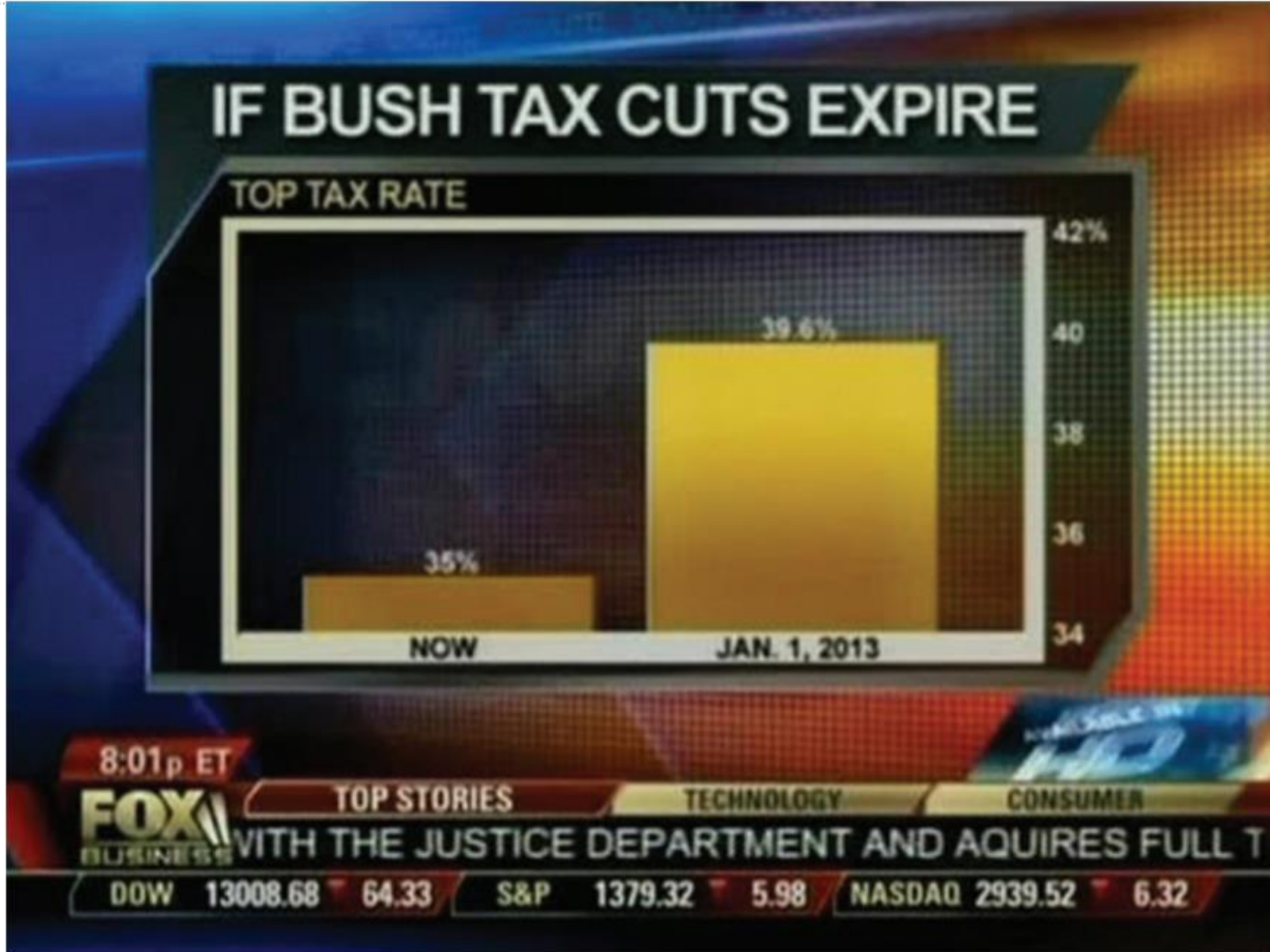


Multiple series

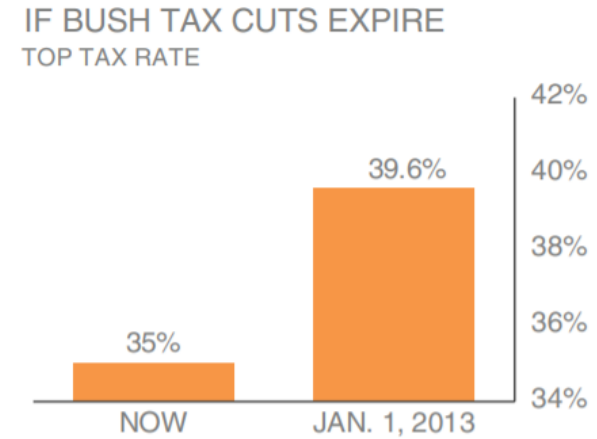


While using line graph, it is better to colour code the series and add series labels rather than having a legend

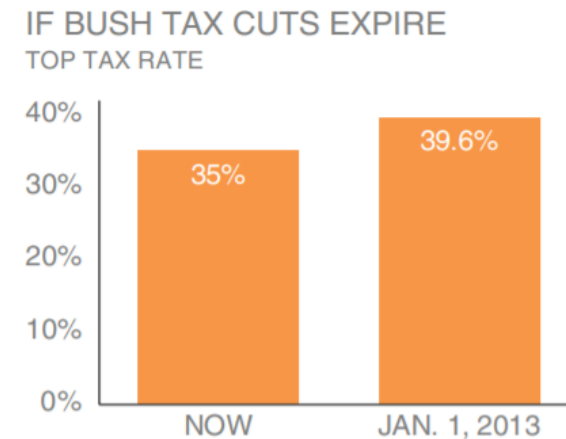
Types of visuals – Bar Graphs



Non-zero baseline: as originally graphed

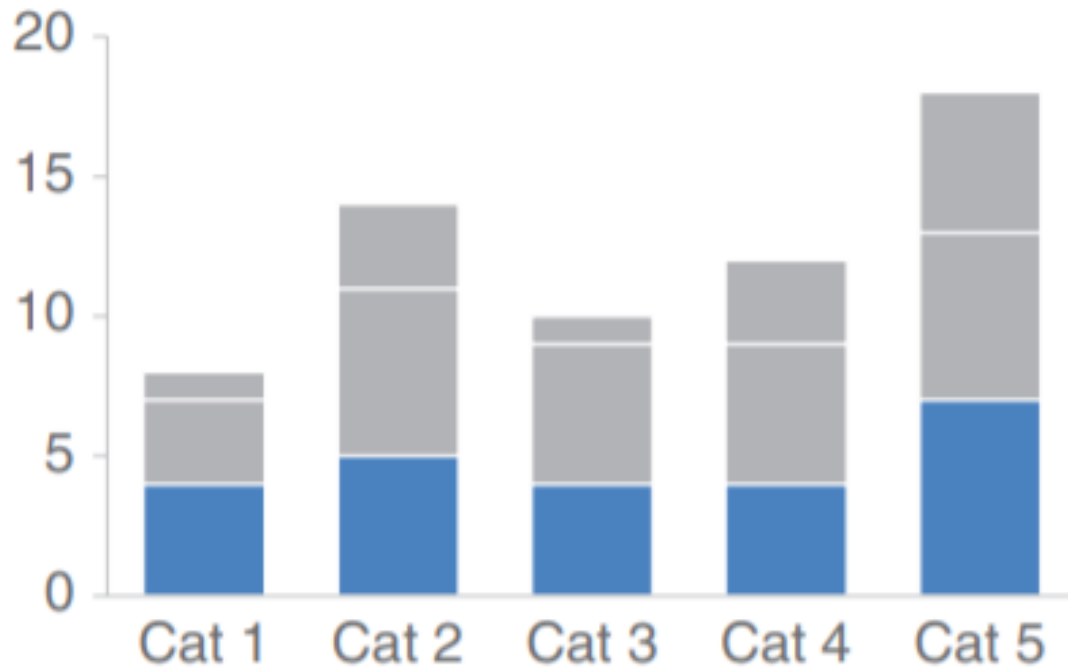


Zero baseline: as it should be graphed

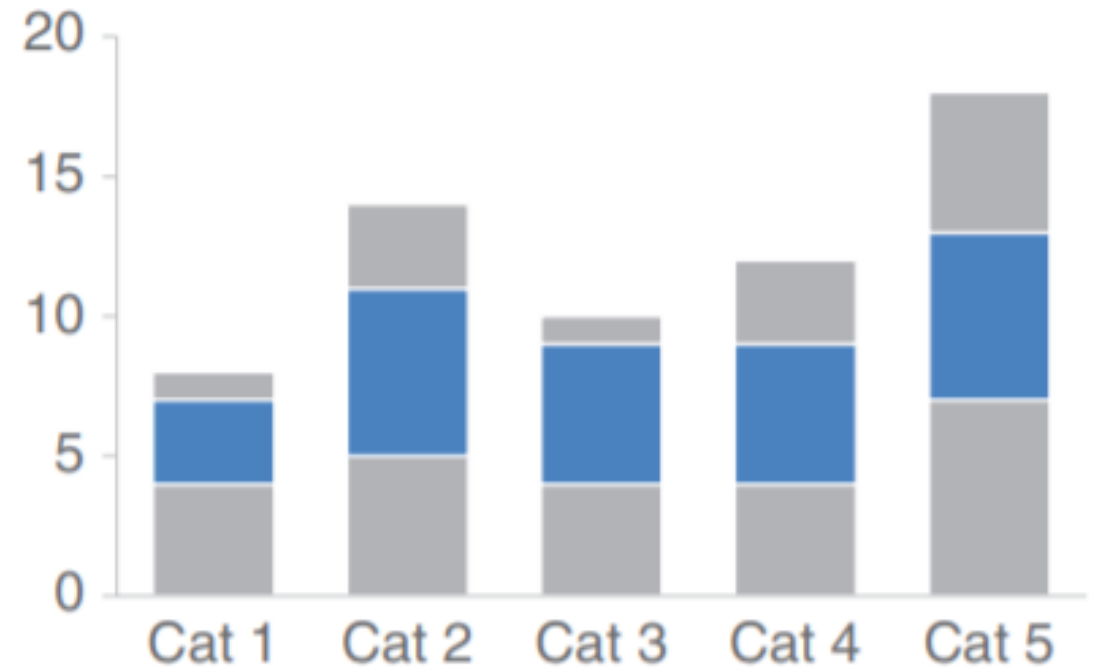


Types of visuals – Stacked Bar Graphs

Comparing **these** is easy



Comparing **these** is hard



Clutter is your enemy – 1

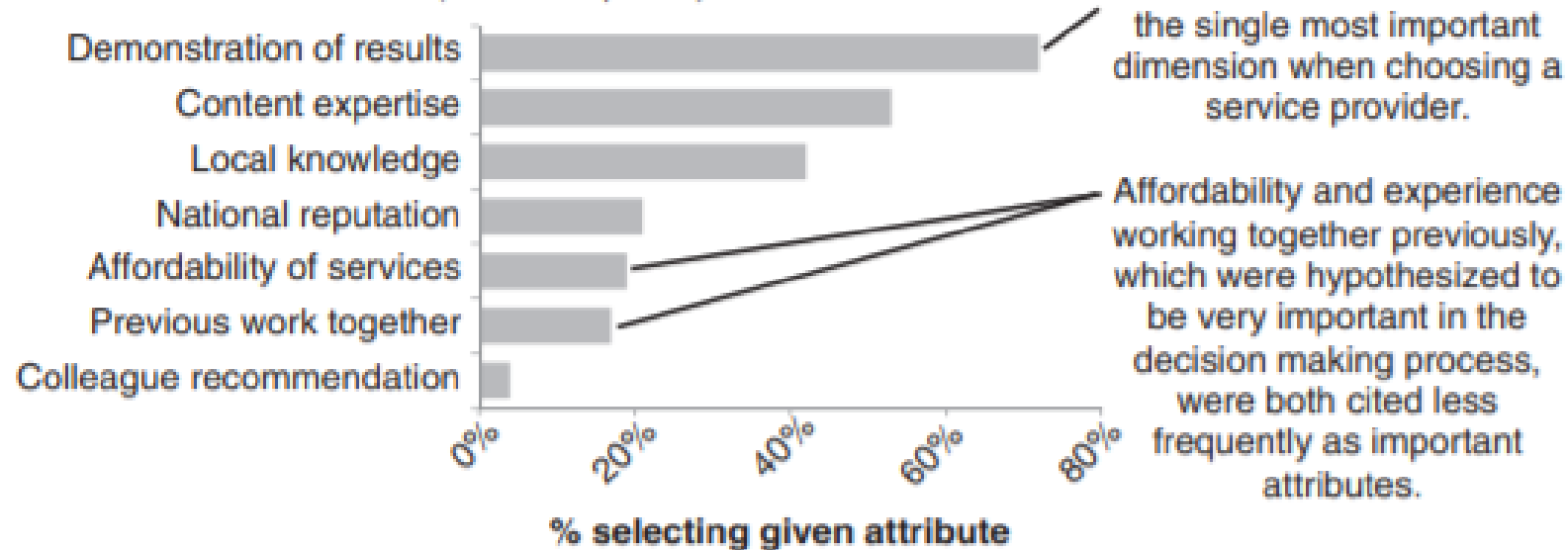
Taking something average...



Mu Sigma

Demonstrating effectiveness is most important consideration when selecting a provider

In general, what attributes are the most important to you in selecting a service provider?
(Choose up to 3)



Data source: xyz; includes N number of survey respondents. Note that respondents were able to choose up to 3 options.

Clutter is your enemy – 2

...and making it better

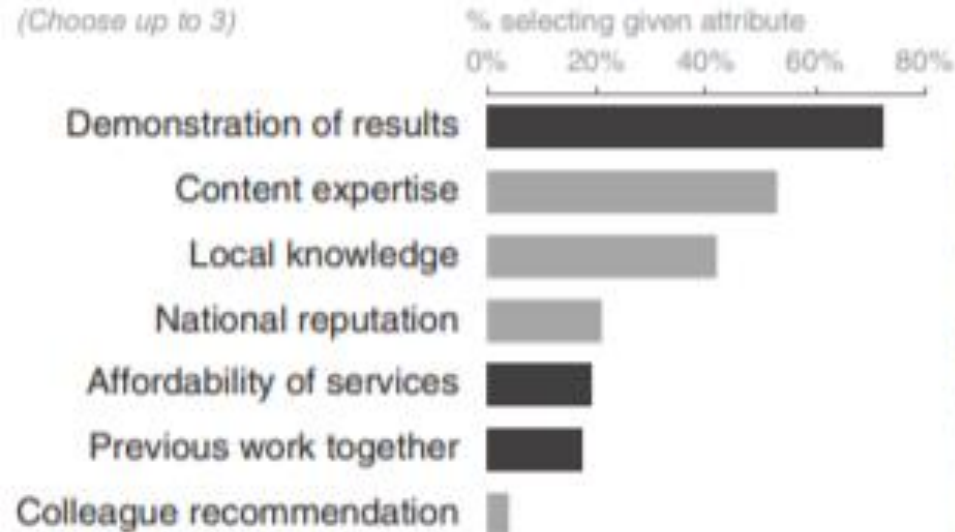


Mu Sigma

Demonstrating effectiveness is most important consideration when selecting a provider

In general, **what attributes are the most important** to you in selecting a service provider?

(Choose up to 3)



Survey shows that **demonstration of results** is the single most important dimension when choosing a service provider.

Affordability and **experience working together previously**, which were hypothesized to be very important in the decision making process, were both cited less frequently as important attributes.

Data source: xyz; includes N number of survey respondents.
Note that respondents were able to choose up to 3 options.

Direct their focus and grab attention with pre attentive attributes



Orientation



Shape



Line length



Line width



Size



Curvature



Added marks



Enclosure



Hue



Intensity



Spatial position



Motion

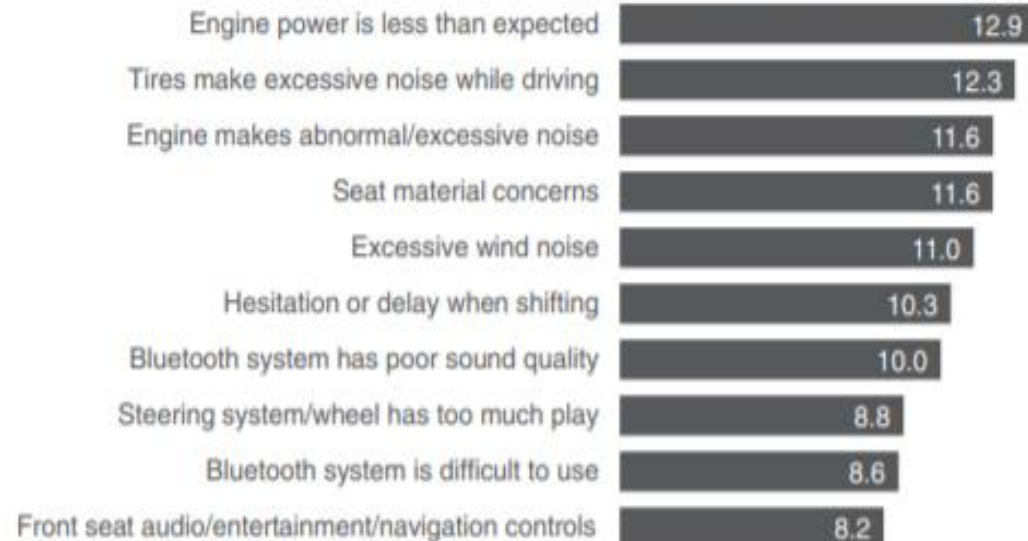
Pre-Attentive Attributes in Graphs

Example 1

Create a visual hierarchy

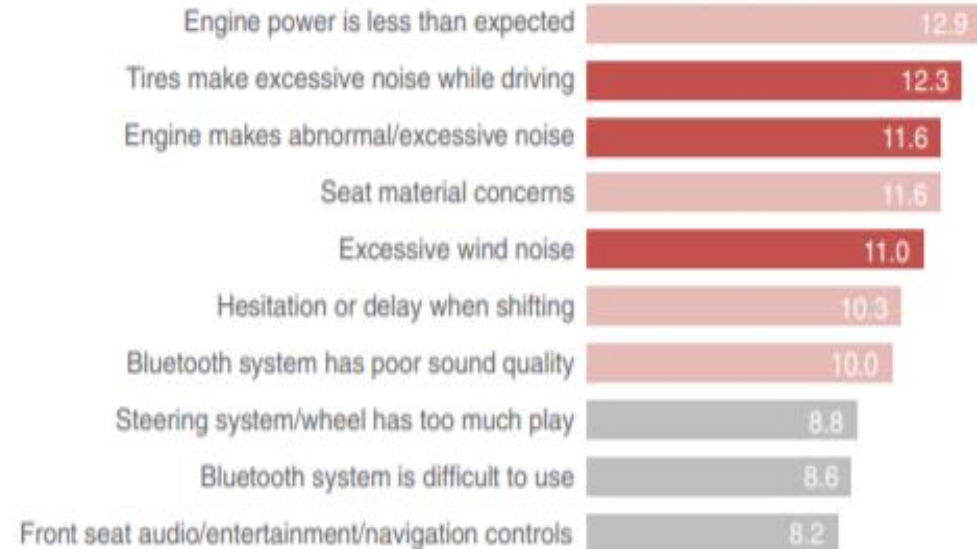
Top 10 design concerns

concerns per 1,000



Top 10 design concerns

concerns per 1,000



Comments indicate that **noisy tire issues** are most apparent **in the rain**.

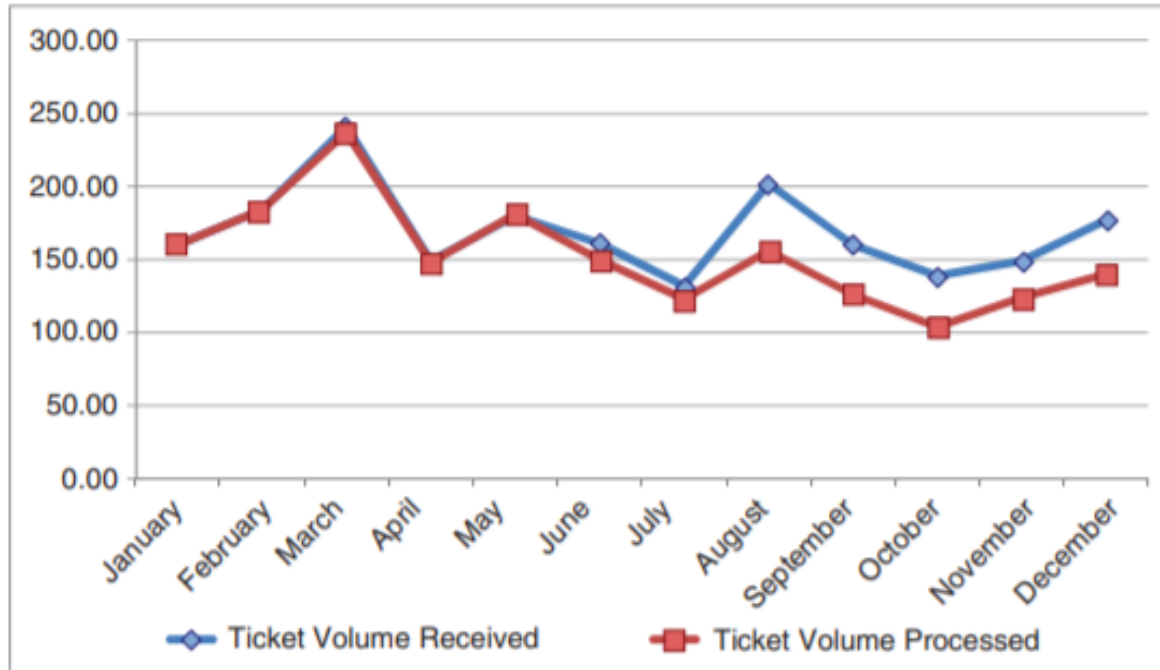
Complaints about **engine noise** commonly cited **after the car had not been driven for a while**.

Excessive **wind noise** is noted primarily in **freeway driving at high speeds**.

Pre-Attentive Attributes in Graphs

Example 2

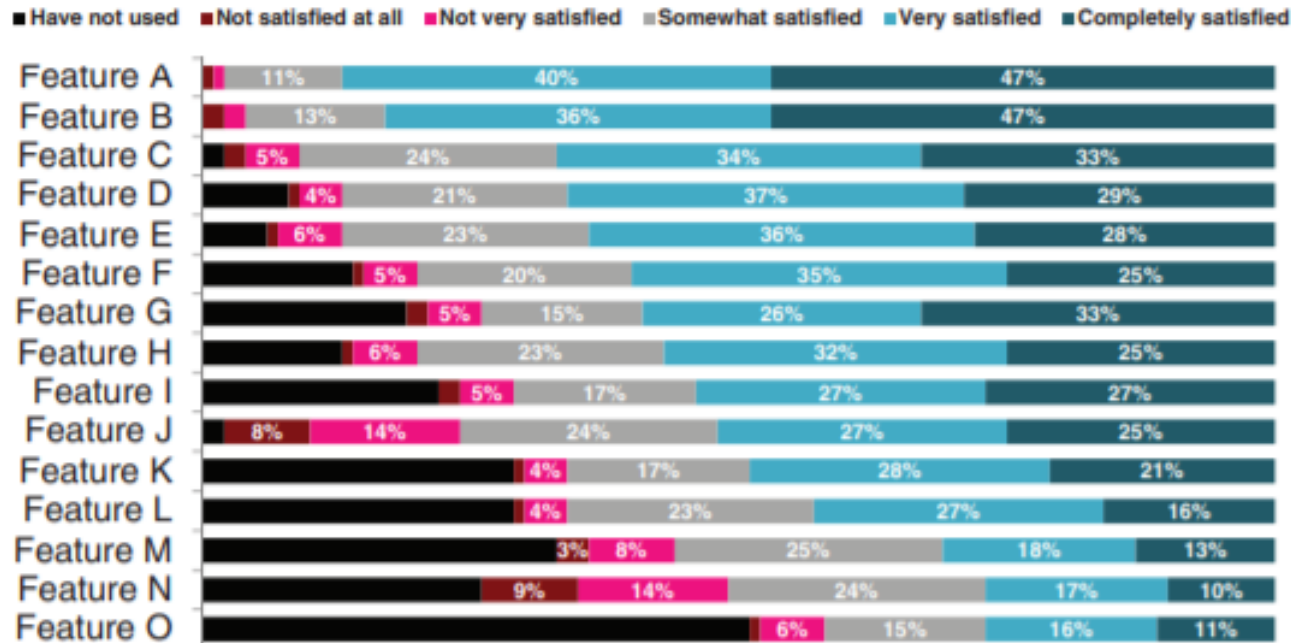
Decluttering and Formatting



Case Study

Net Promoter Score Analysis - Setup/Beginning (1)

How satisfied have you been with each of these features?

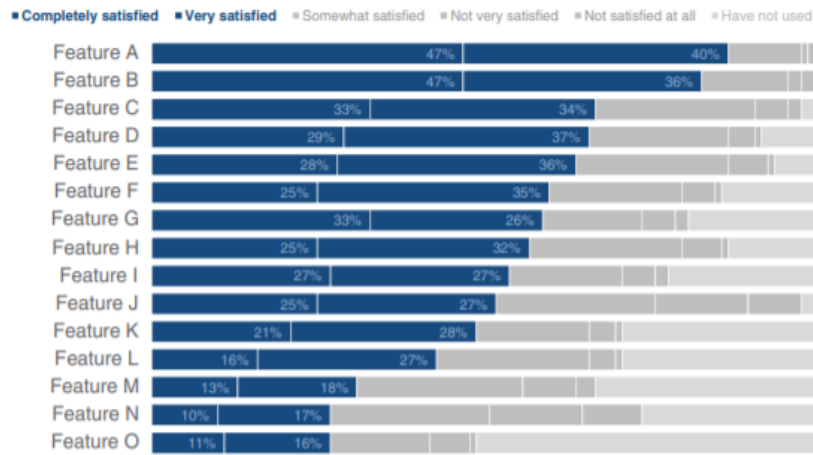


- **Who:** VP of Digital Products, the primary decision maker in prioritising features for app design process
- **What:** Understand the user reviews of various features of the product and prioritize
- **How:** By focusing on different category toppers, we will bring out the areas we are doing well, areas we must improve and areas we failed

Using order to find the story

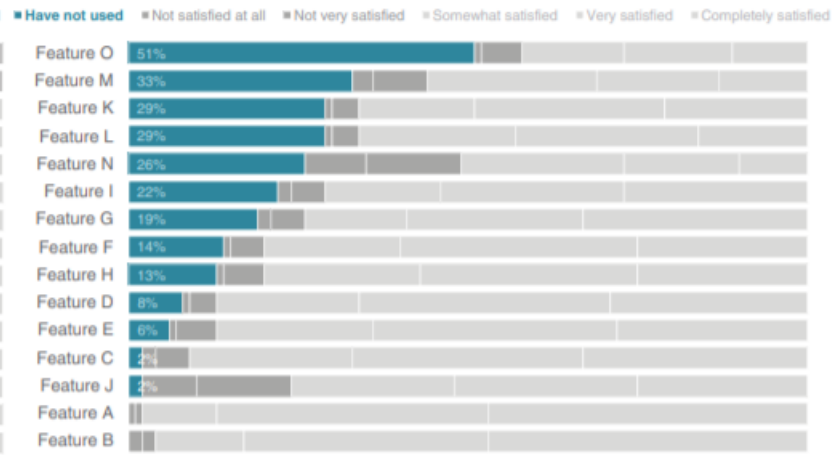
Features A & B top user satisfaction

Product X User Satisfaction: Features



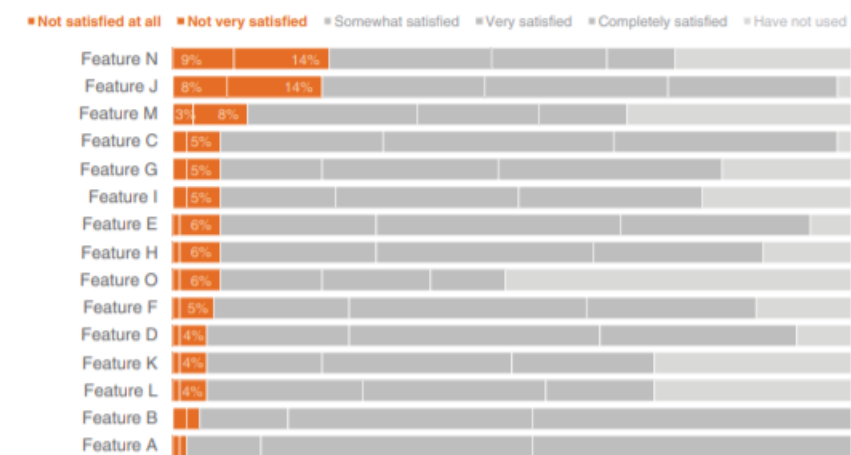
Feature O is least used

Product X User Satisfaction: Features



Users least satisfied with Features N & J

Product X User Satisfaction: Features



1. Features A & B have highest user satisfaction
2. Features N & J have the least user satisfaction
3. Feature O is the least used feature by our users

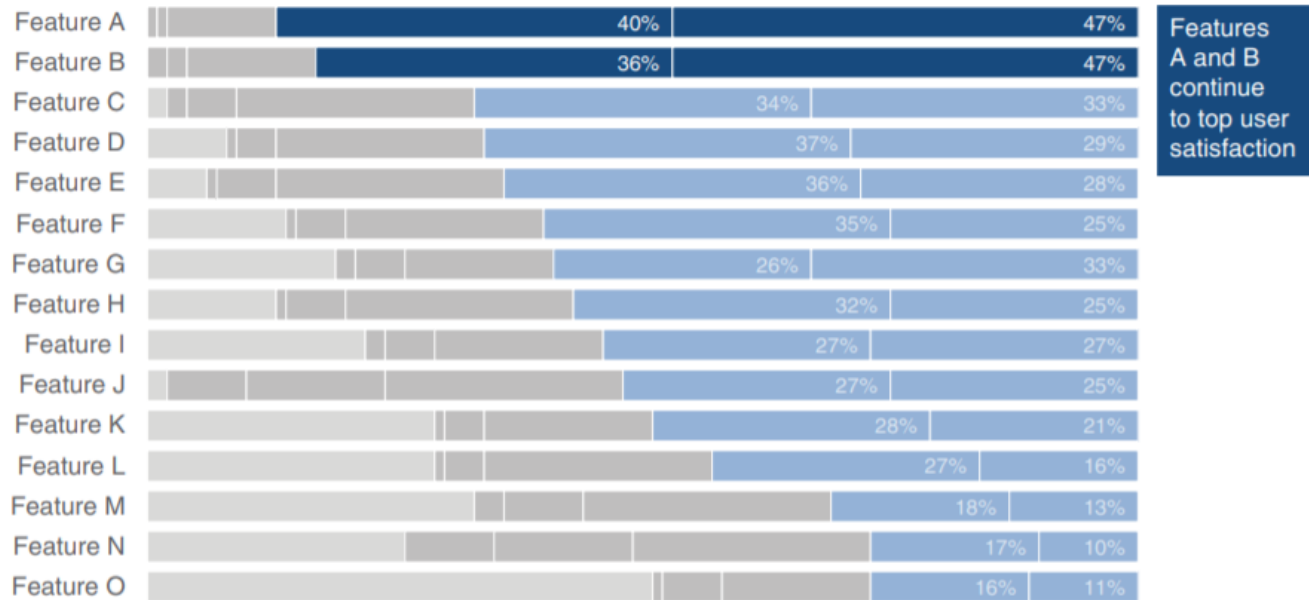
Case Study

Net Promoter Score Analysis- Conflict/Middle (2)

Discovering Satisfaction

Product X User Satisfaction: Features

■ Have not used ■ Not satisfied at all ■ Not very satisfied ■ Somewhat satisfied ■ Very satisfied ■ Completely satisfied



Features A and B continue to top user satisfaction

- Different shades of blue are used to draw attention to proportion of users ordered by satisfaction
- Simple text is used to provide the findings

Responses based on survey question "How satisfied have you been with each of these features?".
Need more details here to help put this data into context: How many people completed survey? What proportion of users does this represent?
Do those who completed survey look like the overall population, demographic-wise? When was the survey conducted?

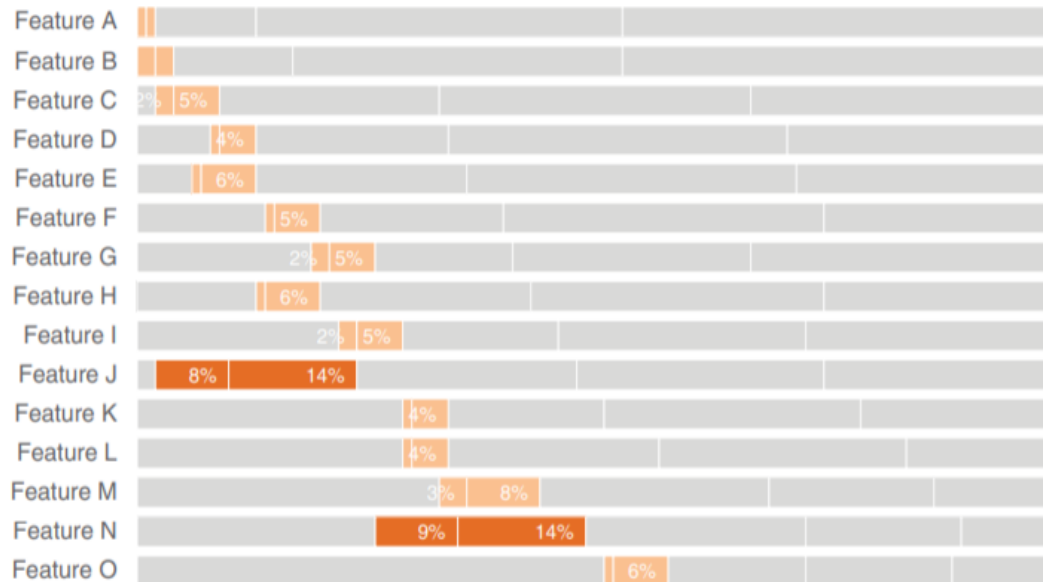
Case Study

Net Promoter Score Analysis- Conflict/Middle (3)

Discovering **Dissatisfaction**

Product X User Satisfaction: **Features**

■ Have not used ■ **Not satisfied at all** ■ **Not very satisfied** ■ Somewhat satisfied ■ Very satisfied ■ Completely satisfied



Users are least satisfied with Features J and N; what improvements can we make here for a better user experience?

- Note how it isn't as easy to see the relative rank ordering of the features highlighted
- But we can still highlight them with colour emphasis

Responses based on survey question "How satisfied have you been with each of these features?".
Need more details here to help put this data into context: How many people completed survey? What proportion of users does this represent?
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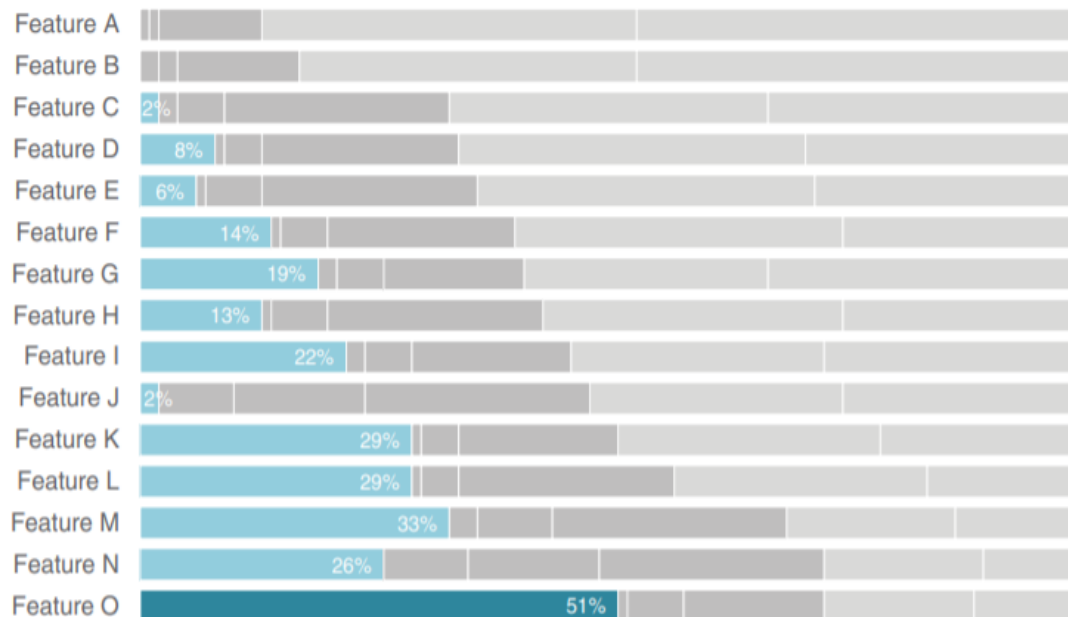
Case Study

Net Promoter Score Analysis- Conflict/Middle (4)

Discovering **Abandoned Usage**

Product X User Satisfaction: **Features**

■ **Have not used** ■ Not satisfied at all ■ Not very satisfied ■ Somewhat satisfied ■ Very satisfied ■ Completely satisfied



Feature O is least used. What steps can we proactively take with existing users to increase utilization?

- It is easier to see the rank ordering because of the alignment to a consistent baseline at the left of the graph

Responses based on survey question "How satisfied have you been with each of these features?".
Need more details here to help put this data into context: How many people completed survey? What proportion of users does this represent?
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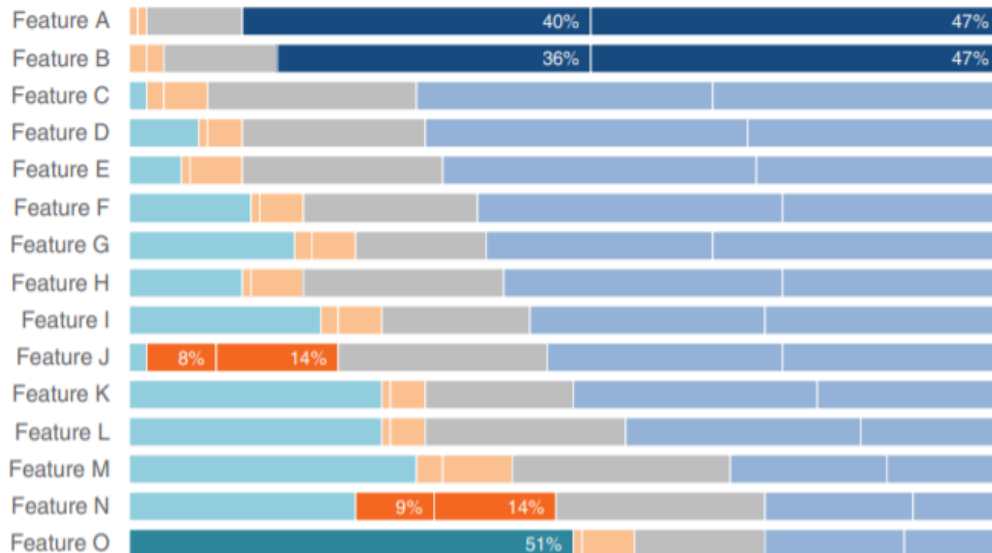
Case Study

Net Promoter Score Analysis- Resolution/End (5)

Putting it all together

Product X User Satisfaction: Features

■ Have not used ■ Not satisfied at all ■ Not very satisfied ■ Somewhat satisfied ■ Very satisfied ■ Completely satisfied



Features A and B continue to top user satisfaction

Users are least satisfied with Features J and N; what improvements can we make here for a better user experience?

Feature O is least used. What steps can we proactively take with existing users to increase utilization?

- Our story finally comes out the way we intended without unnecessary distraction and having a narrative flow
- We will use the above 3 slides for live presentation and we can condense it for circulated reports

Responses based on survey question "How satisfied have you been with each of these features?".
Need more details here to help put this data into context: How many people completed survey? What proportion of users does this represent?
Do those who completed survey look like the overall population, demographic-wise? When was the survey conducted?



Creating a storyboard for Dashboard

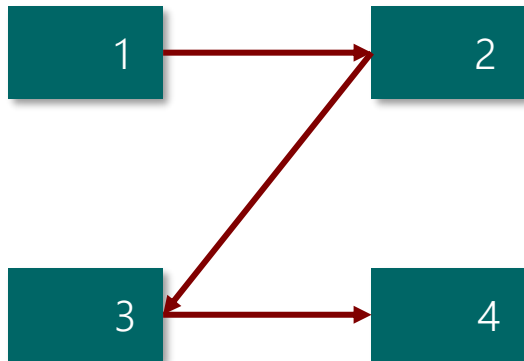
Identifying Metrics and relevant dimensions

- **What Am I Measuring?**
 - Look for themes
 - Start with the report you have
- **Who is it for?**
 - Get end user approvals beforehand
- **When and how are we looking at it?**
 - Determine the dimension groups
 - Determine the timeframe

Designing a dashboard

Elements of story boarding applied in real life

- **Keep Cognitive load to a minimum**
- **Adhere to 'Z' visual track for positioning elements**
- **Keep Consistent colours**



Power BI Best practices

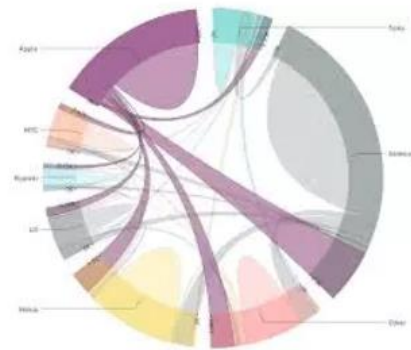
Get the best of Excel and Power Point in Power BI

Things to keep in mind

- Power BI is drag and drop UI, there is no fixed containerisation like Tableau
- Increasing the number of objects on screen increases lag in the DB
- Use some 3rd party visualisations for better performance and customisability



Chiclet Slicer



Chord



Aster Plot

Recap

Thank you for your attention

- The power of a good story
 - Why even bother with a story? (because it is easy to remember)
 - The 3-act structure (beginning, middle, end)
 - How can I make my story interesting (thinking about the so what?)
 - Create a compelling narrative(know your audience)
 - Other tips to make a story
- Your most powerful weapon – Data Visuals
 - Types of visuals
 - Clutter is your enemy (thinking about cognitive load)
 - Direct their focus and grab attention (pre attentive attributes)
- Case study
 - Creating a storyboard
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 - Power BI best practices