

▷ October 9th 2024

⌚ 14:50 – 15:50

# Beautiful and Smart: A User-Centric Approach to Data Visualization.



Maria  
Lys

Introduction

User 

Smart

Beautiful

Conclusion



# Maria Lys

Data Viz | Power BI | Microsoft Certified | PhD



**BE BRAVE  
LIKE UKRAINE**



Sopra Steria



# Agenda

- 1. User centered approach**
- 2. Smart (Chart Types)**
- 3. Beautiful (Visual Design)**



## 1. User centered approach



## Data centered

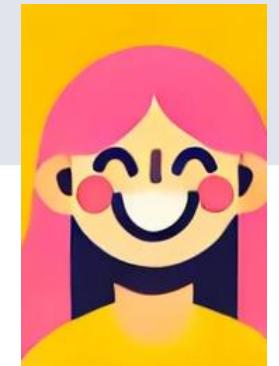
“We can pull requirements straight from the **code**, skip involving users”



“No time for new user requirements, migrate **as-is**”



“Let’s first build and show **users later**.”





## Data centered

"We can pull requirements straight from the **code**, skip involving users"



"No time for user requirements, migrate **as-is**"

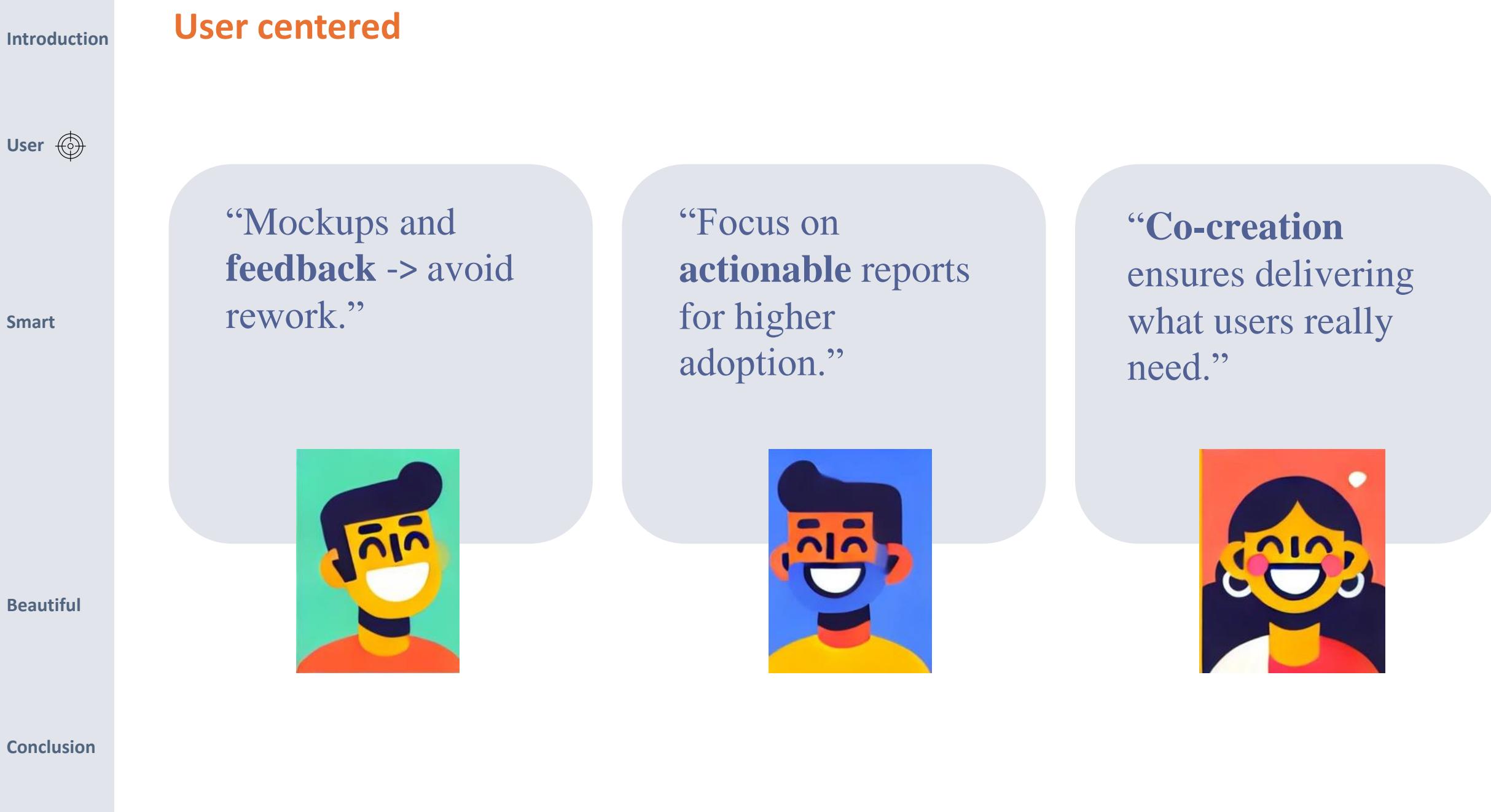


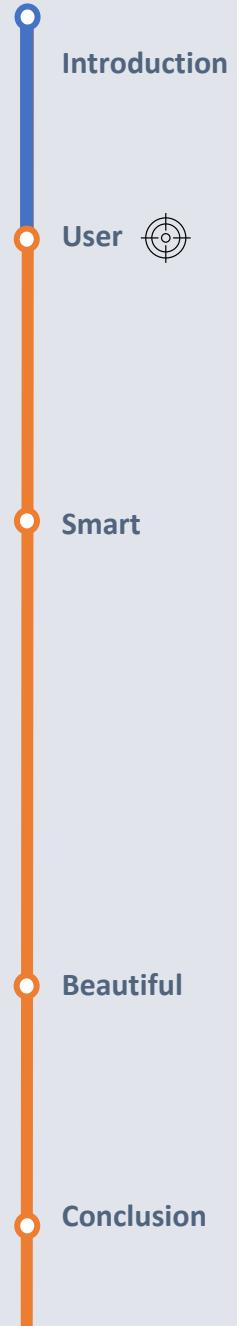
"Let's first build and show users later."



## Outcome:

- 1. Export to Excel** - users don't actually use the report.
- 2. Redo the report**, validation takes longer than development.



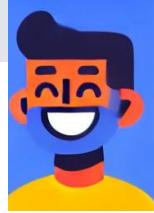


## User centered

“Mock-ups and **feedback** avoid rework.”



“Focus on **actionable** reports for higher adoption.”



“**Co-creation** ensures delivering what users really need.”



## Outcome:

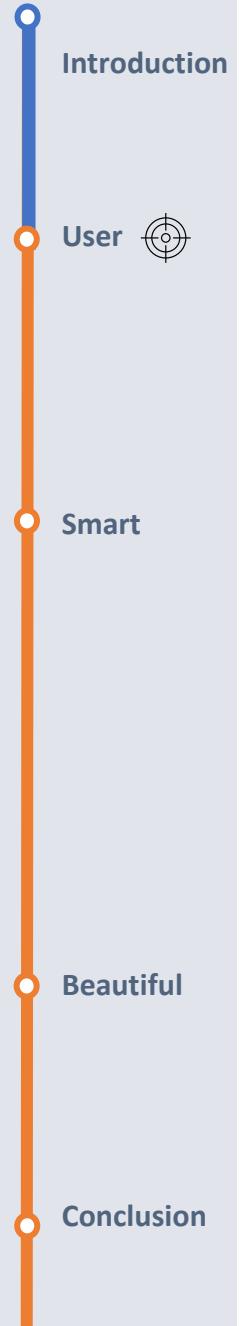
1. "We **use** the report in meetings."
2. "We **know** where the data comes from, how the calculations are made."
3. "It **saves us time**."



## Passionate about the user-centered approach

I still make data-centered mistakes.

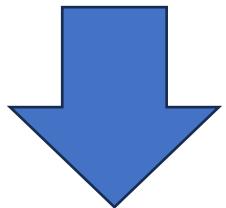
Story.



# Design sprint.

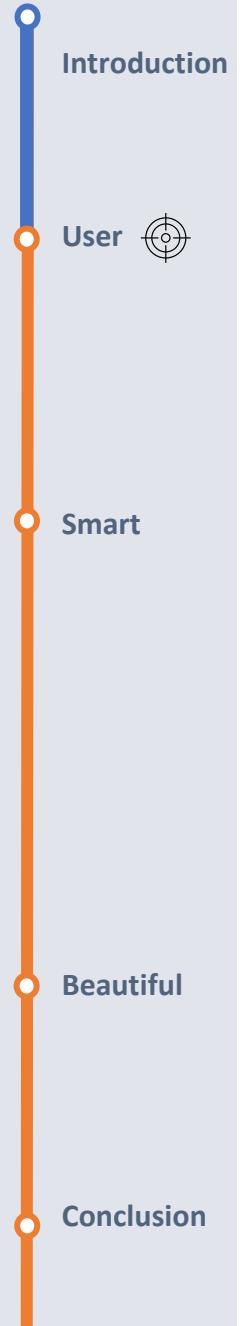
Start the BI project with 2 weeks of workshops and feedback sessions:

- 10 user meetings (30 minutes each) over two weeks to gather feedback.
- 3 meetings with colleagues.



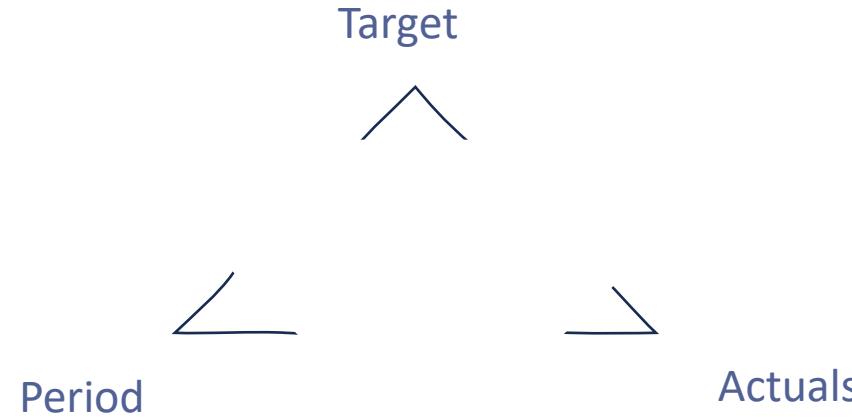
Create a clear **plan** for the next development phase.



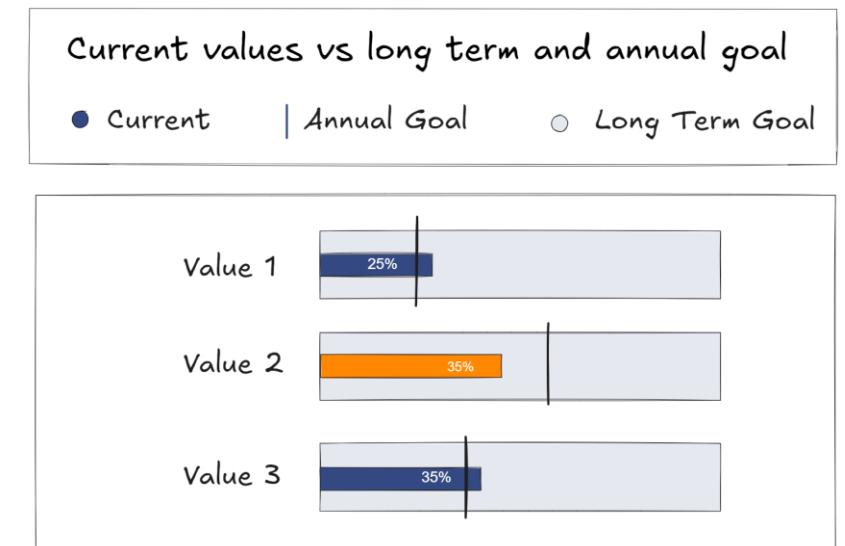


## Workshop #4 :

### “We need to report that we have achieved the **target**”

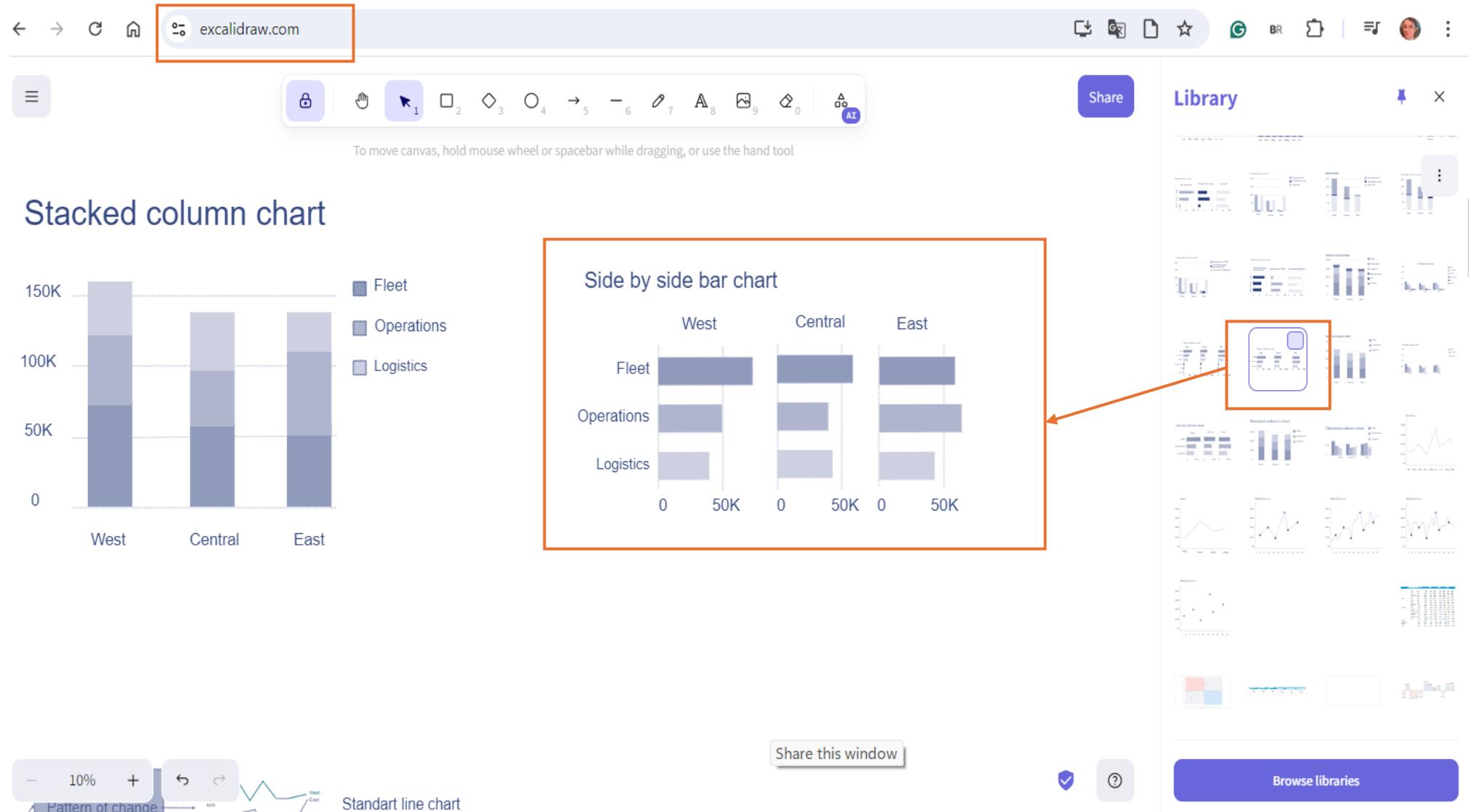


Bullet chart



# Excalidraw.com

- Introduction
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- Smart
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- Conclusion



# Workshop #5

Introduction

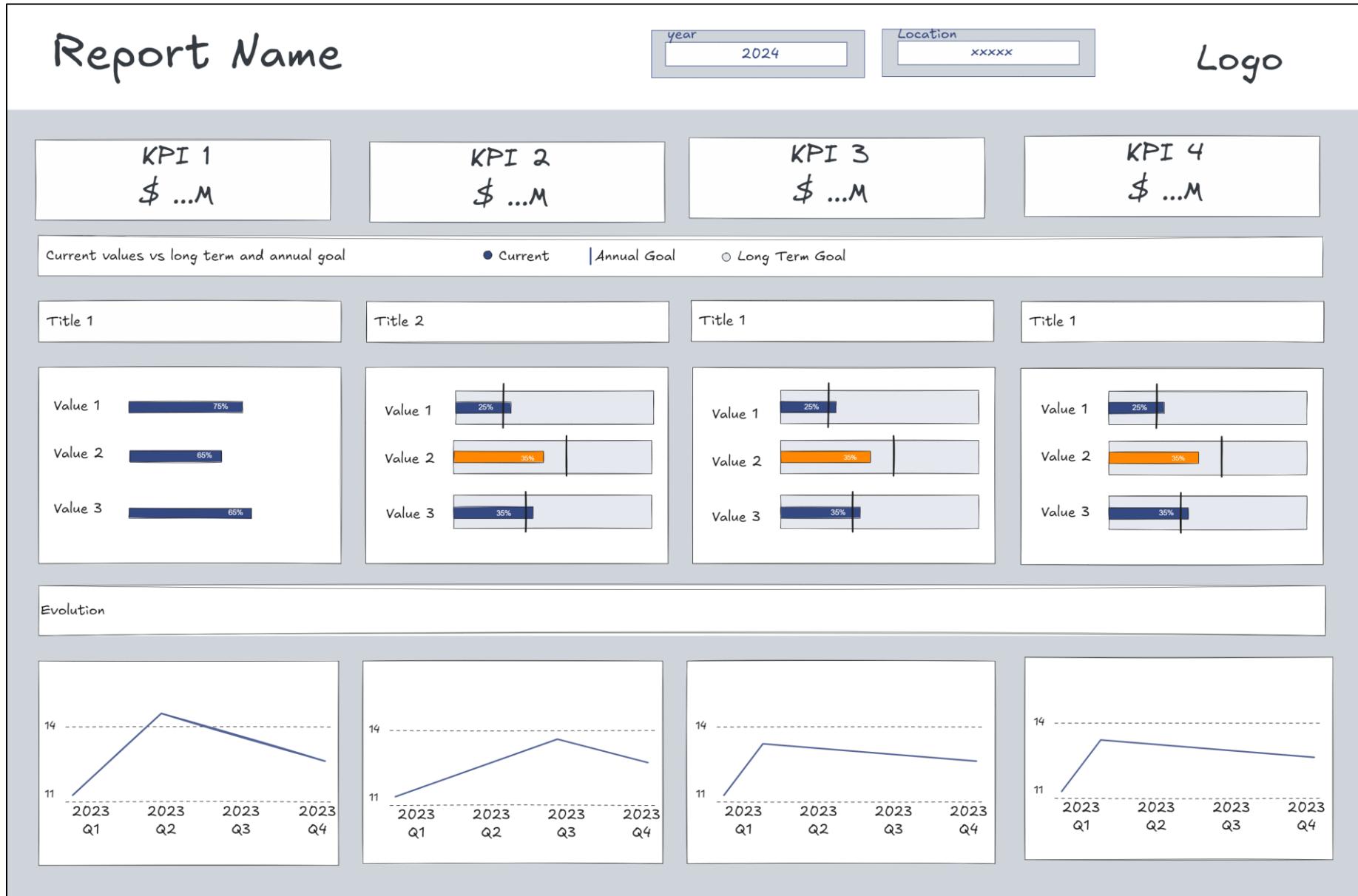
User



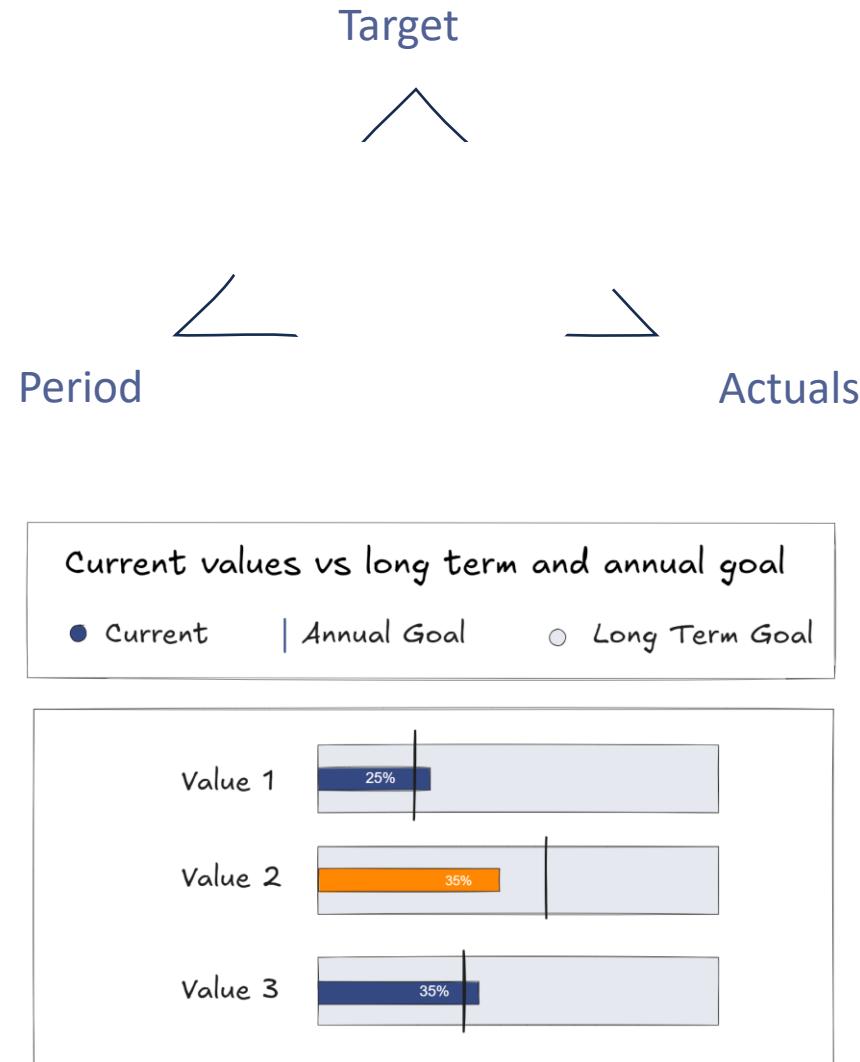
Smart

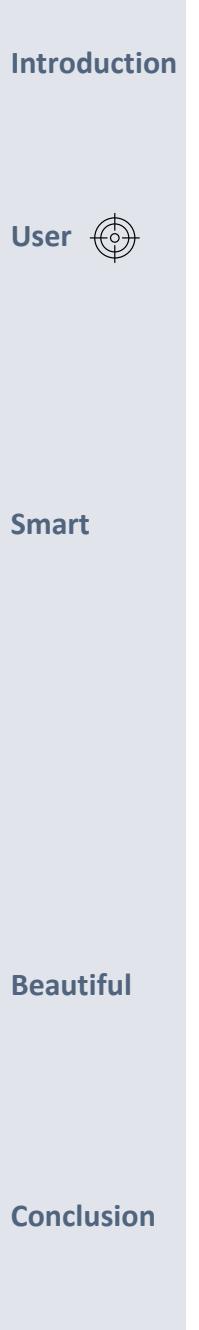
Beautiful

Conclusion



# Data centered Design

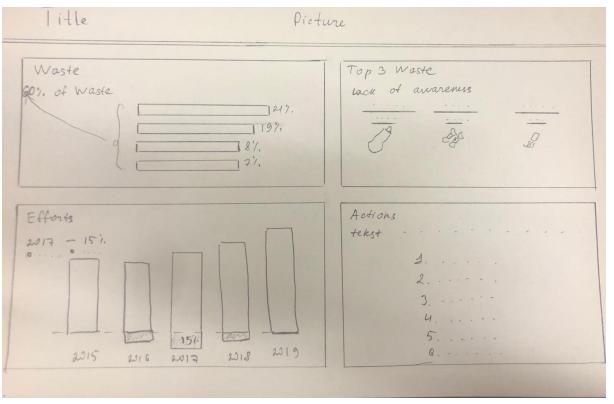




# Mock-ups stimulate the discussion

Cleanup ID	Zone	State	Country	GPS	Cleanup Type	Cleanup Date
1	86 Cuyahoga County, OH, USA	Ohio, USA	United States	41.49742,-81.56505	Land (beach, shoreline and inland)	3/23/2014
1	87 Prince George's County, MD, USA	Virginia, USA	United States	38.96733,-77.04423	Land (beach, shoreline and inland)	3/23/2014
1	92 Washington, DC, USA	District of Columbia, USA	United States	38.96733,-77.04409	Land (beach, shoreline and inland)	3/19/2015
5	93 Washington, DC, USA	District of Columbia, USA	United States	38.96733,-77.0441	Land (beach, shoreline and inland)	3/19/2015
5	94 Washington, DC, USA	District of Columbia, USA	United States	38.96733,-77.0441	Land (beach, shoreline and inland)	3/19/2015
5	123 Washington, DC, USA	District of Columbia, USA	United States	38.96733,-77.04411	Land (beach, shoreline and inland)	3/19/2015
5	115 Washington, DC, USA	District of Columbia, USA	United States	38.96733,-77.04423	Land (beach, shoreline and inland)	3/19/2015
5	117 Washington, DC, USA	District of Columbia, USA	United States	38.96733,-77.04423	Land (beach, shoreline and inland)	3/19/2015
1	121 Washington, DC, USA	District of Columbia, USA	United States	38.96733,-77.0443	Land (beach, shoreline and inland)	3/19/2015
1	122 Washington, DC, USA	District of Columbia, USA	United States	38.96733,-77.04393	Land (beach, shoreline and inland)	3/24/2015
2	123 Washington, DC, USA	District of Columbia, USA	United States	38.96733,-77.04396	Land (beach, shoreline and inland)	3/24/2015
3	125 Pinellas County, FL, USA	Florida, USA	United States	27.77002,-82.55668	Land (beach, shoreline and inland)	3/25/2015
3	126 Pinellas County, FL, USA	Florida, USA	United States	27.77002,-82.55668	Land (beach, shoreline and inland)	3/25/2015
5	129 Hillsborough County, FL, USA	Florida, USA	United States	27.979,-82.53612	Land (beach, shoreline and inland)	3/26/2015
6	130 Henry County, GA, USA	Georgia, USA	United States	33.45957,-84.84034	Land (beach, shoreline and inland)	3/26/2015
1	131 Hillsborough County, FL, USA	Florida, USA	United States	27.979,-82.53612	Land (beach, shoreline and inland)	3/26/2015
8	132 Hillsborough County, FL, USA	Florida, USA	United States	27.979,-82.53612	Land (beach, shoreline and inland)	3/26/2015
9	136 Dekalb County, GA, USA	Georgia, USA	United States	33.7703,-84.25656	Land (beach, shoreline and inland)	3/26/2015
0	137 Hillsborough County, FL, USA	Florida, USA	United States	27.979,-82.53612	Land (beach, shoreline and inland)	3/26/2015
2	138 Hillsborough County, GA, USA	Georgia, USA	United States	33.7703,-84.25656	Land (beach, shoreline and inland)	3/26/2015
2	139 Hillsborough County, FL, USA	Florida, USA	United States	27.979,-82.53612	Land (beach, shoreline and inland)	3/26/2015
3	141 Hillsborough County, FL, USA	Florida, USA	United States	27.979,-82.53612	Land (beach, shoreline and inland)	3/26/2015
3	152 Hillsborough County, GA, USA	Georgia, USA	United States	33.7703,-84.25656	Land (beach, shoreline and inland)	3/26/2015
3	155 Washington, DC, USA	District of Columbia, USA	United States	38.96733,-77.04491	Land (beach, shoreline and inland)	4/10/2015
6	156 Washington, DC, USA	District of Columbia, USA	United States	38.96733,-77.04406	Land (beach, shoreline and inland)	4/10/2015
7	157 Washington, DC, USA	District of Columbia, USA	United States	38.96744,-77.04929	Land (beach, shoreline and inland)	4/10/2015
7	158 Washington, DC, USA	District of Columbia, USA	United States	38.96744,-77.04929	Land (beach, shoreline and inland)	4/10/2015
9	159 Washington, DC, USA	District of Columbia, USA	United States	38.96747,-77.04409	Land (beach, shoreline and inland)	4/10/2015
0	160 Washington, DC, USA	District of Columbia, USA	United States	38.96747,-77.04406	Land (beach, shoreline and inland)	4/10/2015
2	161 Washington, DC, USA	District of Columbia, USA	United States	38.96747,-77.04406	Land (beach, shoreline and inland)	4/29/2015
2	167 Rutherford County, TN, USA	Tennessee, USA	United States	39.91377,-85.29188	Land (beach, shoreline and inland)	4/29/2015
2	168 Washington, DC, USA	District of Columbia, USA	United States	38.95237,-77.00173	Land (beach, shoreline and inland)	4/29/2015

Design Definition

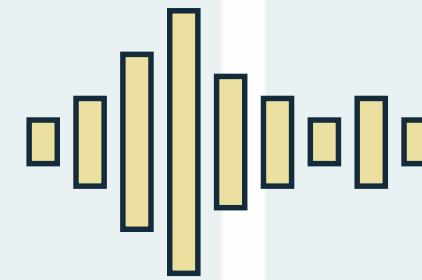


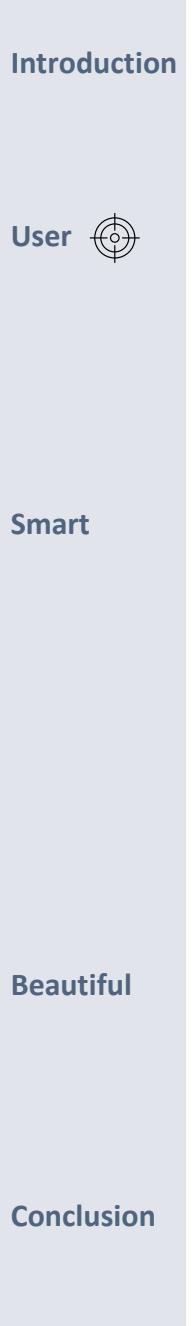
Iteration Sessions





## Understand





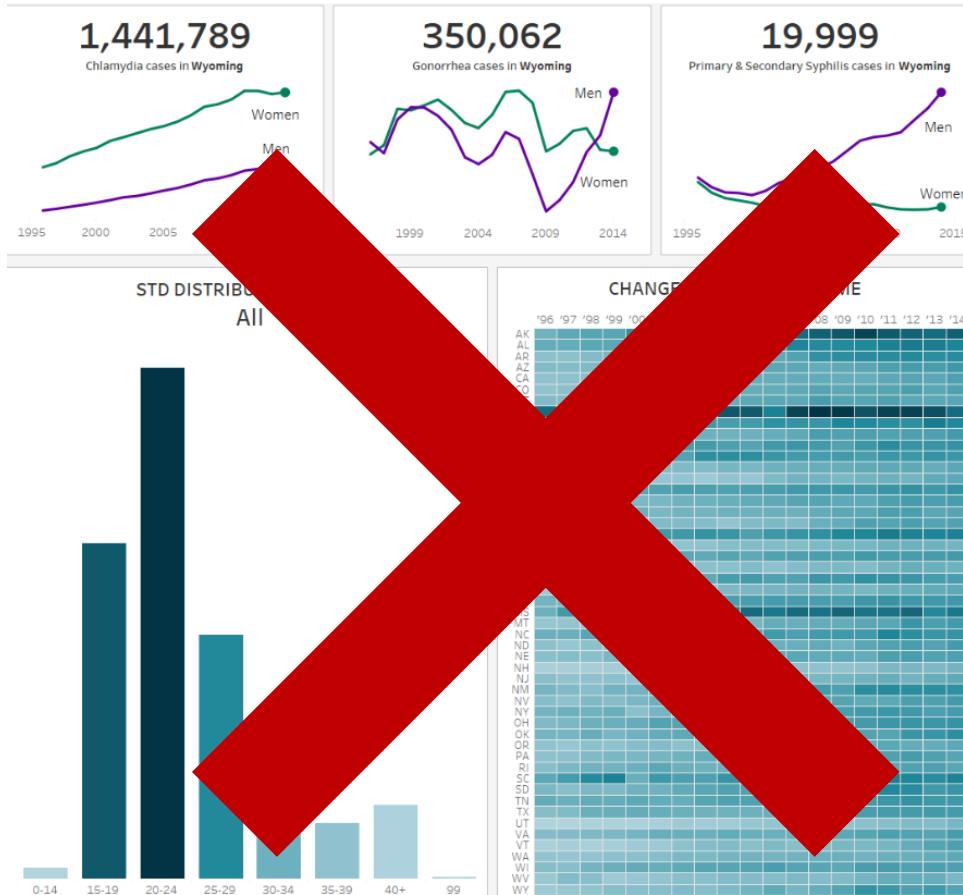
Steve Jobs:  
“Never ask users what they want.”



- Introduction
- User 
- Smart
- Beautiful
- Conclusion

Imagine if I started the first draft of development in

# Power BI



## Possible outcome:

- "The project is done, thank you, it looks good." (But users export to Excel)
- "This is not what we wanted; you need to redo everything."

- Introduction
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**“Don’t touch the tool before you  
have approved mockup.**

**Don’t touch the tool.  
First Mockups!”**



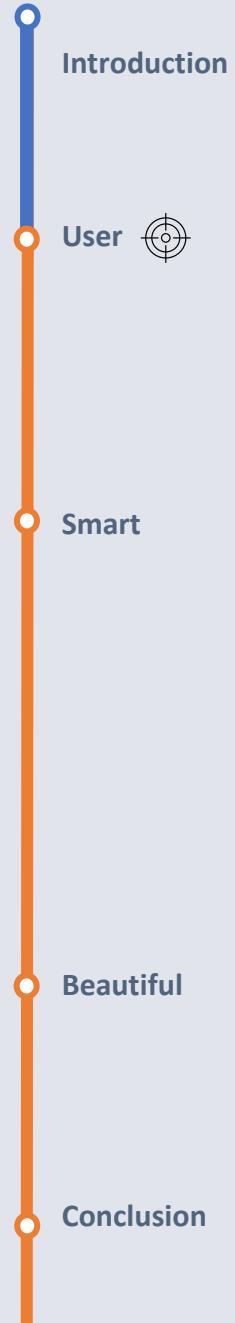
10 meetings with key users

+ 3 meetings with a colleague

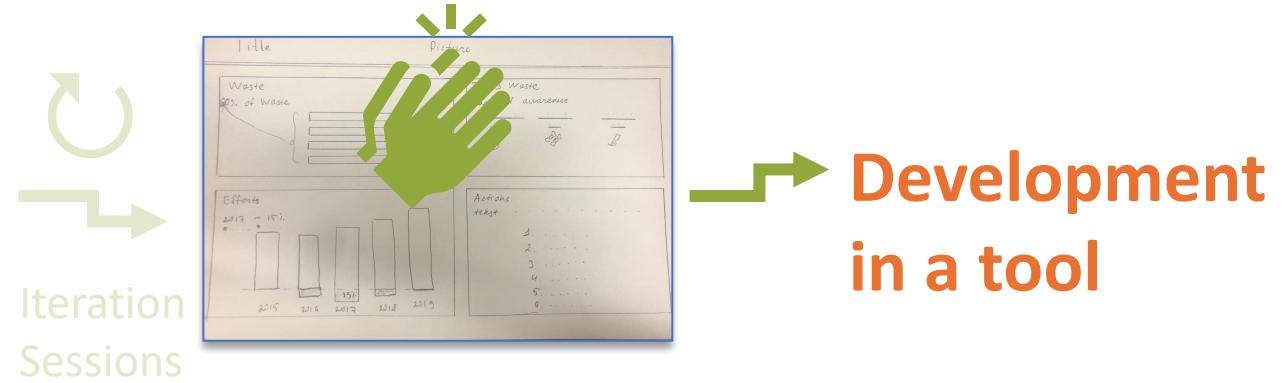
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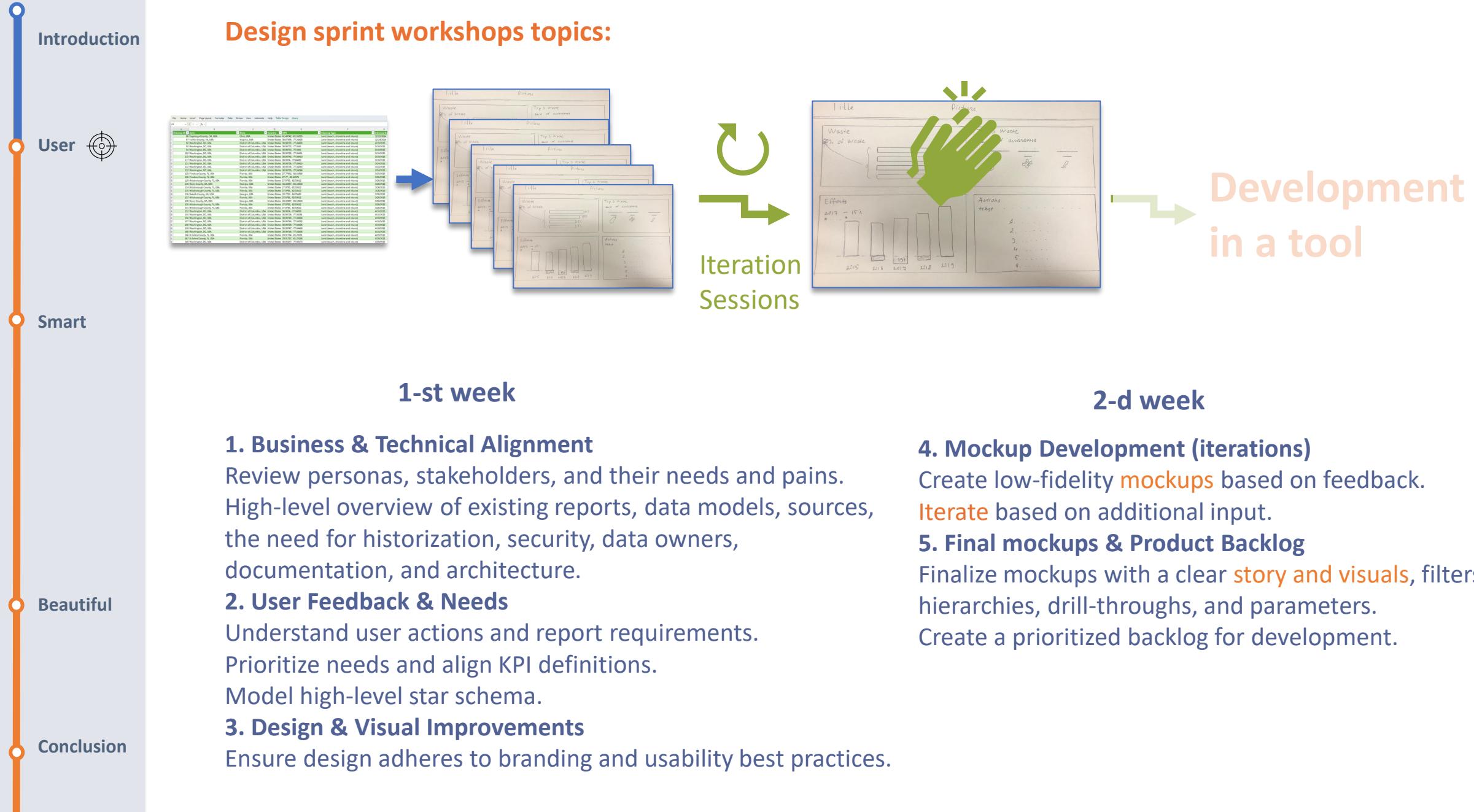






It's better to stimulate the right discussion with a wrong mockup than to redo your report in Power BI or Tableau







## Design sprint topics checklist





**First, design sprint,  
then development  
in a tool**

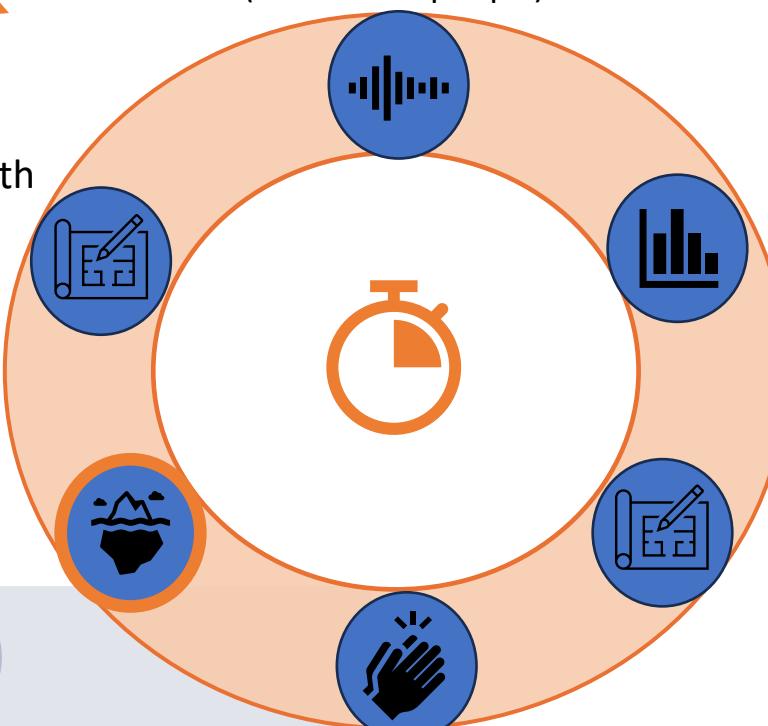
2.  
Stimulate discussions with  
mockups  
(#4 workshop topic)

1.  
Understand the business  
(#1, 2, 3 workshop topics)

3.  
Verbalize the user story  
(#4 workshop topic)

4.  
Choose the right charts  
to tell the user story  
(#4 workshop topic)

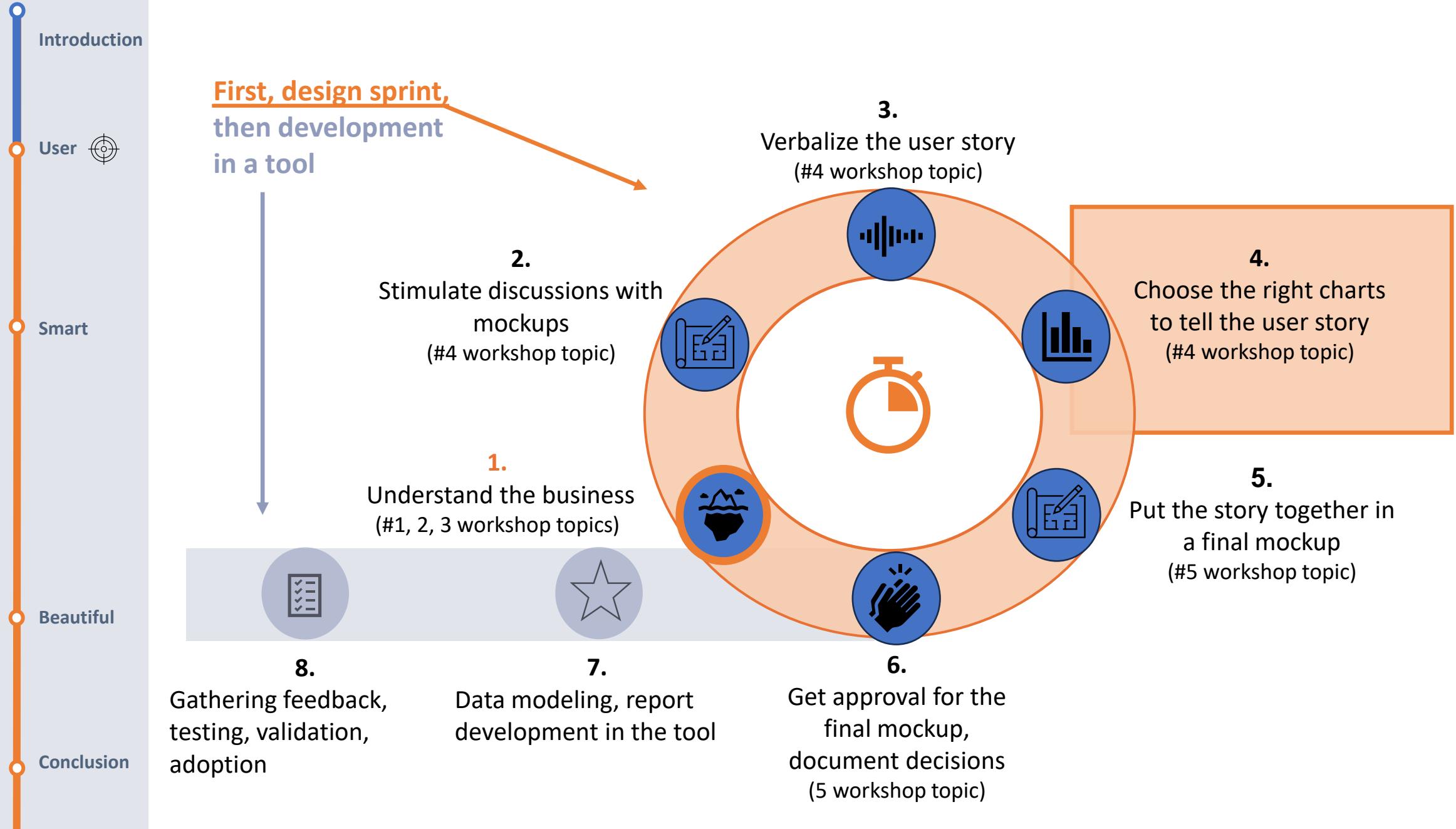
5.  
Put the story together in  
a final mockup  
(#5 workshop topic)

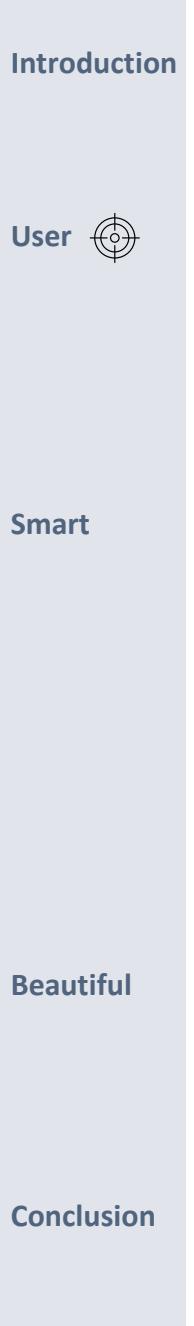


8.  
Gathering feedback,  
testing, validation,  
adoption

7.  
Data modeling, report  
development in the tool

6.  
Get approval for the  
final mockup,  
document decisions  
(5 workshop topic)





## 2. Chart Types (Smart)

Introduction

User 

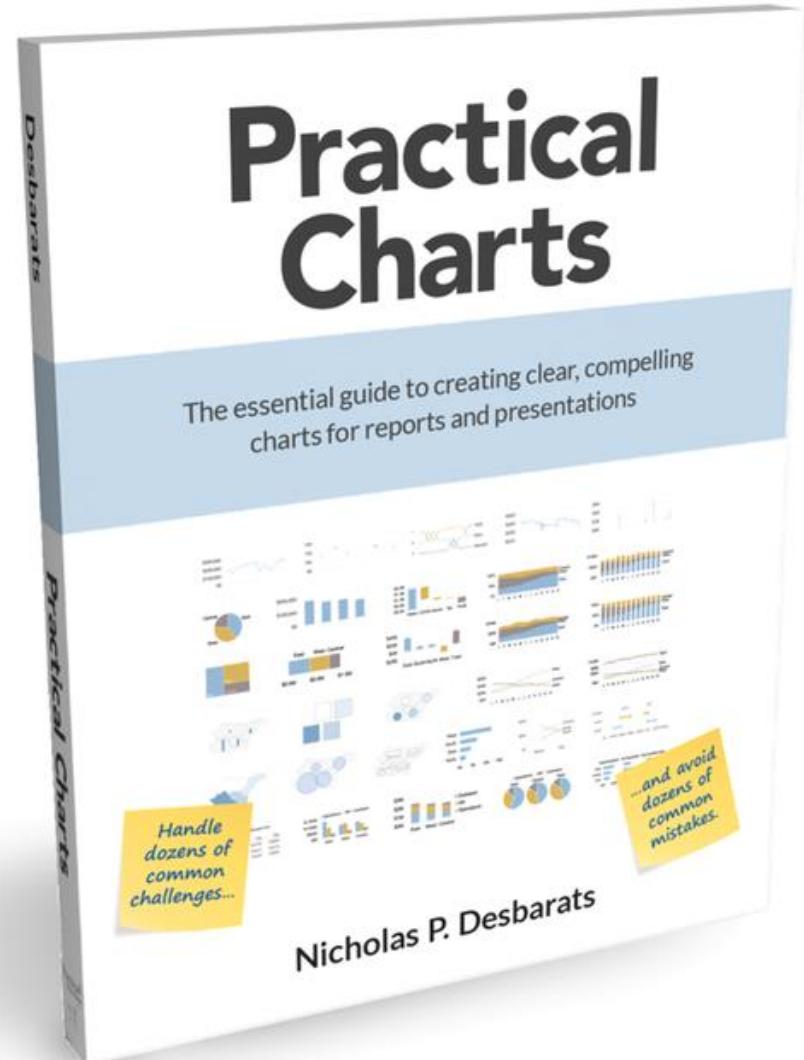
Smart

Beautiful

Conclusion

# Nicholas P. Desbarates:

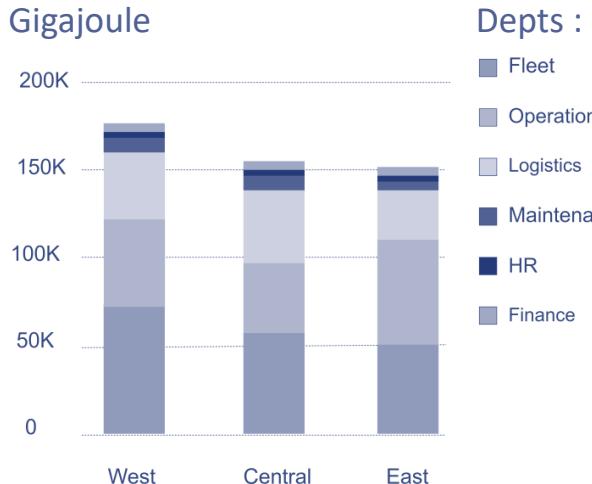
“ The most effective design choice depends on the specific **job** that chart designed to do, i.e. the specific **insight or answer** that needs **to be communicated** about the data.”



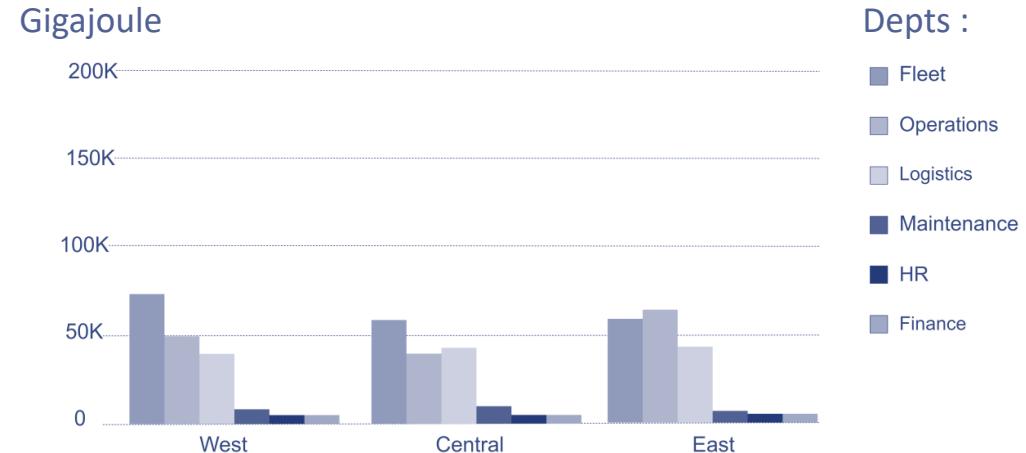
Breakdown of several totals

Choose the right visual for the given title:

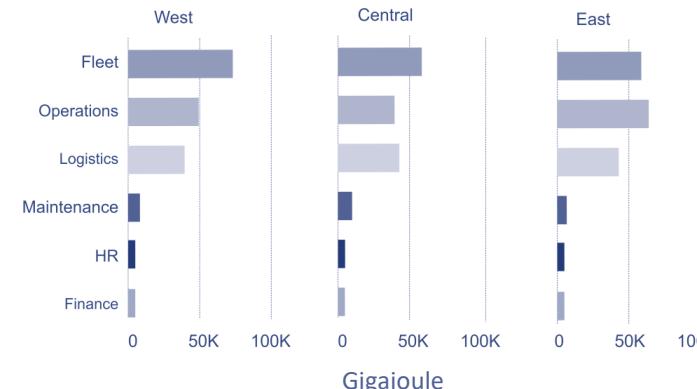
A  
Comparison of Departmental Contributions to Emissions Across Regions



B  
Comparison of Departmental Contributions to Emissions Across Regions



C  
Comparison of Departmental Contributions to Emissions Across Regions



Nicholas P. Desbarates

Breakdown of several totals

Choose the right visual for the given title:

**Insight:** “Operations in the East emits more than the Fleet in the Central.”

Introduction

User

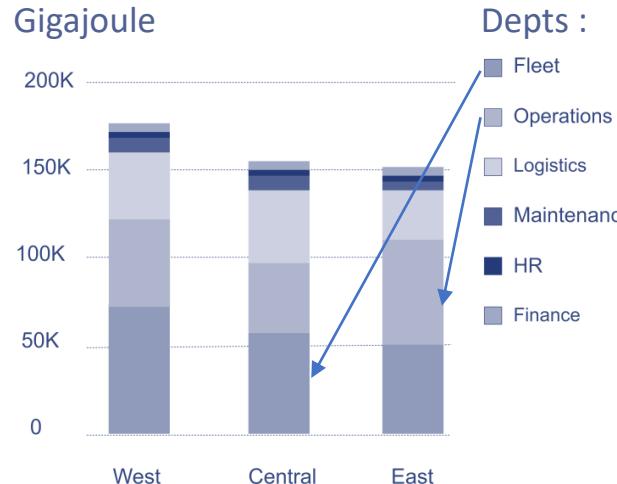
Smart

Beautiful

Conclusion

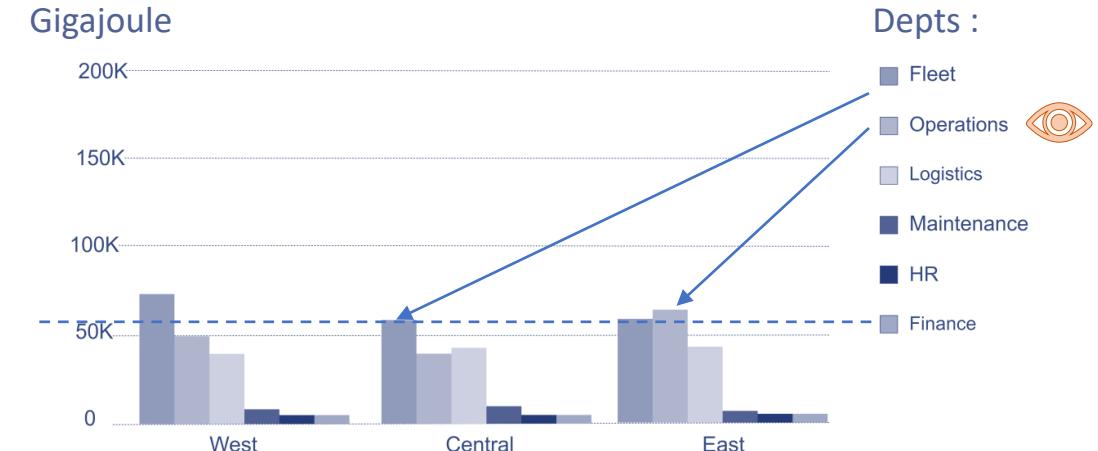
A

### Comparison of Departmental Contributions to Emissions Across Regions



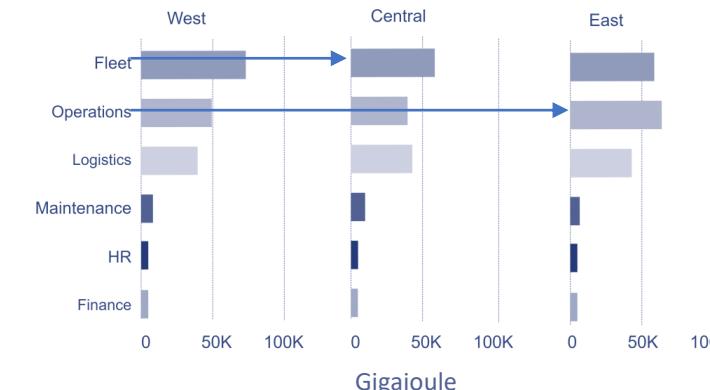
B

### Comparison of Departmental Contributions to Emissions Across Regions



C

### Comparison of Departmental Contributions to Emissions Across Regions



Nicholas P. Desbarates

Introduction

Breakdown of several totals

A clustered column chart is the best choice if you need to compare parts of a total precisely

User



YES

B

## Comparison of Departmental Contributions to Emissions Across Regions

Gigajoule

200K

150K

100K

50K

0

West

Central

East

Depts :

- Fleet
- Operations
- Logistics
- Maintenance
- HR
- Finance



Conclusion

Nicholas P. Desbarates

Introduction

A clustered column chart is the best choice if you need to compare parts of a total precisely

Hint: Include insights in a subtitle.

User



Smart

Beautiful

Conclusion

YES

B

## Comparison of Departmental Contributions to Emissions Across Regions

Operations in the East emits more than the Fleet in the Central.

Gigajoule

200K

150K

100K

50K

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West

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East

Depts :

- Fleet
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- HR
- Finance

## Breakdown of several totals

# Why won't another chart work?

- Introduction
- User 
- Smart
- Beautiful
- Conclusion

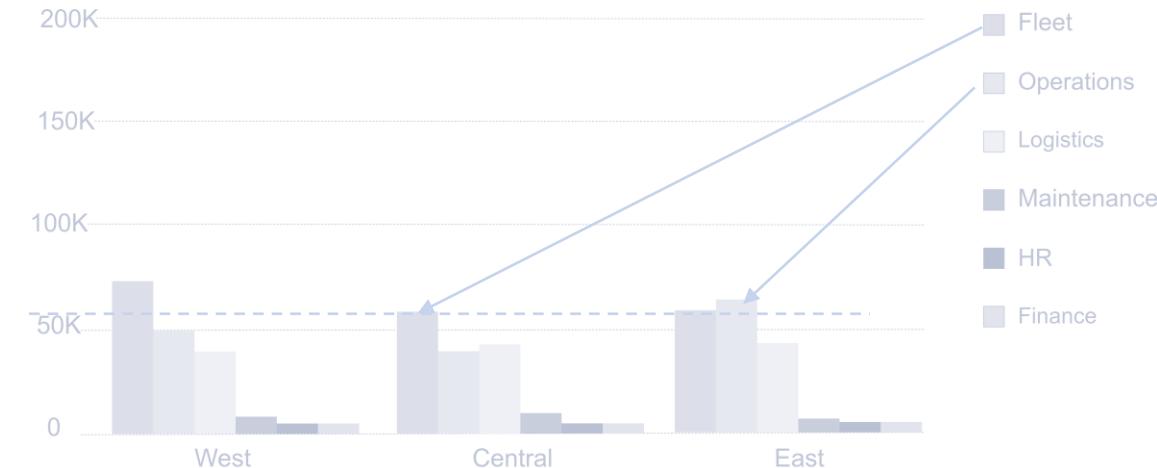
A

Stacked column chart



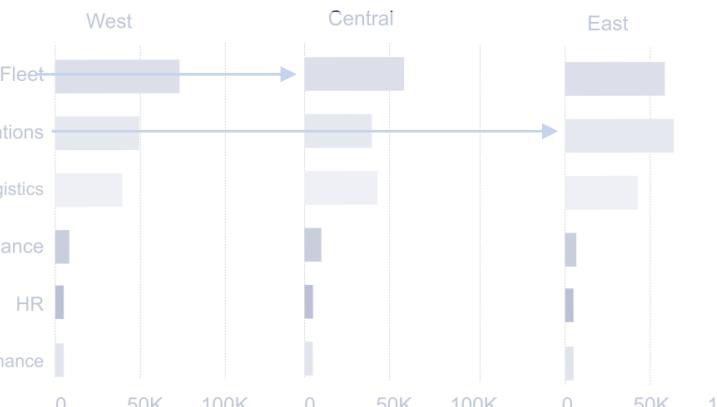
B

Clustered column chart



C

Side by side bar chart



## Breakdown of several totals

# Why won't another chart work?

Introduction

User 

Smart

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Conclusion

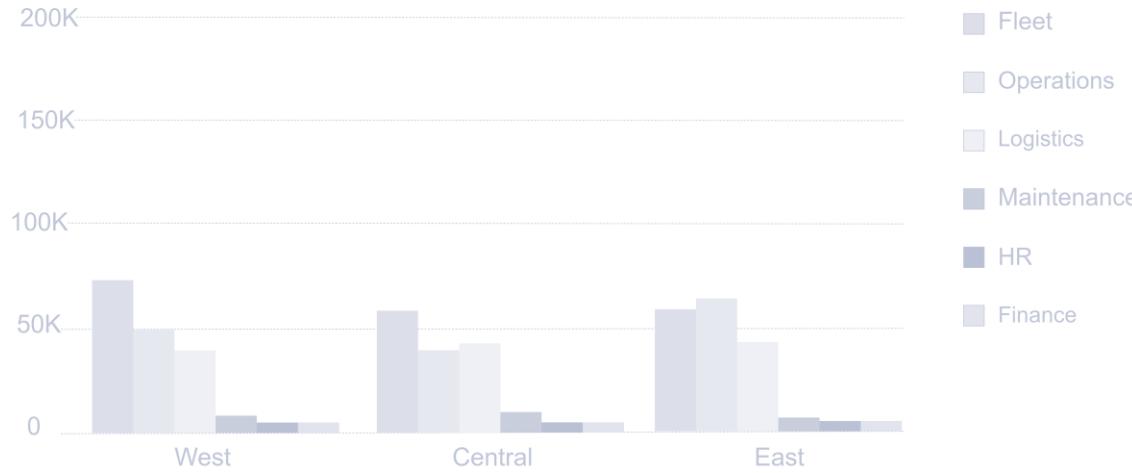
A

Stacked column chart



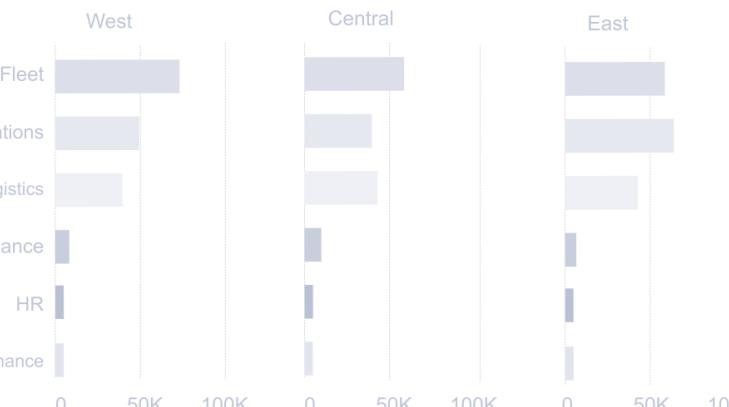
B

Clustered column chart



C

Side by side bar chart



## Breakdown of several totals

# Why won't another chart work?



Stacked column chart



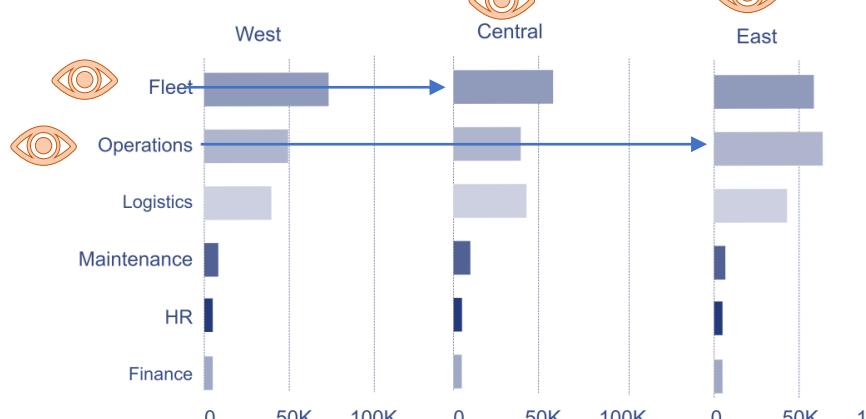
A

Clustered column chart



B

Side by side bar chart



C

## Breakdown of several totals

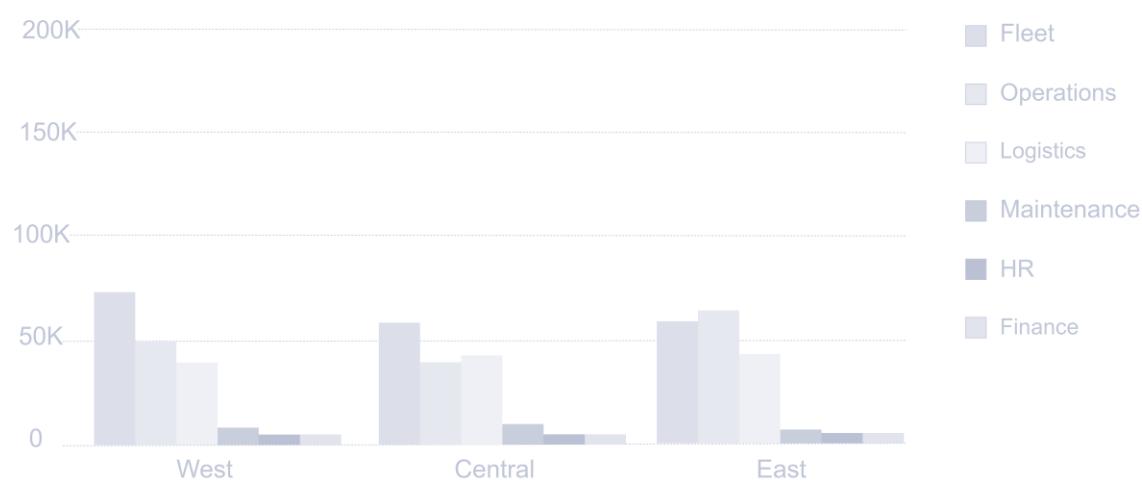
# Why won't another chart work?

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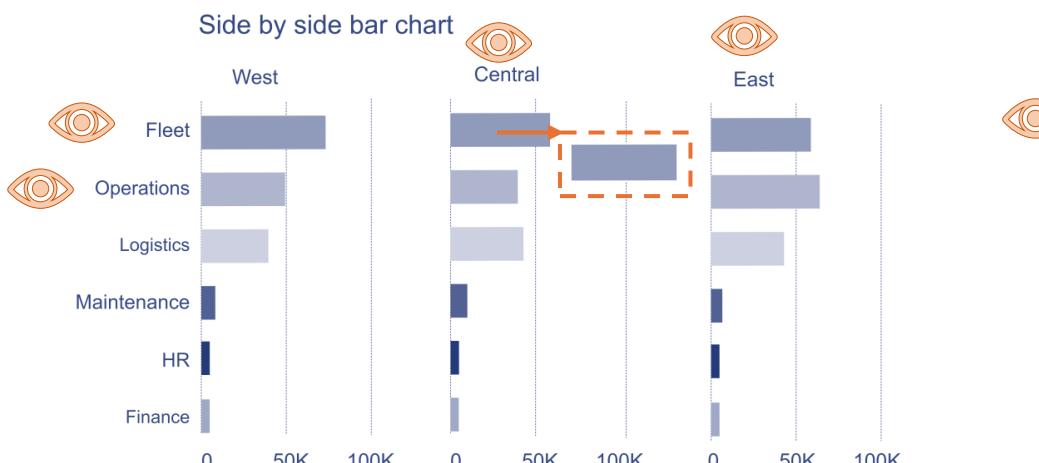
Stacked column chart



Clustered column chart



Side by side bar chart



Nicholas P. Desbarates

## Breakdown of several totals

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Stacked column chart



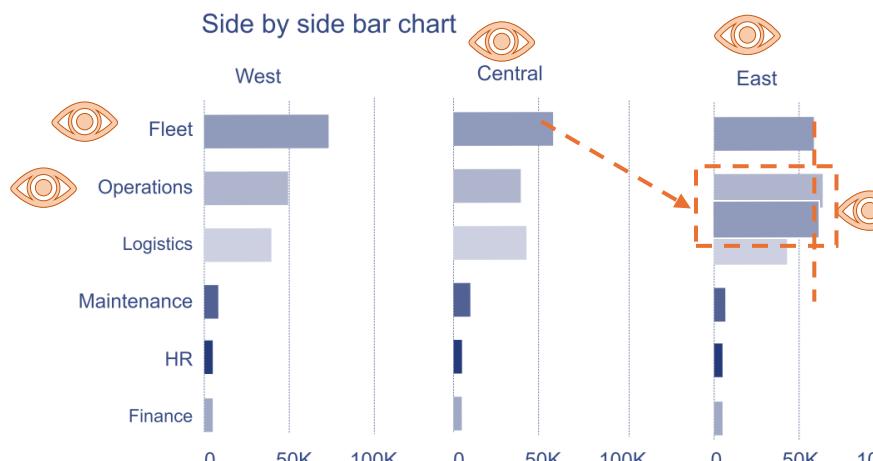
A

Clustered column chart



B

Side by side bar chart



C

Breakdown of several totals

A clustered column chart is the best choice if you need to compare parts of a total precisely

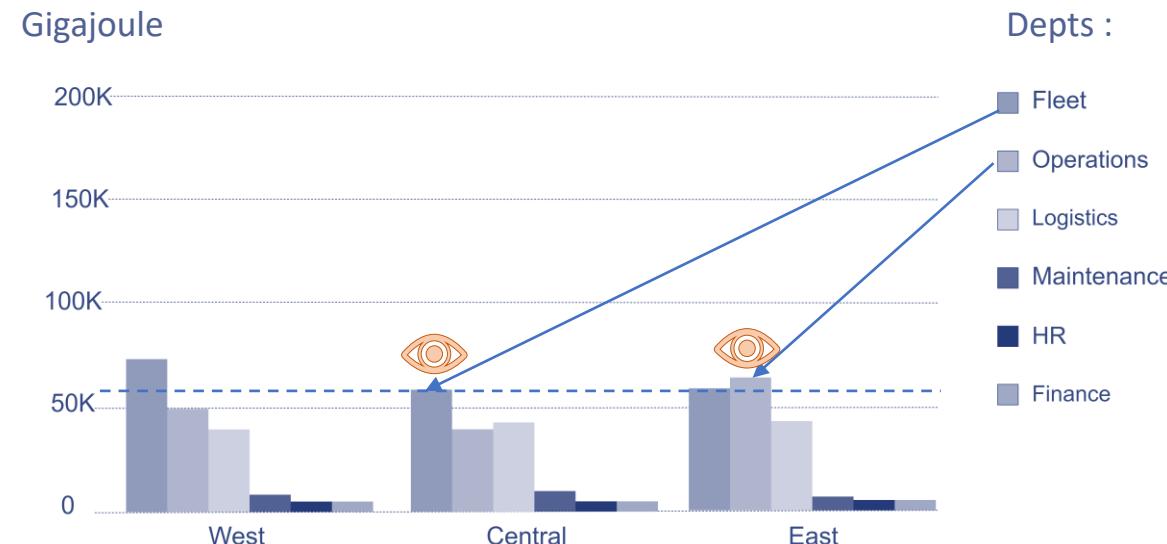
Hint: Include insights in a subtitle.

- Introduction
- User 
- Smart
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YES      B

## Comparison of Departmental Contributions to Emissions Across Regions

Operations in the East emits more than the Fleet in the Central.



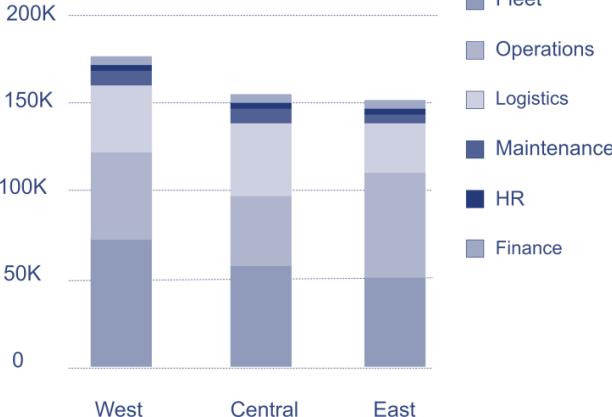
Breakdown of several totals

Choose the right visual for the given title:

A

Total Emissions Breakdown by Region

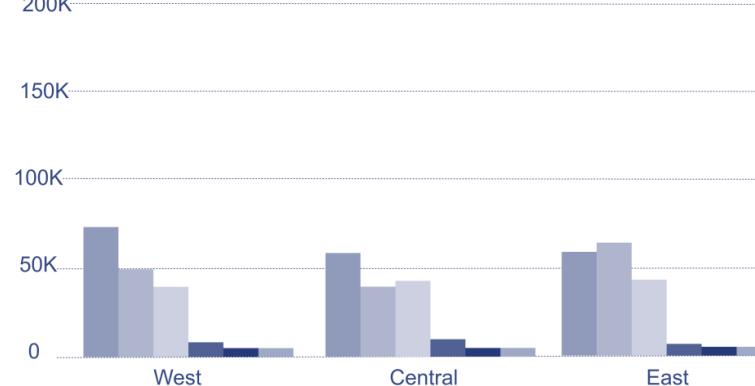
Gigajoule



B

Total Emissions Breakdown by Region

Gigajoule

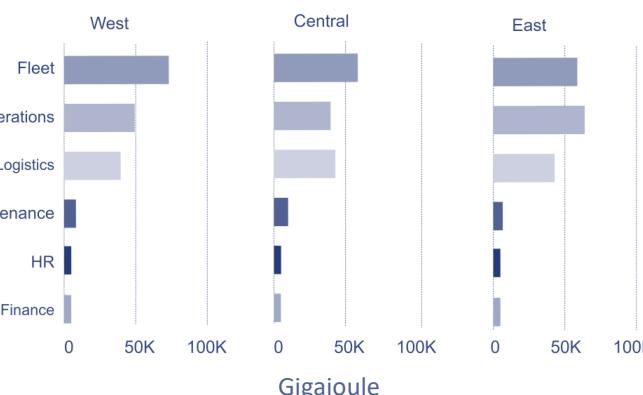


Depts :

- Fleet
- Operations
- Logistics
- Maintenance
- HR
- Finance

C

Total Emissions Breakdown by Region



Nicholas P. Desbarates

Breakdown of several totals

Choose the right visual for the given title

Introduction

User

Smart

Beautiful

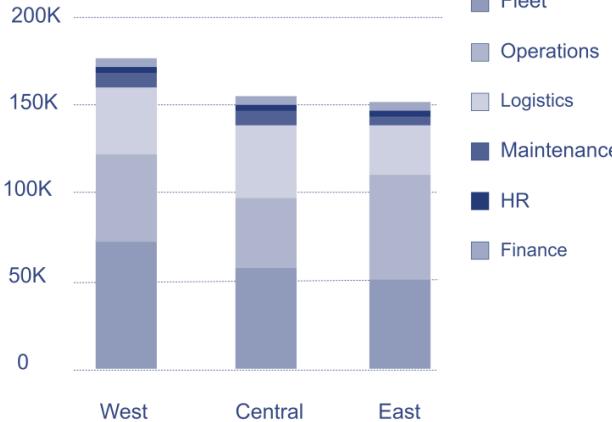
Conclusion

**Insight:** The West region has the highest overall emissions.

A

### Total Emissions Breakdown by Region

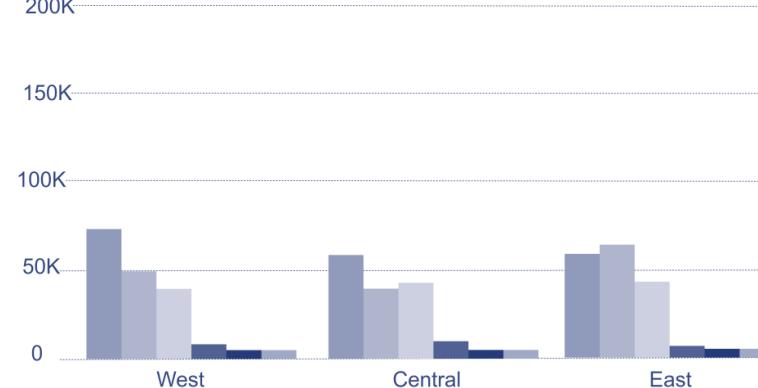
Gigajoule



B

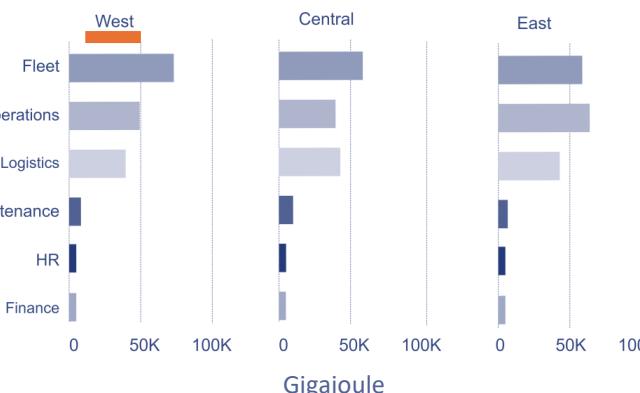
### Total Emissions Breakdown by Region

Gigajoule



C

### Total Emissions Breakdown by Region



Nicholas P. Desbarates

Introduction

Breakdown of several totals  
A Stacked column chart is the best choice if you need to compare totals precisely.

Hint: Include insights in a subtitle.

User



Smart

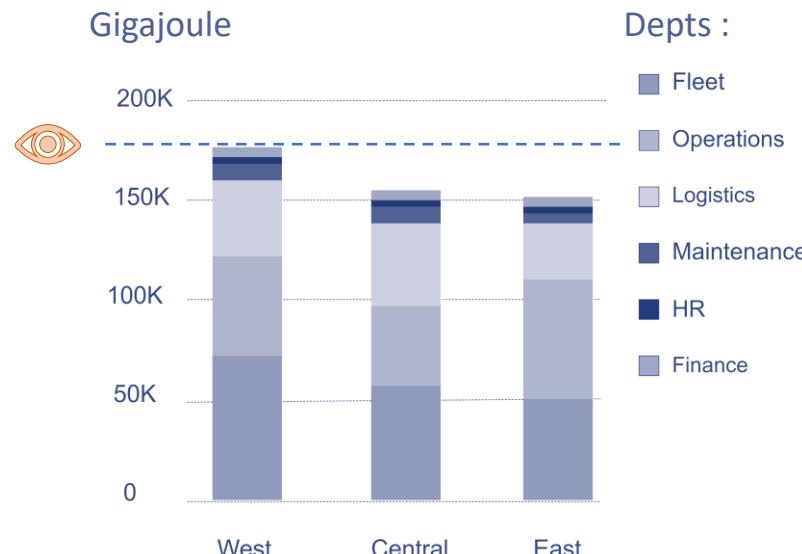
Beautiful

Conclusion

YES A

## Total Emissions Breakdown by Region

The West region has the highest overall emissions.



## Breakdown of several totals

### Why won't another chart work?

Introduction

User 

Smart

Beautiful

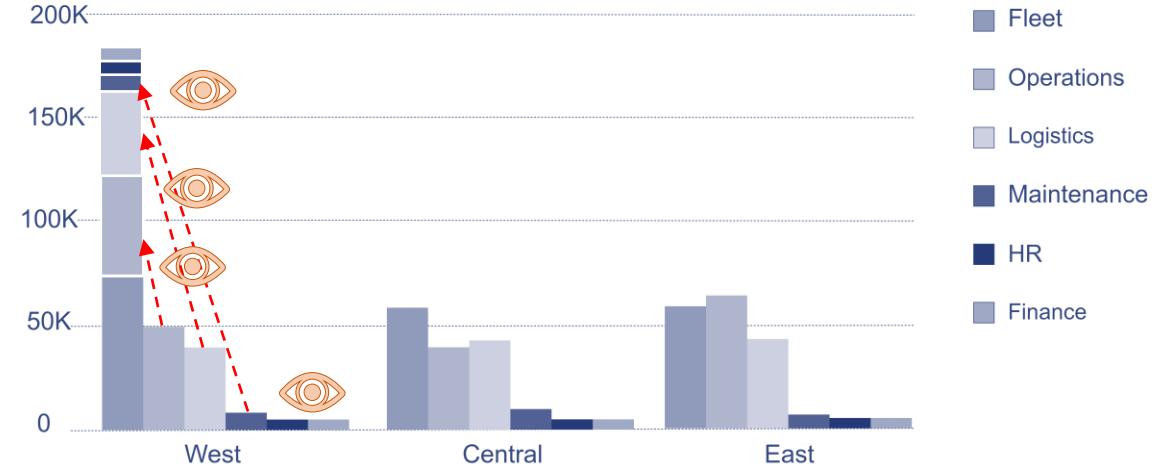
Conclusion

Stacked column chart



A

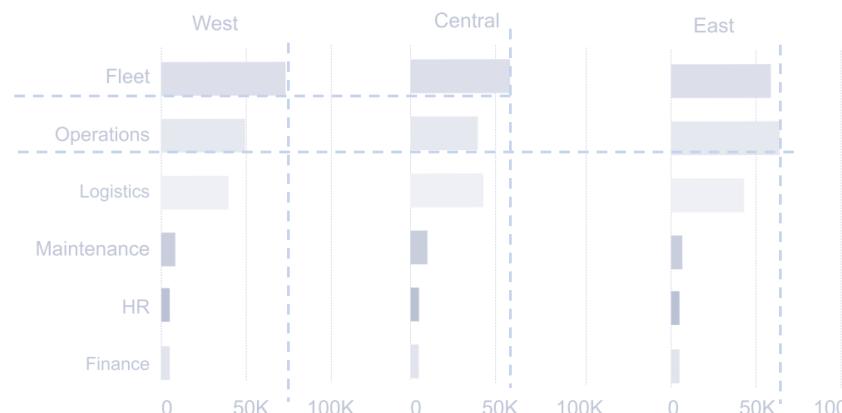
Clustered column chart



B

C

Side by side bar chart



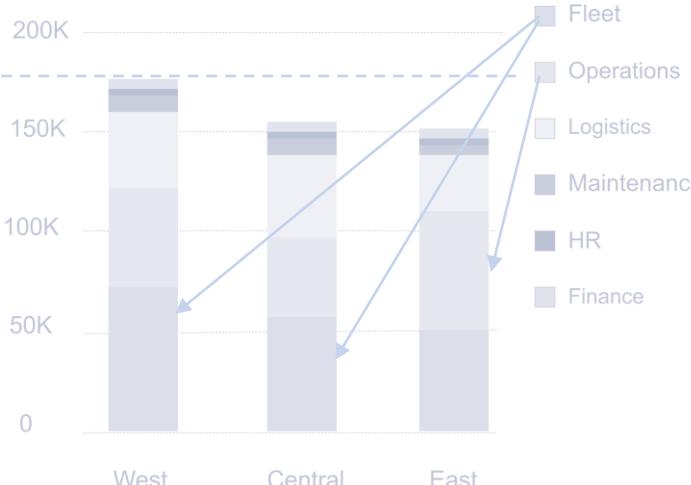
Nicholas P. Desbarates

Breakdown of several totals

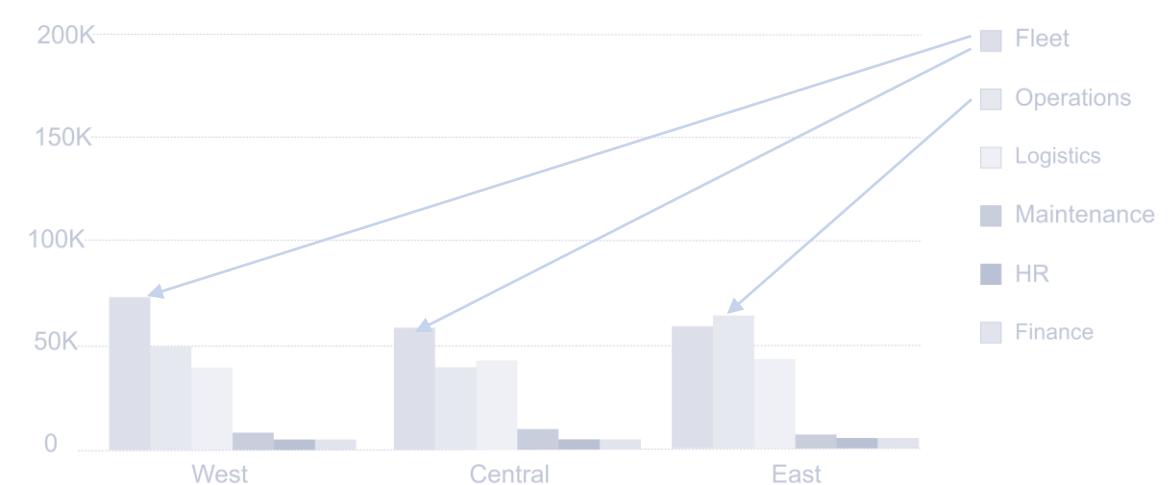
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- Beautiful
- Conclusion

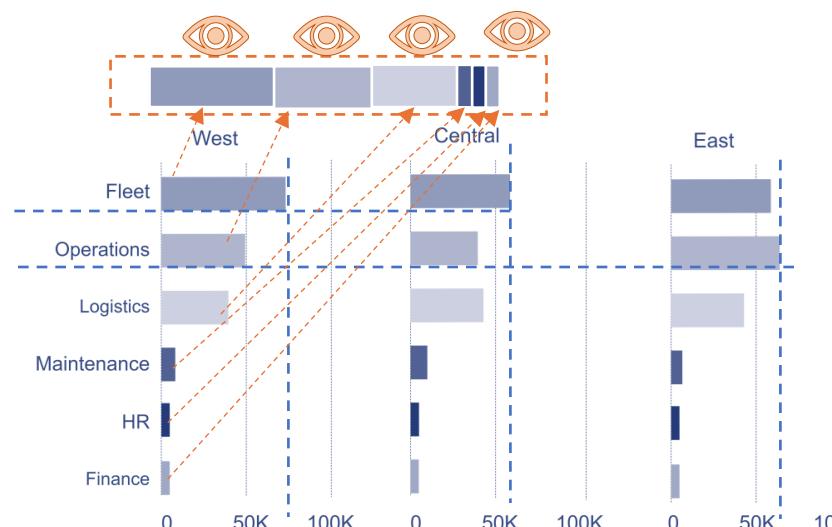
Stacked column chart



Clustered column chart



C



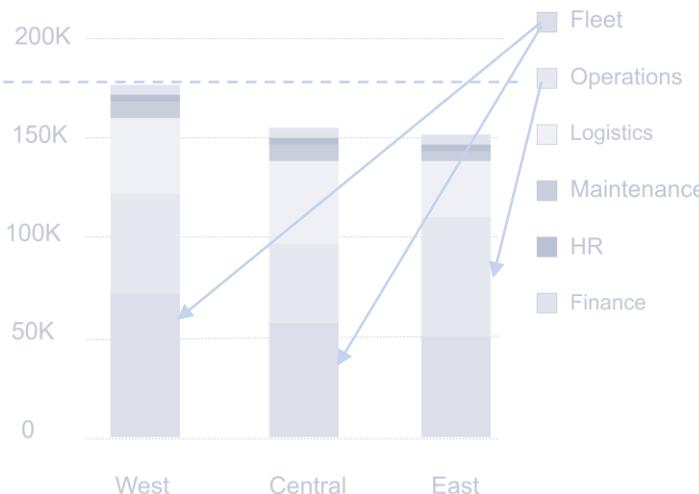
Nicholas P. Desbarates

Breakdown of several totals

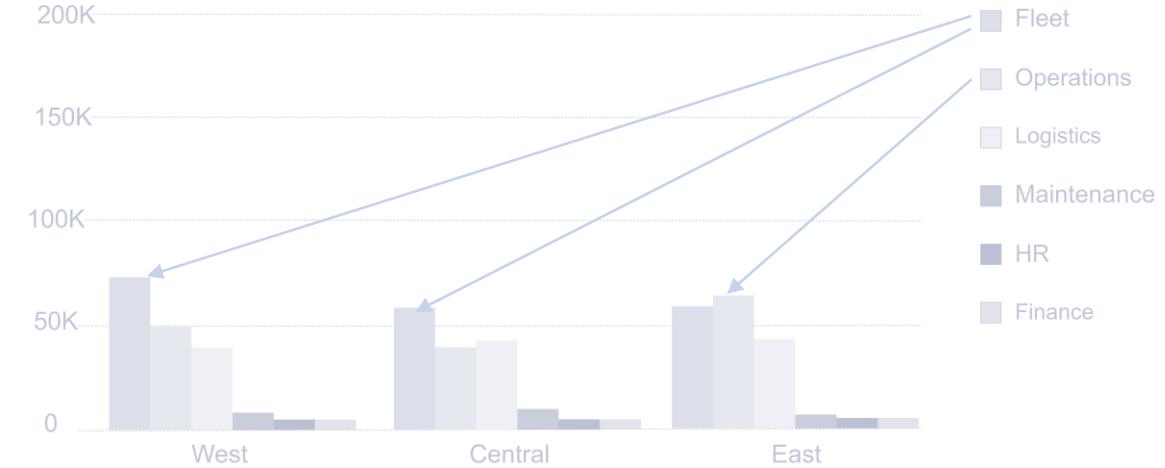
## Why won't another chart work?

- Introduction
- User 
- Smart
- Beautiful
- Conclusion

Stacked column chart

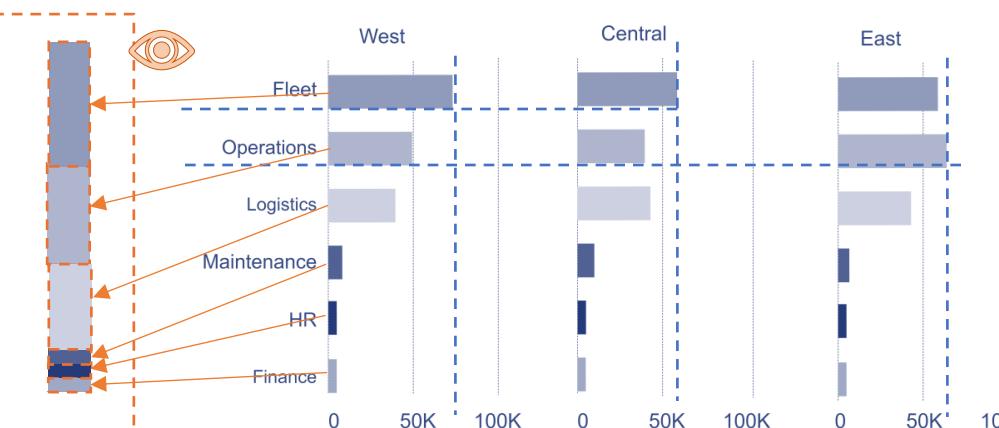


Clustered column chart



C

Side by side bar chart



Nicholas P. Desbarates

Breakdown of several totals

## Why won't another chart work?

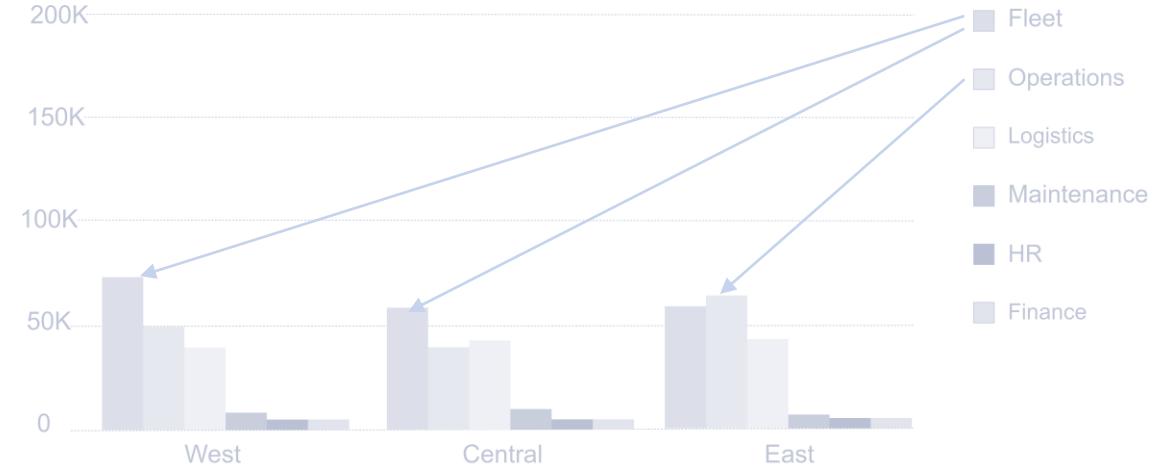
- Introduction
- User 
- Smart
- Beautiful 
- Conclusion

Stacked column chart



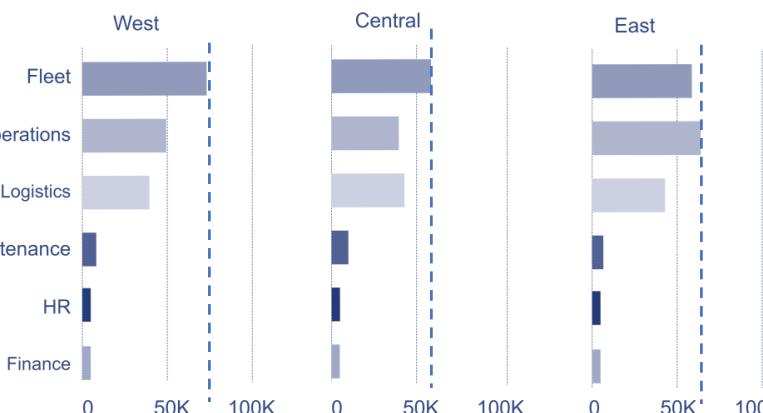
A

Clustered column chart



C

Side by side bar chart



Nicholas P. Desbarates

Introduction

Breakdown of several totals  
A Stacked column chart is the best choice if you need to compare totals precisely.

Hint: Include insights in a subtitle.

User



Smart

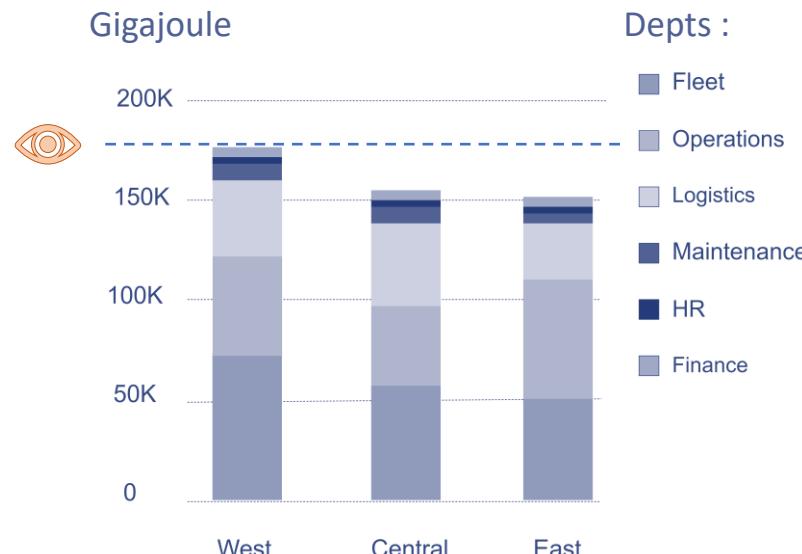
Beautiful

Conclusion

YES A

## Total Emissions Breakdown by Region

The West region has the highest overall emissions.



Introduction

Breakdown of several totals  
A Stacked column chart is the best choice if you need to compare totals precisely.

Hint: Include insights in a subtitle.

User



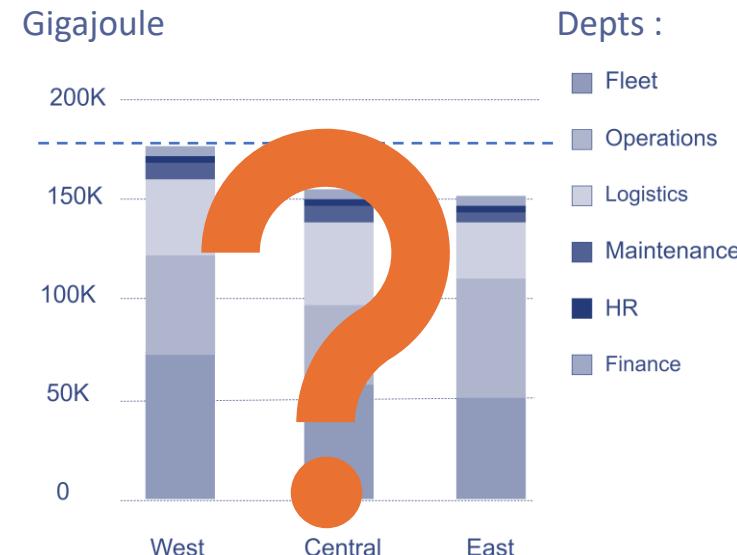
Smart

Beautiful

Conclusion

## Total Emissions Breakdown by Region

The West region has the highest overall emissions.



Breakdown of several totals

## Use multiple charts to tell the story

- Introduction
- User 
- Smart
- Beautiful
- Conclusion

Total Emissions

Gigajoule

Column chart

200K

150K

100K

50K

0

West

Central

East

Breakdown by Region

Depts :

- Fleet
- Operations
- Logistics
- Maintenance
- HR
- Finance

Emissions Breakdown by Region

Side by side bar chart

West

Fleet

Operations

Logistics

Maintenance

HR

Finance

Central

Fleet

Operations

Logistics

Maintenance

HR

Finance

East

Fleet

Operations

Logistics

Maintenance

HR

Finance

0

50K

100K

0

50K

100K

0

50K

100K

Breakdown of several totals

Use more charts?

Introduction

User 

Total Emissions

Gigajoule

Column chart

200K

150K

100K

50K

0

West

Central

East

Breakdown by Region

Emissions **Breakdown** by Region

Side by side bar chart

West

Fleet

Operations

Logistics

Maintenance

HR

Finance

Central

East

0

50K

100K

0

50K

100K

0

50K

100K

Smart

Beautiful

Conclusion

A Side-by-side bar chart is the best choice if you want to show different measures with **different entities**.

Introduction

User 

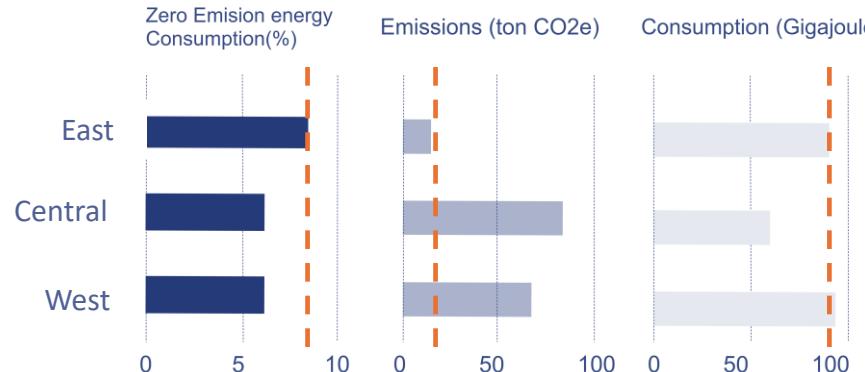
Smart

Beautiful

Conclusion

## Impact of Zero-Emission Energy Use on Total Emissions

The East Region Leads in Zero-Emission Energy Use, Resulting in the Lowest Emissions Despite High Consumption



A Side-by-side bar chart is the best choice if you want to show different measures with **different entities**.

Introduction

User 

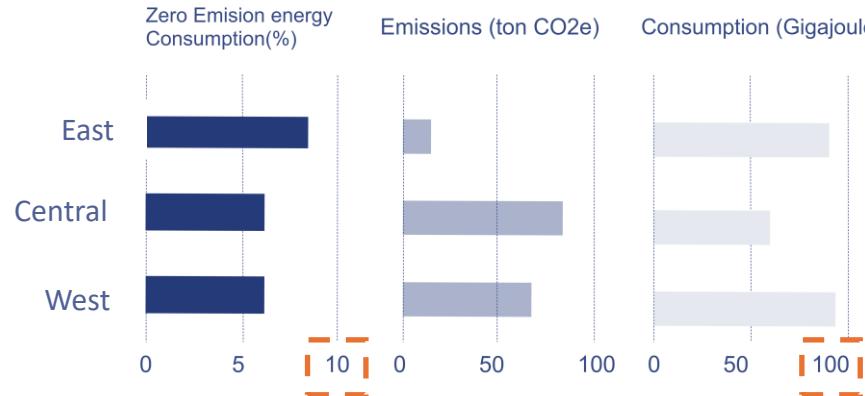
Smart

Beautiful

Conclusion

## Impact of Zero-Emission Energy Use on Total Emissions

The East Region Leads in Zero-Emission Energy Use, Resulting in the Lowest Emissions Despite High Consumption



Breakdown of several totals

## Why won't another chart work?

Introduction

User

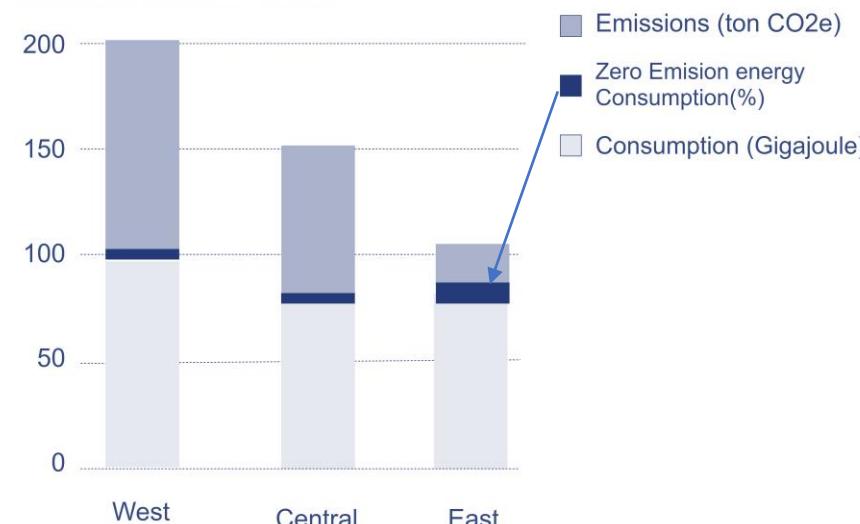


Smart

### Impact of Zero-Emission Energy Use on Total Emissions

The East Region Leads in Zero-Emission Energy Use, Resulting in the Lowest Emissions Despite High Consumption

Stacked column chart



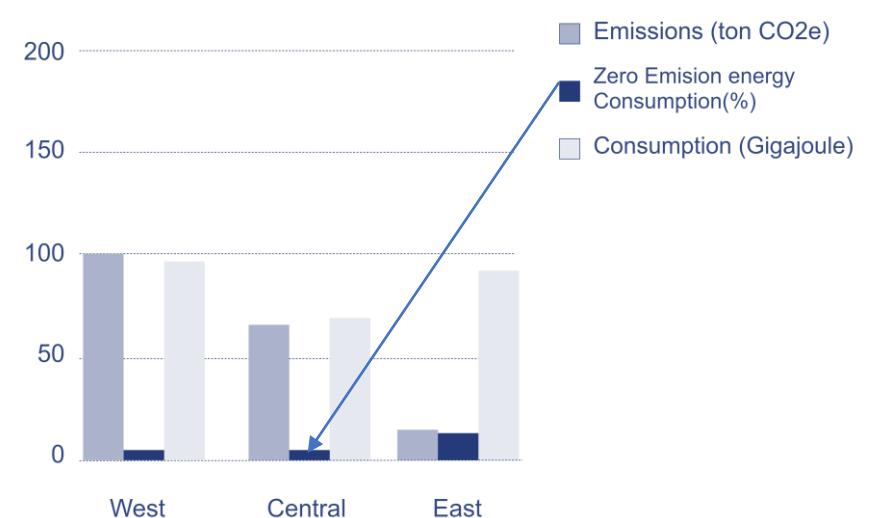
Beautiful

Conclusion

### Impact of Zero-Emission Energy Use on Total Emissions

The East Region Leads in Zero-Emission Energy Use, Resulting in the Lowest Emissions Despite High Consumption

Clustered column chart



## Why won't another chart work?

Introduction

User

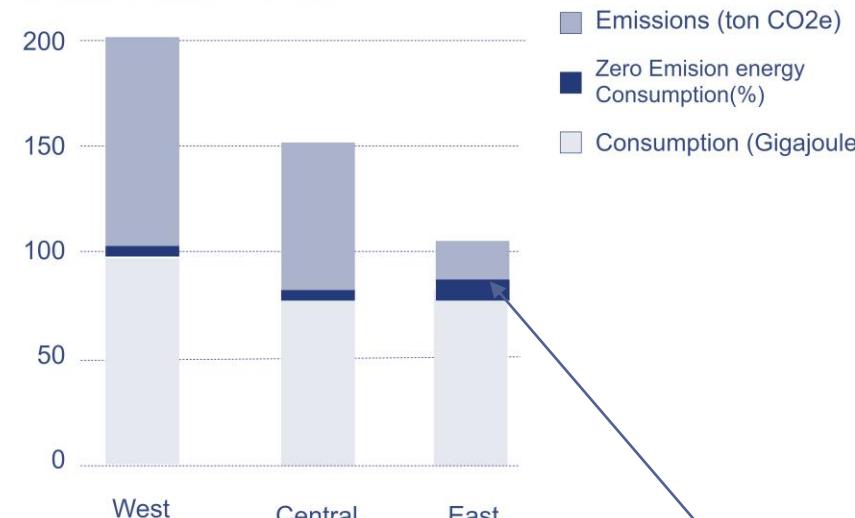


Smart

### Impact of Zero-Emission Energy Use on Total Emissions

The East Region Leads in Zero-Emission Energy Use, Resulting in the Lowest Emissions Despite High Consumption

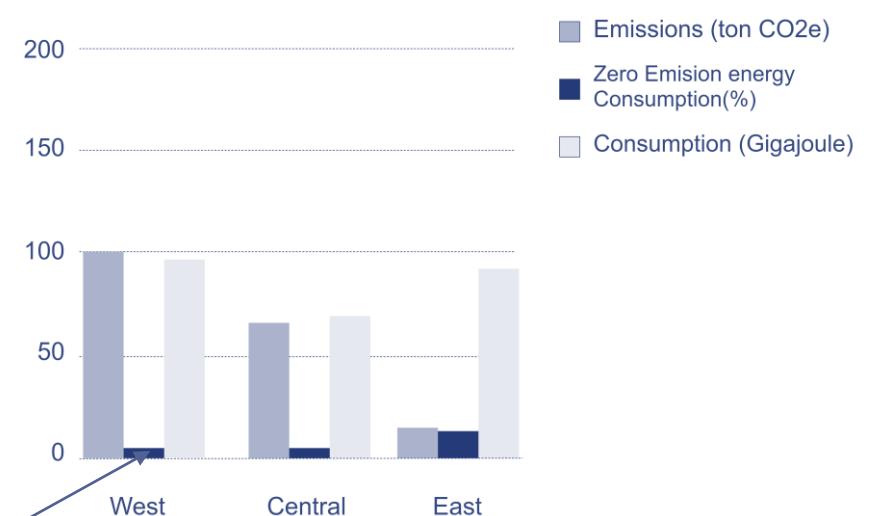
Stacked column chart



### Impact of Zero-Emission Energy Use on Total Emissions

The East Region Leads in Zero-Emission Energy Use, Resulting in the Lowest Emissions Despite High Consumption

Clustered column chart



The scale is too small

Conclusion

A Side-by-side bar chart is the best choice if you want to show **different measures** with different entities.

Introduction

User 

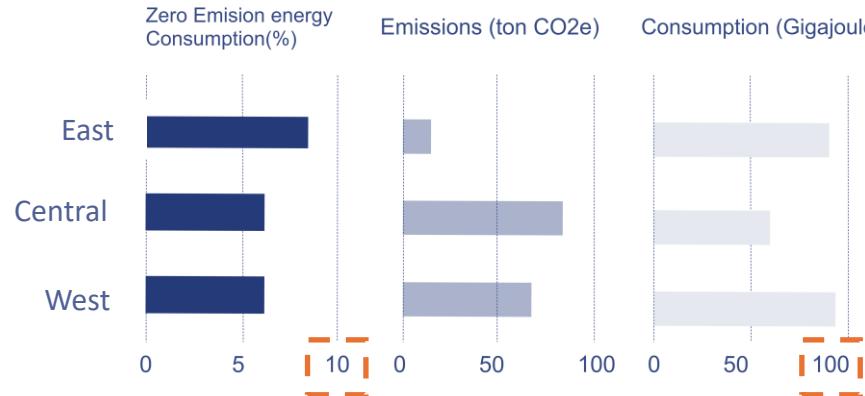
Smart

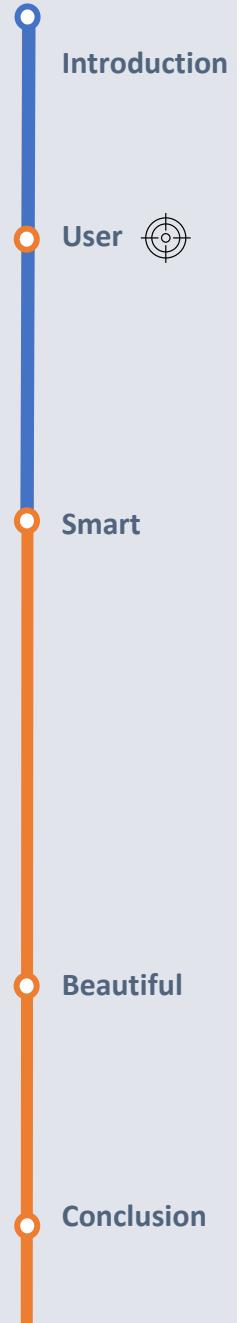
Beautiful

Conclusion

## Impact of Zero-Emission Energy Use on Total Emissions

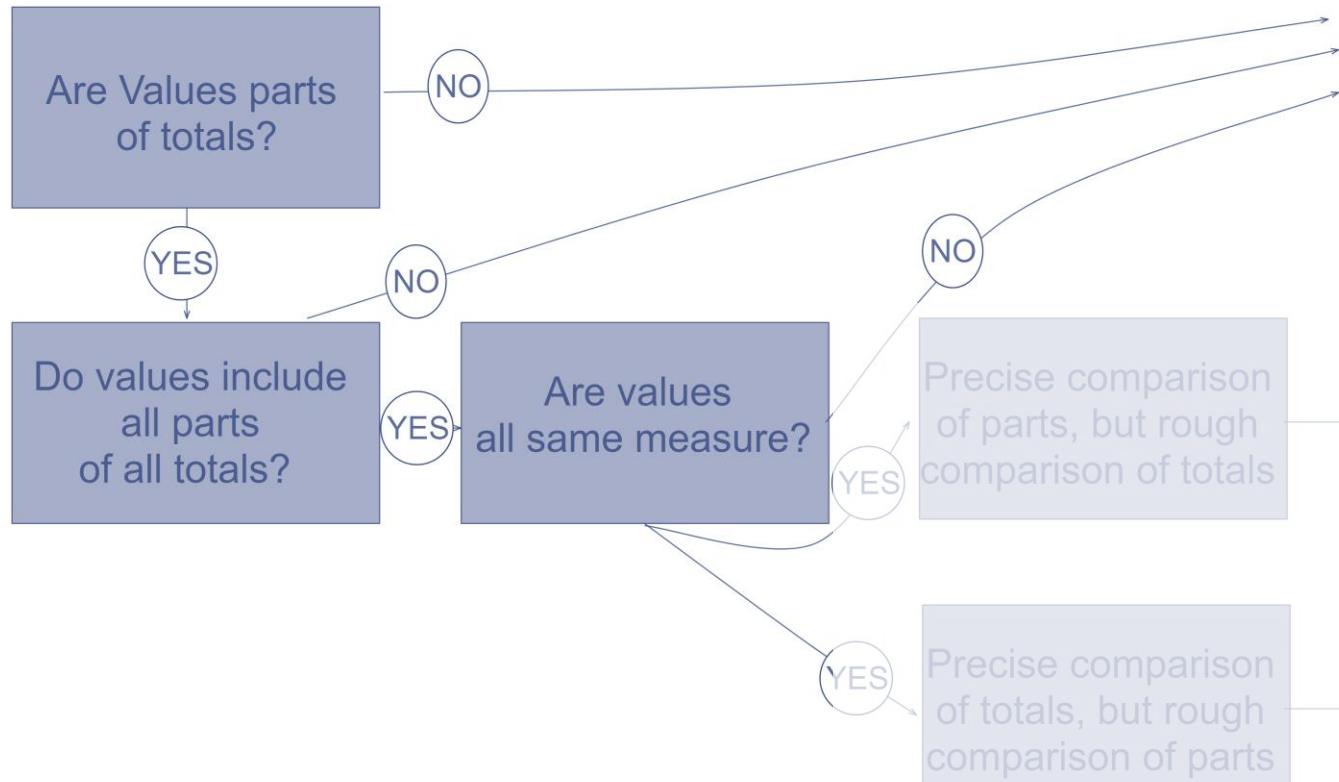
The East Region Leads in Zero-Emission Energy Use, Resulting in the Lowest Emissions Despite High Consumption



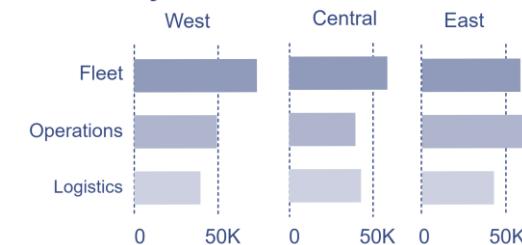


## Breakdown of several totals

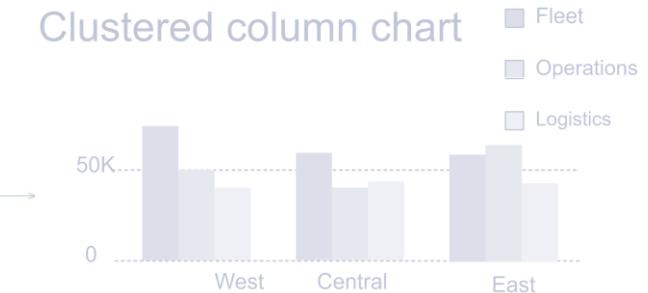
**Side-by-side bar chart** – values are not part of a total, are missing parts of a total, or use different measures



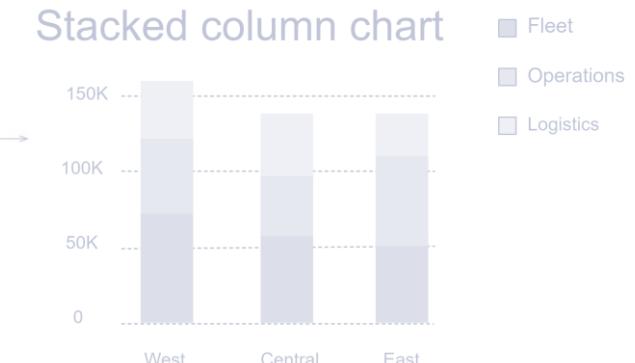
Side by side bar chart



Clustered column chart



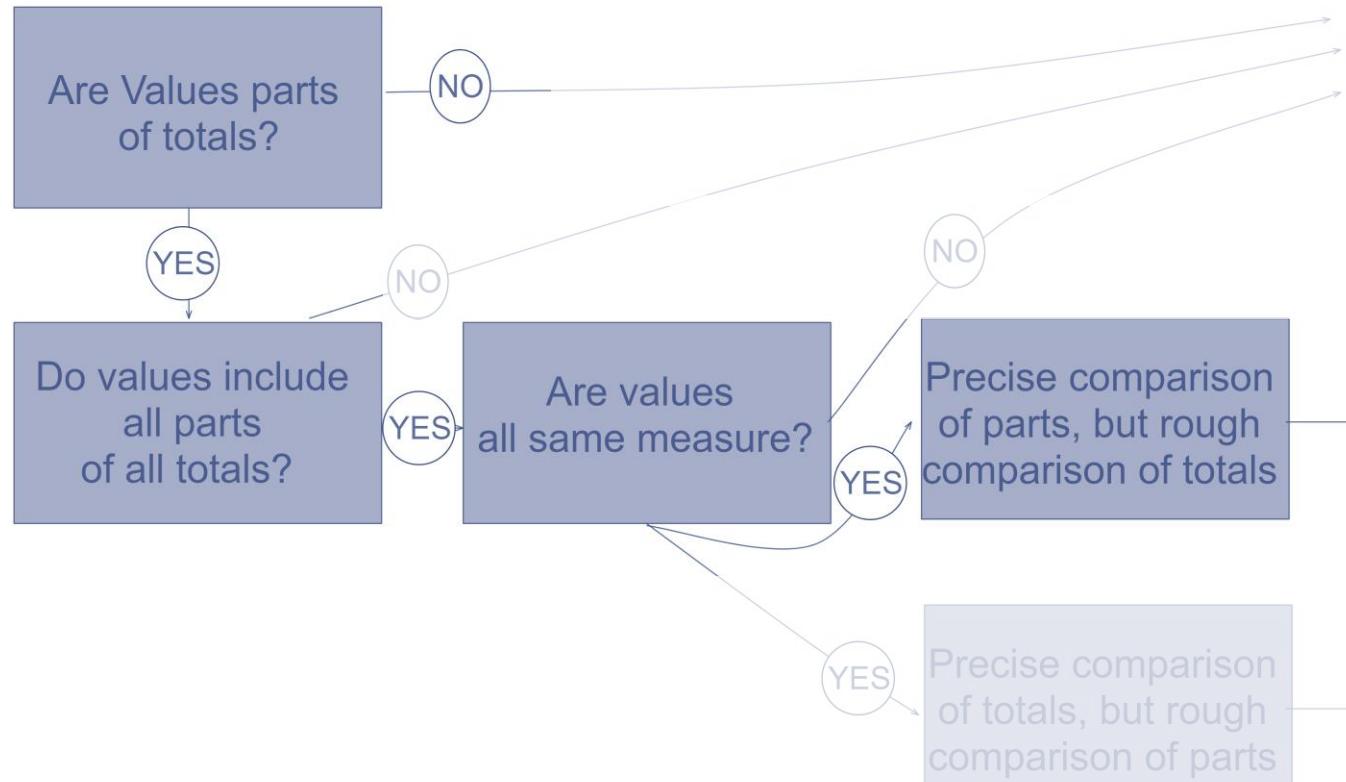
Stacked column chart



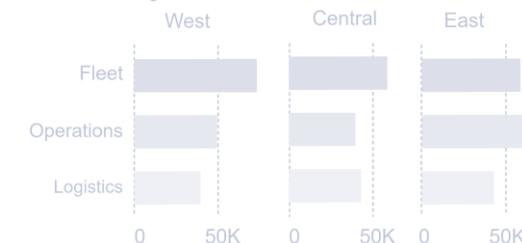


Breakdown of several totals

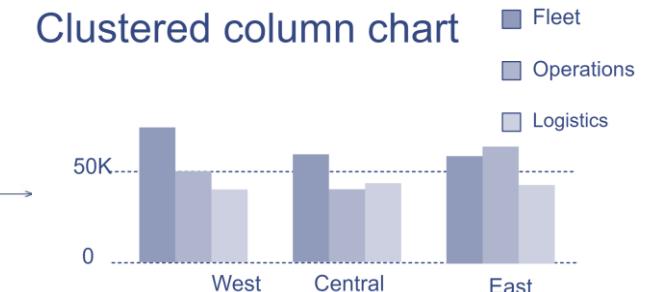
**Clustered column chart – precise comparison of parts** when all values are part of a total, include all parts of the total, and use the same measure.



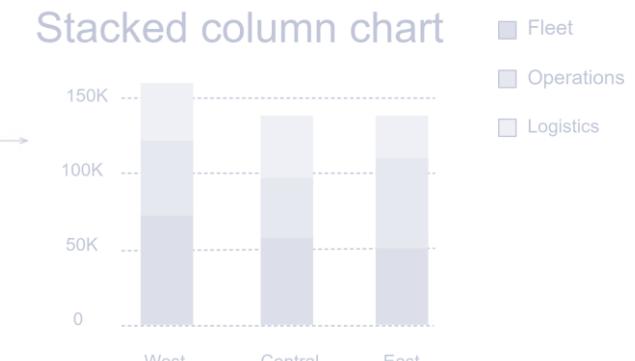
Side by side bar chart



Clustered column chart



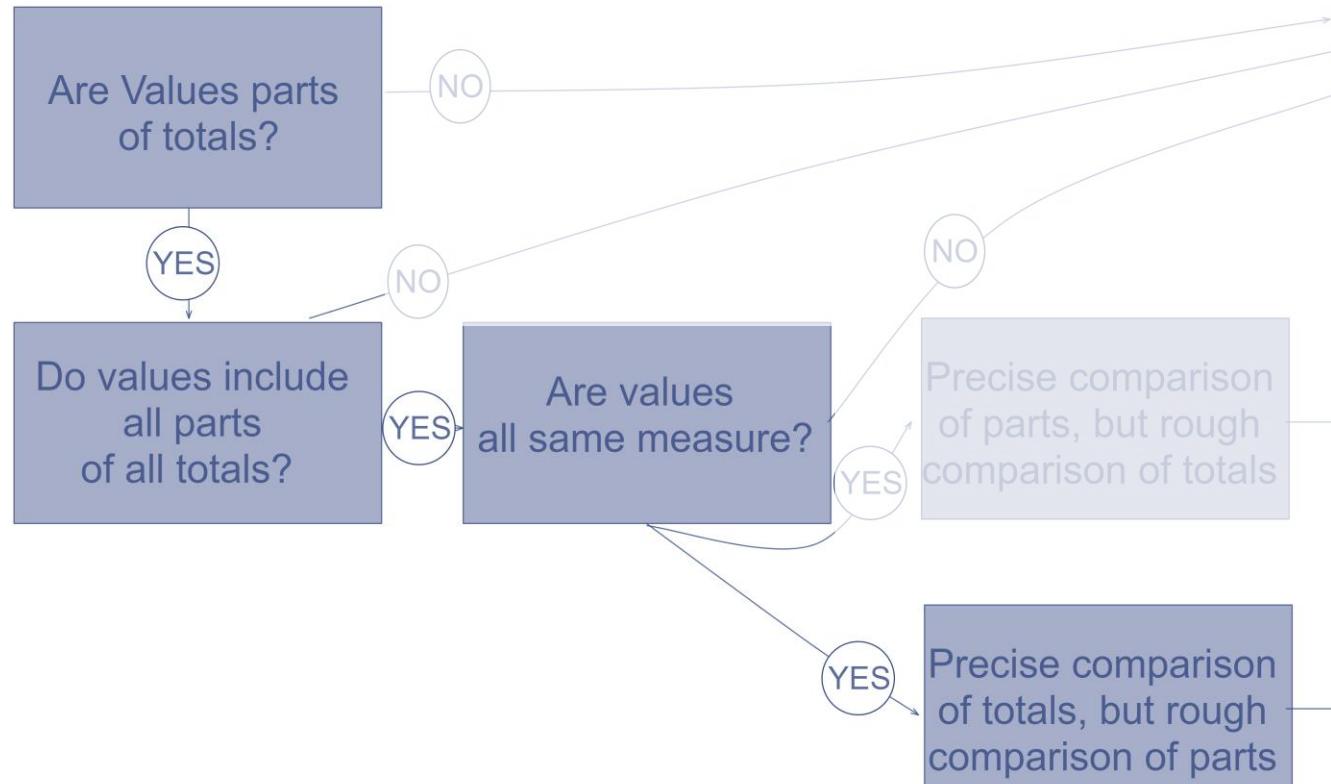
Stacked column chart



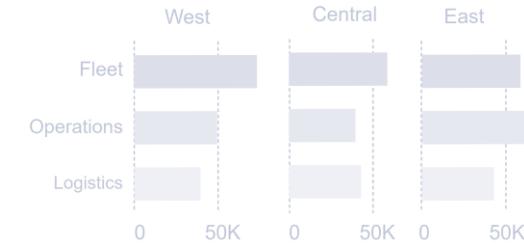


## Breakdown of several totals

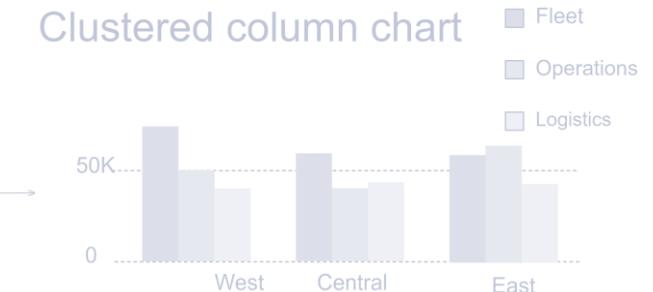
**Stacked column chart – precise comparison of totals** when all values are part of a total, include all parts of the total, and use the same measure.



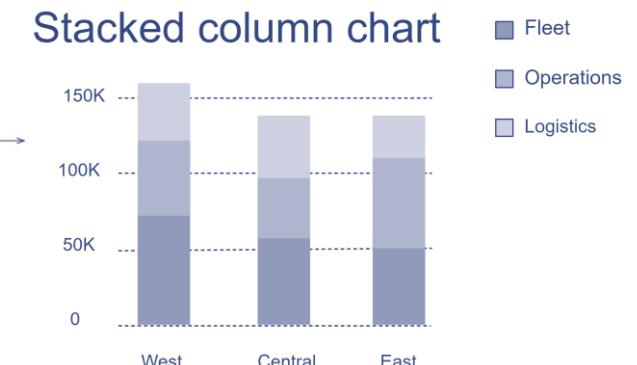
Side by side bar chart



Clustered column chart



Stacked column chart



Introduction

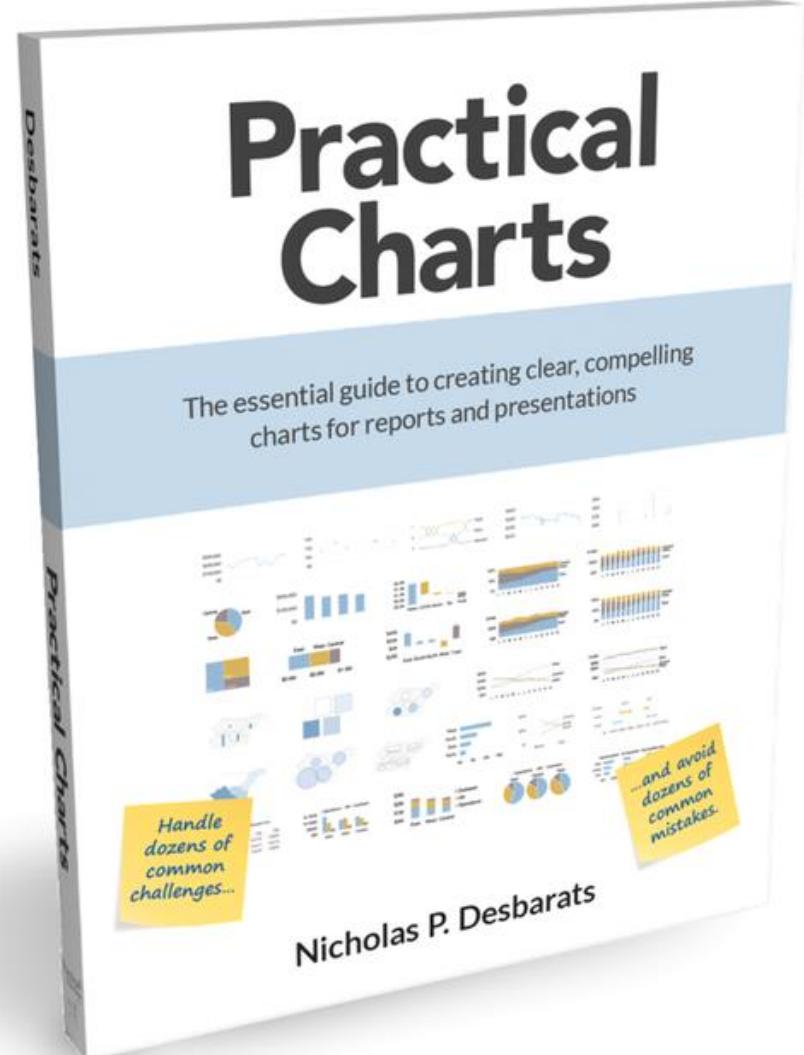
User 

Smart

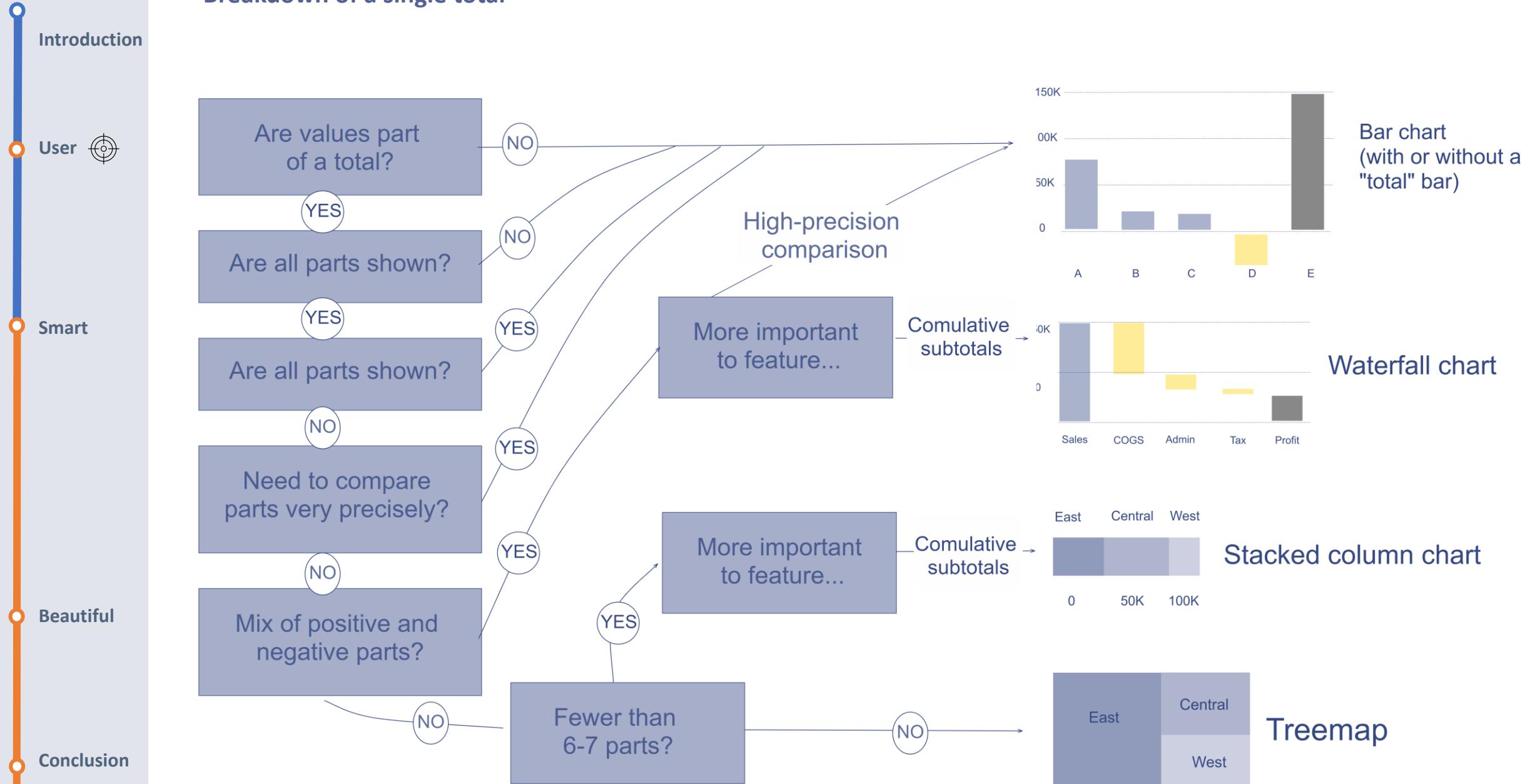
Beautiful

Conclusion

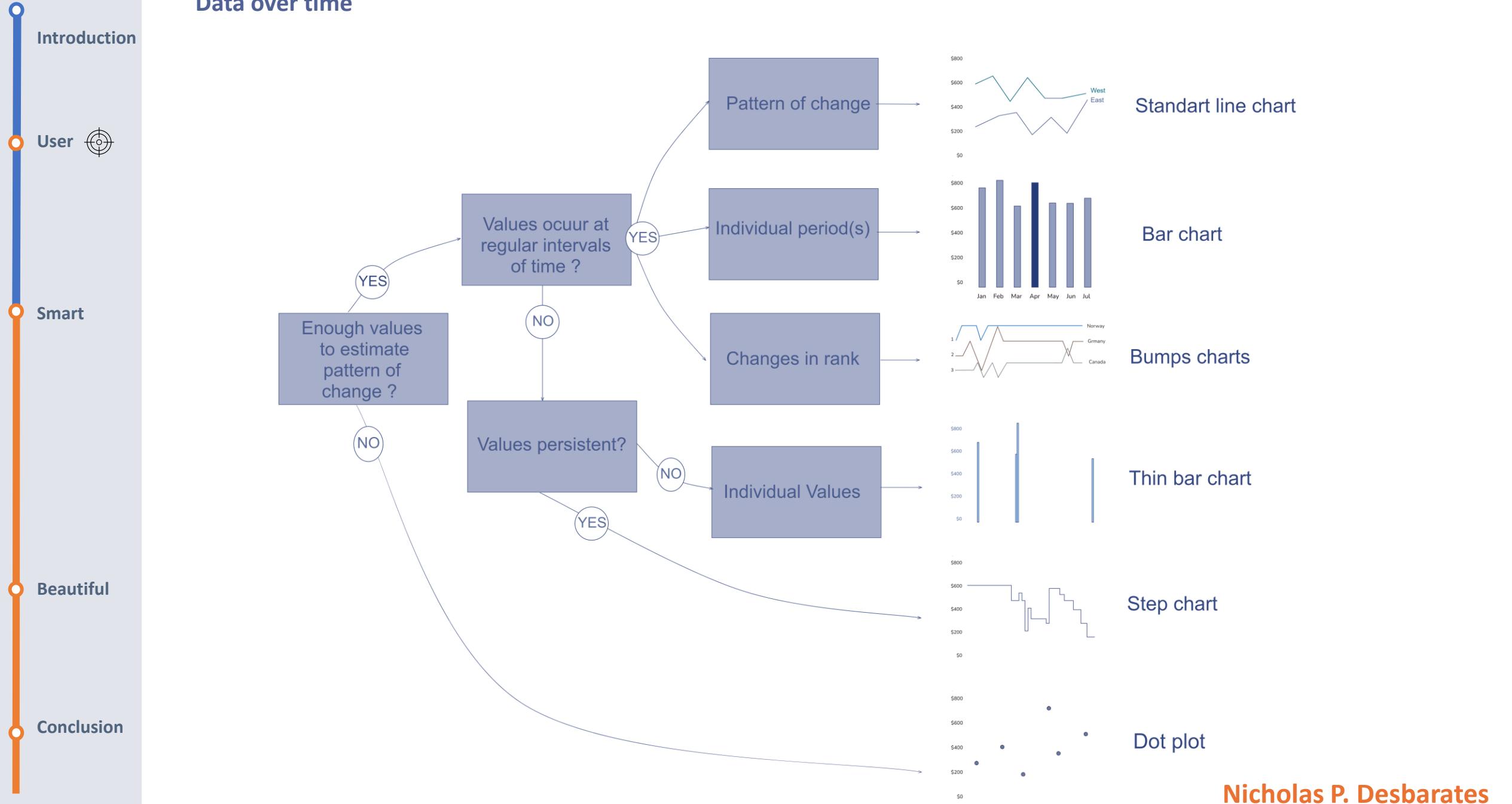
A chart should do its job



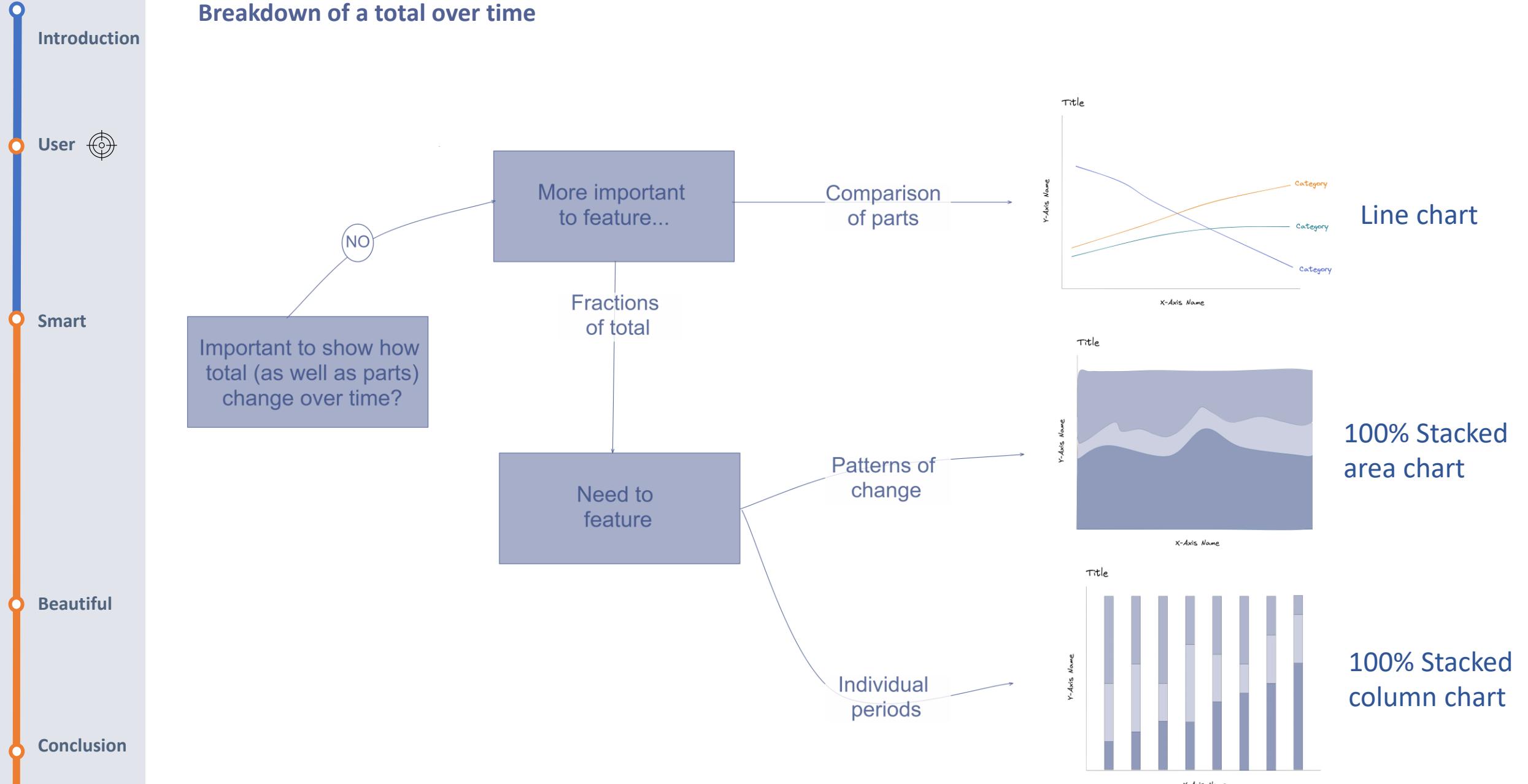
## Breakdown of a single total



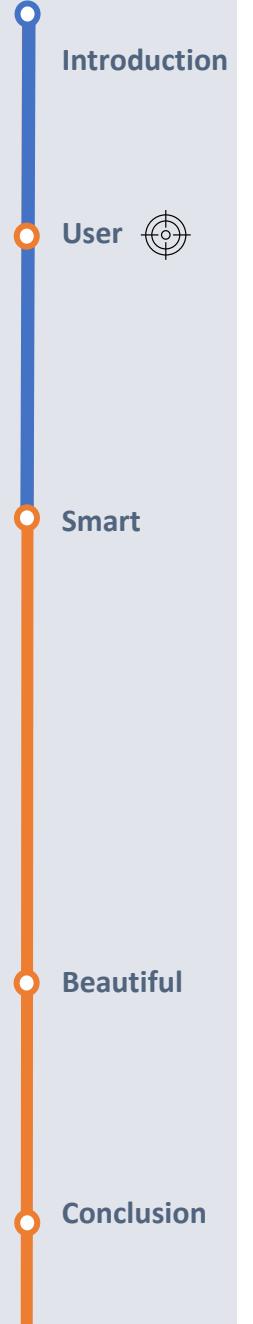
# Data over time



## Breakdown of a total over time



## Breakdown of a total over time



Important to show how total (as well as parts) change over time?

More important to feature...

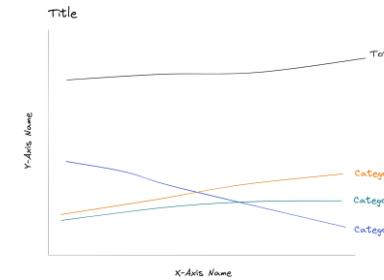
Fractions of total

Need to feature

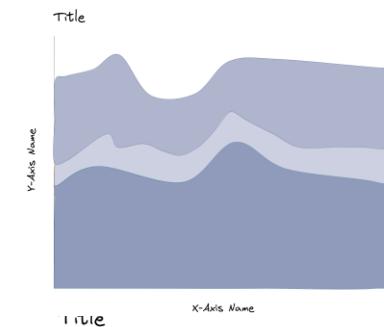
Comparison of parts

Patterns of change

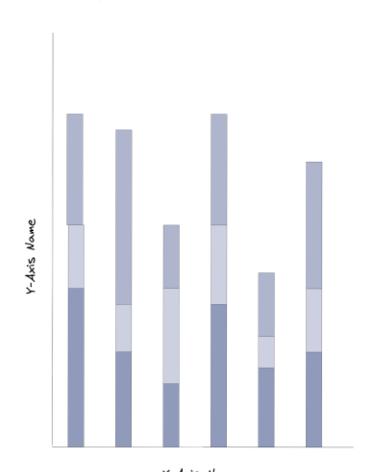
Individual periods



Line chart with total



Stacked area chart



Stacked column chart

Nicholas P. Desbarates

Introduction

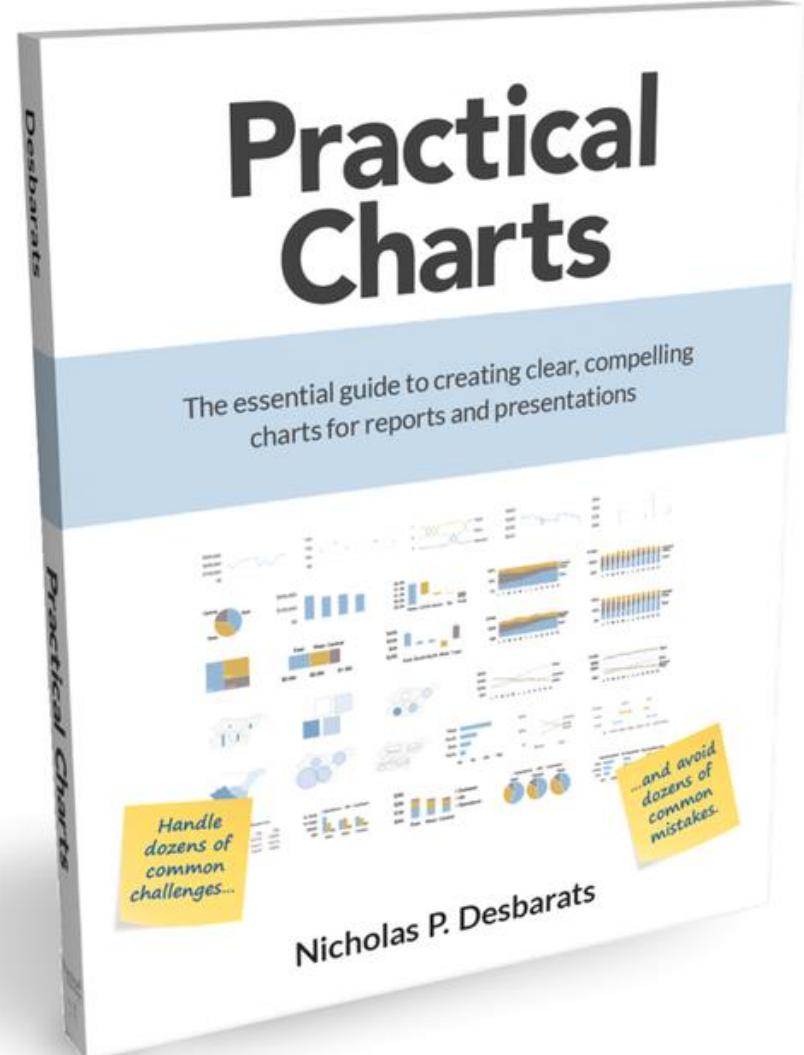
User 

Smart

Beautiful

Conclusion

A chart should do its job



Introduction

User

Smart

Beautiful

Conclusion

excalidraw.com

To move canvas, hold mouse wheel or spacebar while dragging, or use the hand tool

Total Monthly Expenses by Region

Month	West (Blue)	East (Orange)
Jan	\$400	\$750
Feb	\$550	\$650
Mar	\$450	\$800
Apr	\$350	\$800
May	\$550	\$800
Jun	\$600	\$750
Jul	\$700	\$800

2020 2024

Month	Expenses
Jan	\$750
Feb	\$800
Mar	\$650
Apr	\$800
May	\$650
Jun	\$650
Jul	\$700

7,167K

Personal Library

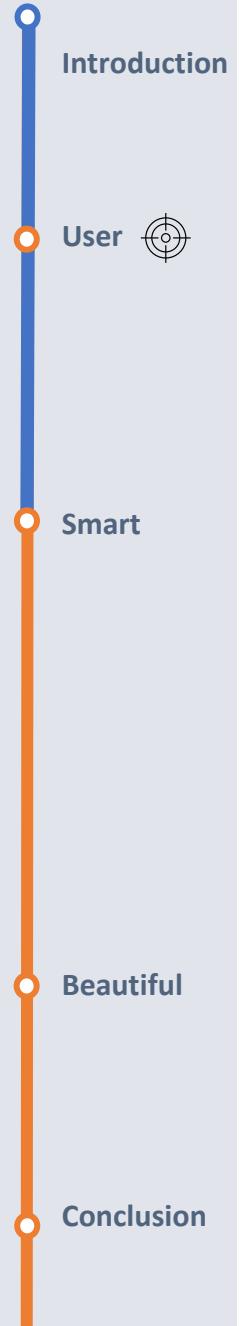
Open

Save to...

Reset library

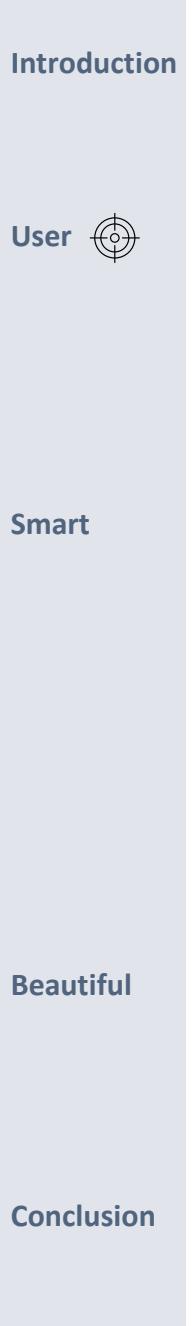
Monthly Expenses

2020 2024



## Excalidraw library





### 3. Visual Design (Beautiful)

# Start from story

Introduction

User



DESIGNED BY: MARIA

Smart

Beautiful

Conclusion

## WHAT WE CAN LEARN FROM THE OCEAN CLEANUP | USA 2015-2019

### Waste Collected on the Beach by Volunteers

60% of Waste Found is Single-Use Plastic.

### Volunteers' Motivation Declines: Reducing Single-Use Plastic is Key

10 million volunteers in 2017 dropped to 4 million by 2019, showing the need to reduce single-use plastic before it reaches the coast

### Top 3 Waste Types Found on the Beach

Highlights the lack of awareness about the impact of every person on pollution.

### Cleanup Efforts Fall Short

The most waste was collected in 2017—nearly 9,000 garbage trucks, covering only 15% of pollution.

### Coastal States Lead in Volunteer Efforts, But Prevention is Key

States like California have the most active cleanups, but the real solution lies in reducing single-use plastic before it reaches the coast.

### Actions to Prevent Plastic from Entering the Ocean:

Between 2015 and 2019, over 10,000 people volunteered for ocean cleanups in America. While vital for raising awareness, these efforts alone cannot solve the pollution problem.

1. Reduce Plastic Usage
2. Improve Waste Management
3. Enforce Regulations
4. Increase Public Awareness
5. Stop Ocean Dumping
6. Control Industrial Runoff

# Refine the story

Introduction

User

WHAT WE CAN LEARN FROM  
THE OCEAN CLEANUP  
| USA 2015-2019

DESIGNED BY: MARIA LYS

## Waste Collected on the Beach by Volunteers

60% of Waste Found is Single-Use Plastic.

## Top 3 Waste Types Found on the Beach

Highlights the lack of awareness about the impact of every person on pollution.

Smart

## Cleanup Efforts Fall Short

The most waste was collected in 2017—nearly 9,000 garbage trucks, covering only 15% of pollution.

## Actions to Prevent Plastic from Entering the Ocean:

Between 2015 and 2019, over 10,000 people volunteered for ocean cleanups in America. While vital for raising awareness, these efforts alone cannot solve the pollution problem.

Beautiful

1. Reduce Plastic Usage
2. Improve Waste Management
3. Enforce Regulations
4. Increase Public Awareness
5. Stop Ocean Dumping
6. Control Industrial Runoff

Conclusion

# Chose the right visual

Introduction

User

## WHAT WE CAN LEARN FROM THE OCEAN CLEANUP | USA 2015-2019

DESIGNED BY: MARIA LYS

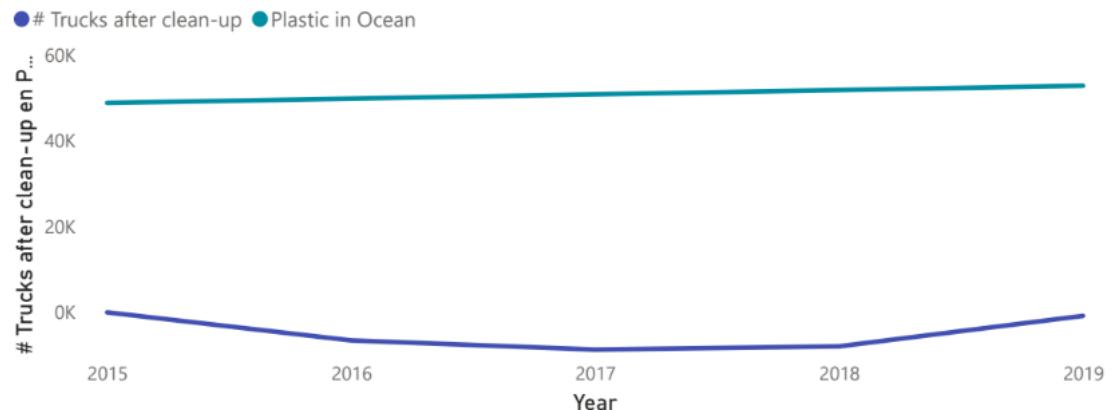
### Waste Collected on the Beach by Volunteers

60% of Waste Found is Single-Use Plastic.

Attribute	% of items collected
Cigarette Butts	21,00%
Plastic Pieces	19,01%
Food Wrappers (candy, chips, etc.)	7,96%
Bottle Caps (Plastic)	7,00%
Beverage Bottles (Plastic)	5,16%
Glass Pieces	3,45%
Straws, Stirrers	3,35%
<b>Totaal</b>	<b>100,00%</b>

### Cleanup Efforts Fall Short

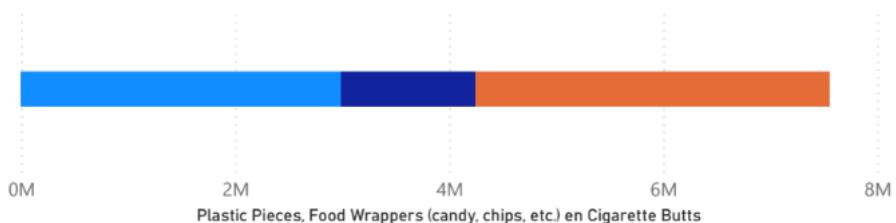
2017 saw a peak with nearly 9,000 garbage trucks of waste collected, yet this represented only 15% of total ocean pollution.



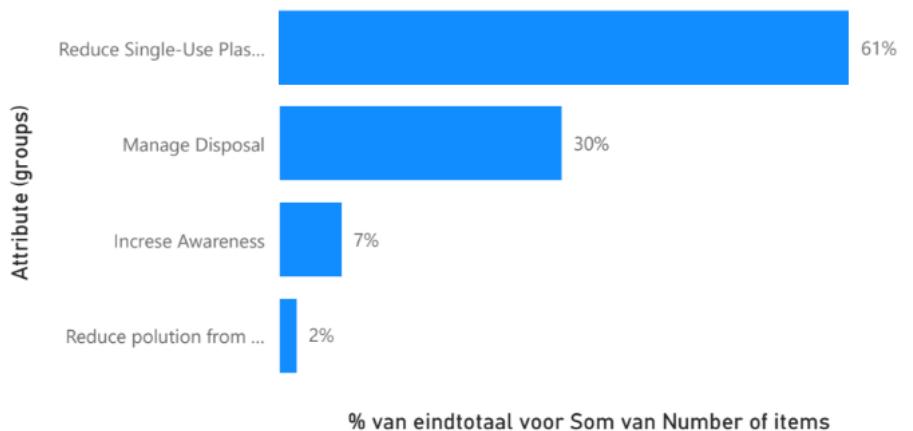
### Top 3 Waste Types Found on the Beach

Highlights the lack of awareness about the impact of every person on pollution.

● Plastic Pieces ● Food Wrappers (candy, chips, etc.) ● Cigarette Butts



### Actions to Prevent Plastic from Entering the Ocean:



Smart

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Conclusion

## Chose the right visual

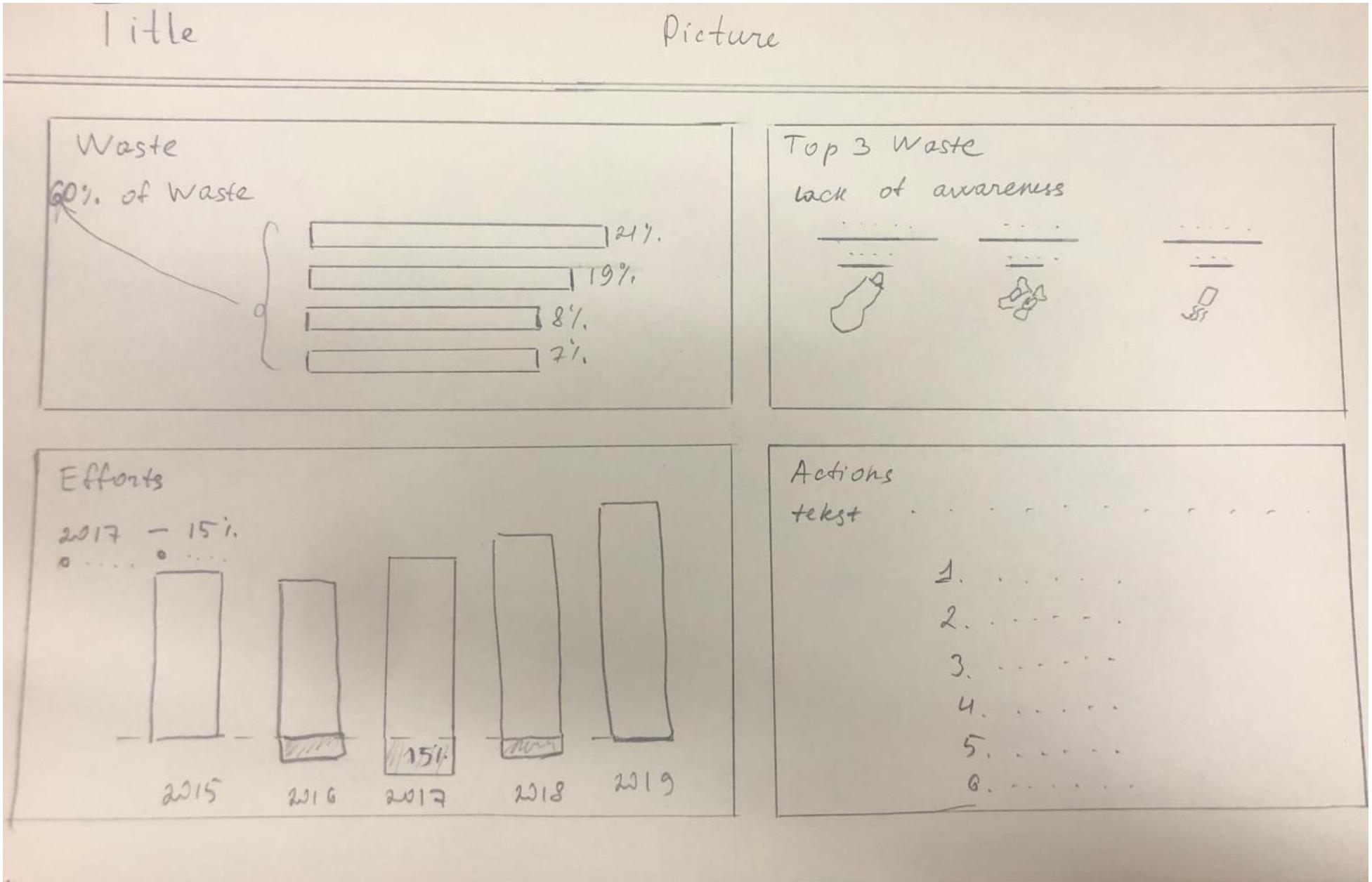
Introduction

User 

Smart

Beautiful

Conclusion



# Chose the right visual

Introduction

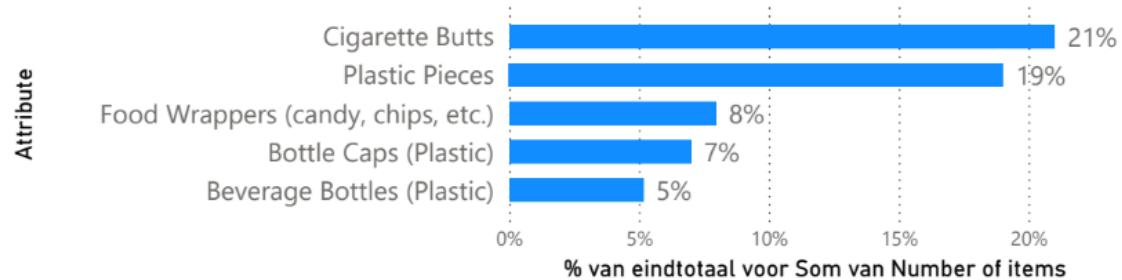
User

WHAT WE CAN LEARN FROM  
THE OCEAN CLEANUP  
| USA 2015-2019

DESIGNED BY: MARIA LYS

## Waste Collected on the Beach by Volunteers

60% of Waste Found is Single-Use Plastic.



## Top 3 Waste Types Found on the Beach

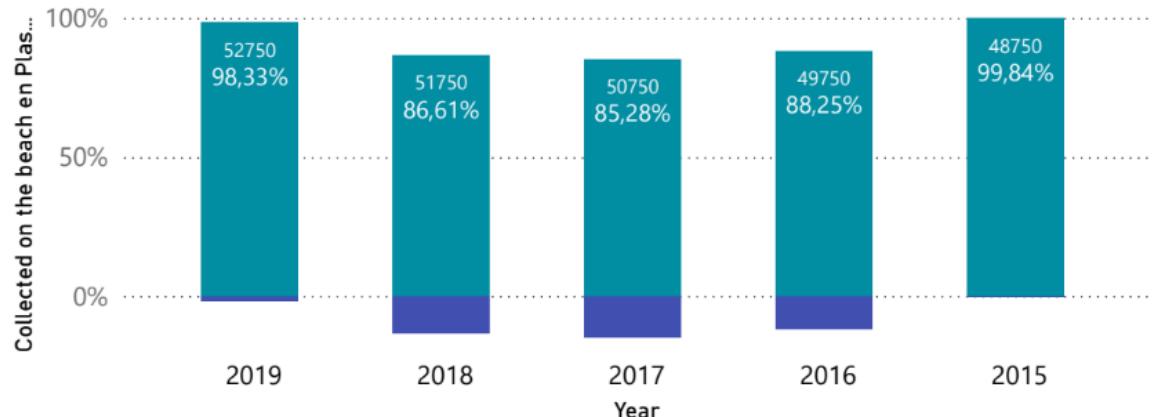
Highlights the lack of awareness about the impact of every person on pollution.



## Cleanup Efforts Fall Short

The most waste was collected in 2017—nearly 9,000 garbage trucks, covering only 15% of pollution.

● Collected on the beach ● Plastic in Ocean



## Actions to Prevent Plastic from Entering the Ocean:

Between 2015 and 2019, over 10,000 people volunteered for ocean cleanups in America. While vital for raising awareness, these efforts alone cannot solve the pollution problem.

1. Reduce Plastic Usage
2. Improve Waste Management
3. Enforce Regulations
4. Increase Public Awareness
5. Stop Ocean Dumping
6. Control Industrial Runoff

## Use Themes (view tab)

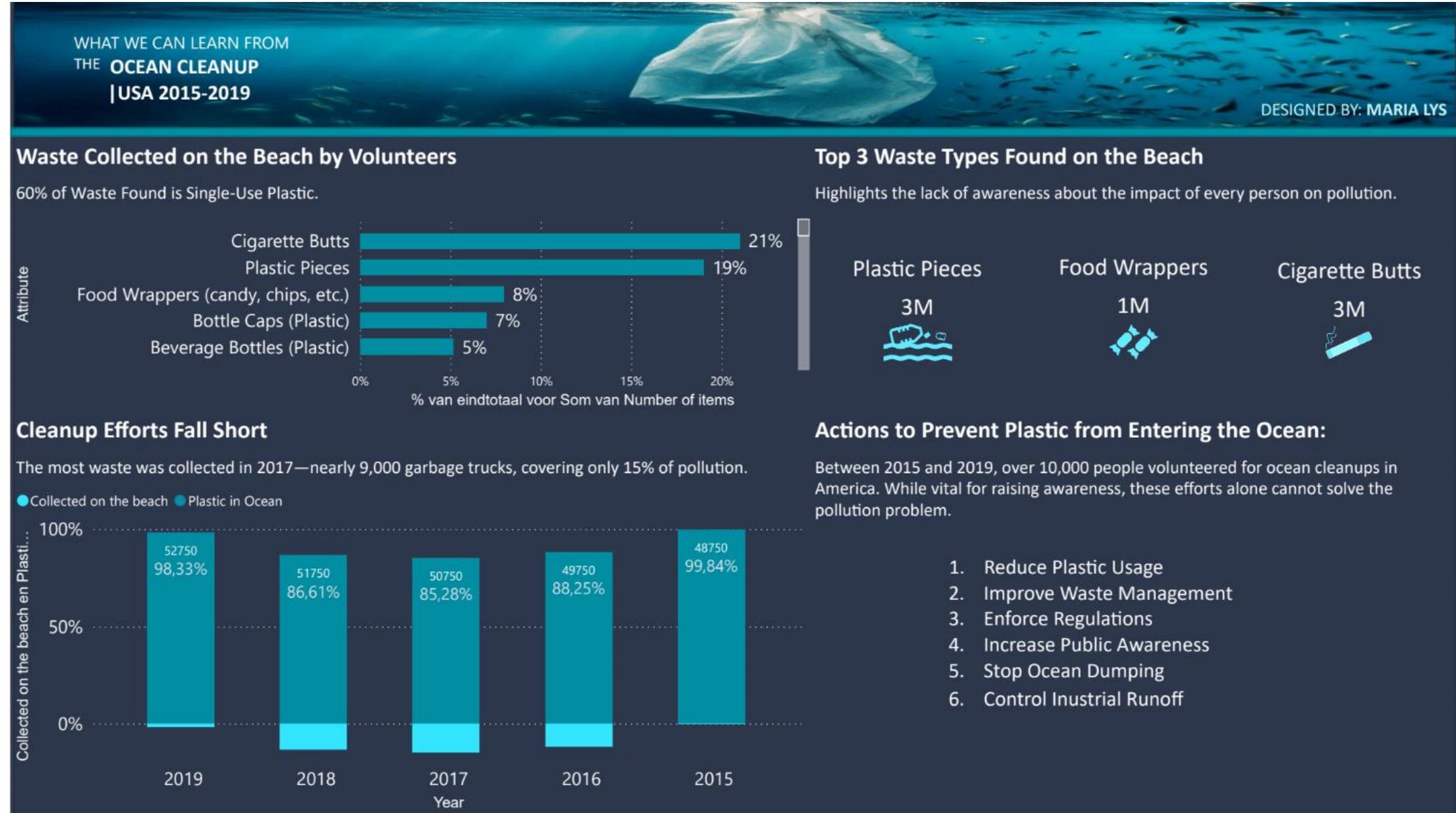
Introduction

User

Smart

Beautiful

Conclusion



# Use Themes (view tab)

Introduction

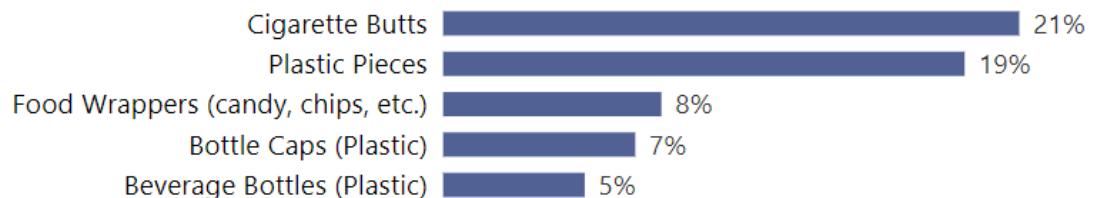
WHAT WE CAN LEARN FROM  
THE OCEAN CLEANUP  
| USA 2015-2019

DESIGNED BY: MARIA LYS

User

## Waste Collected on the Beach by Volunteers

60% of Waste Found is Single-Use Plastic.



## Top 3 Waste Types Found on the Beach

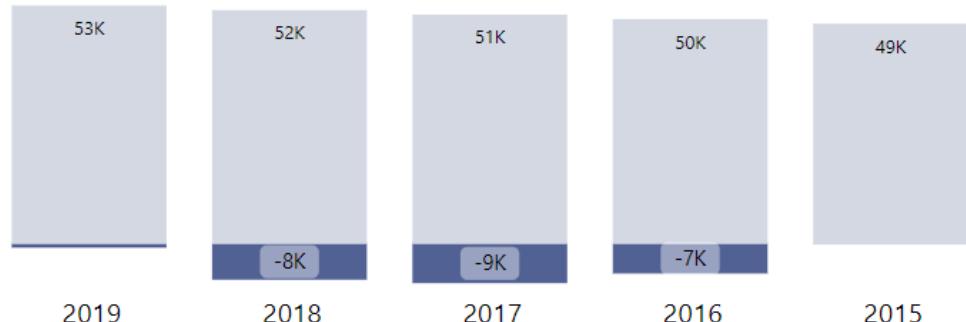
Highlights the lack of awareness about the impact of every person on pollution.

Plastic Pieces      Food Wrappers      Cigarette Butts  
**3M**                  **1M**                  **3M**

## Cleanup Efforts Fall Short

The most waste was collected in 2017—nearly 9,000 garbage trucks, covering only 15% of pollution.

● Collected on the beach ● Plastic in Ocean



## Actions to Prevent Plastic from Entering the Ocean:

Between 2015 and 2019, over 10,000 people volunteered for ocean cleanups in USA. While vital for raising awareness, these efforts alone cannot solve the pollution problem.

1. Reduce Plastic Usage
2. Improve Waste Management
3. Enforce Regulations
4. Increase Public Awareness
5. Stop Ocean Dumping
6. Control Industrial Runoff

Smart

Beautiful

Conclusion

Introduction

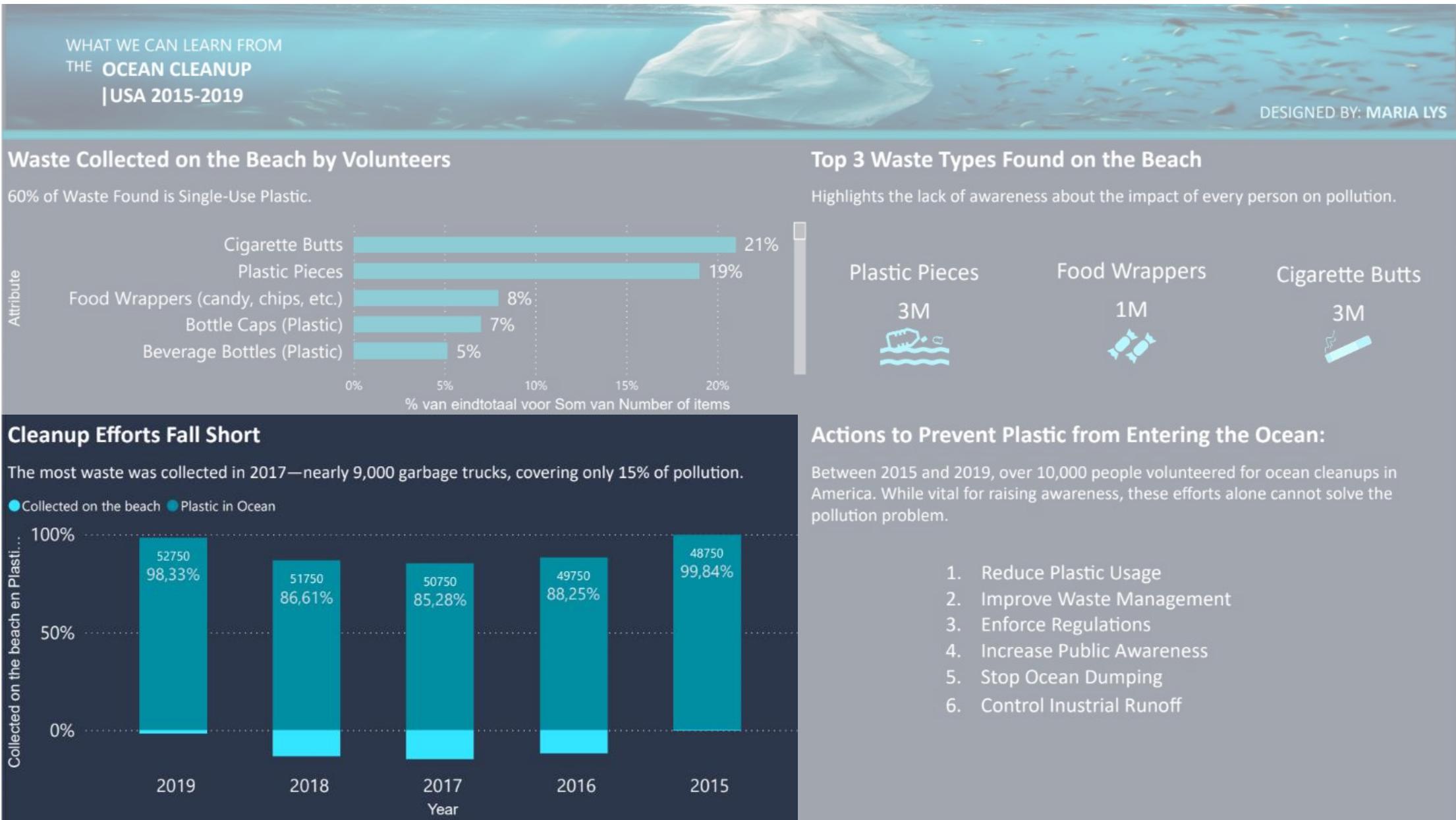
User

Smart

Beautiful

Conclusion

## Remove to Improve 0 (data labels)



Introduction

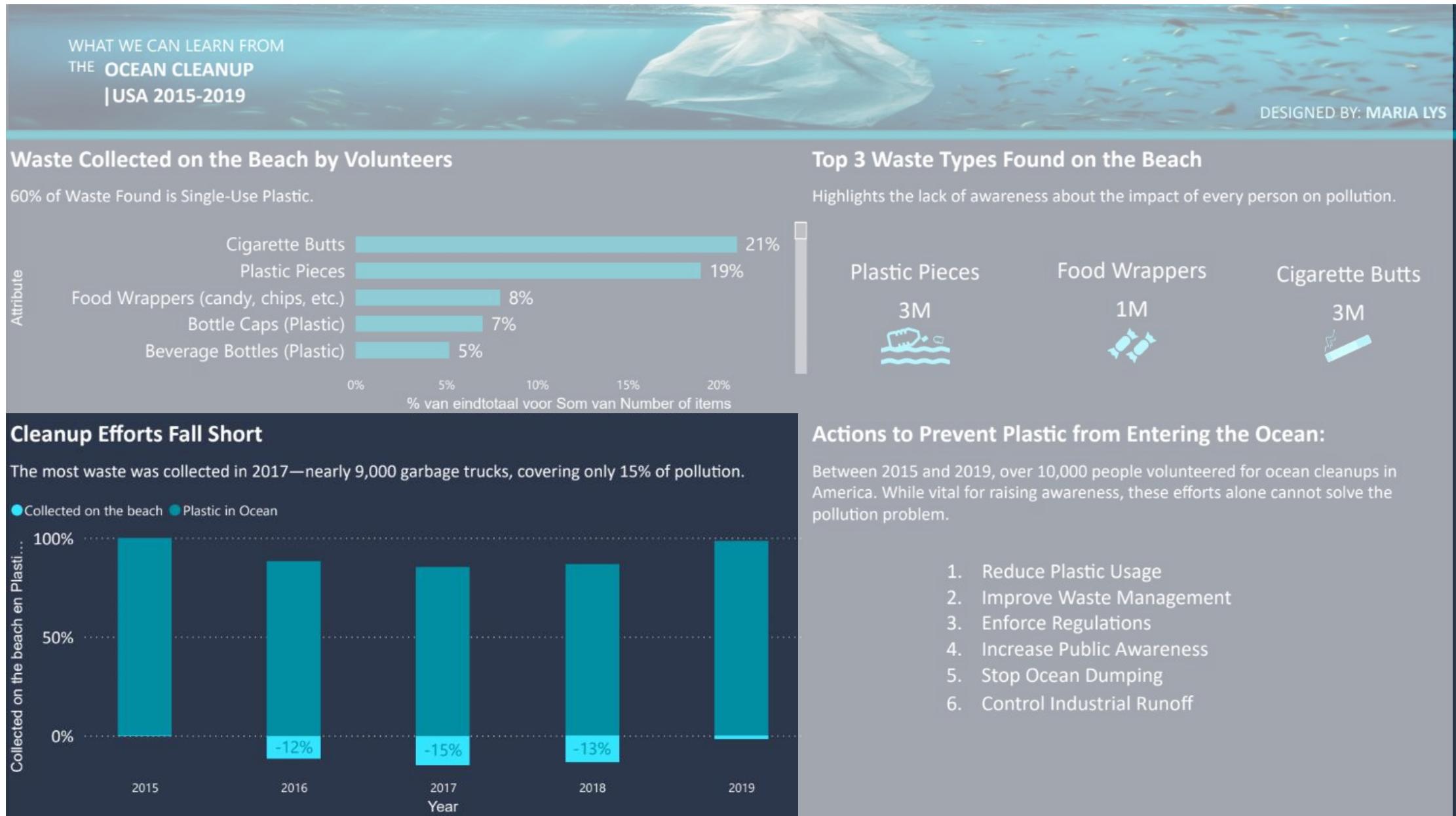
User

Smart

Beautiful

Conclusion

## Remove to Improve 1 (data labels)



Introduction

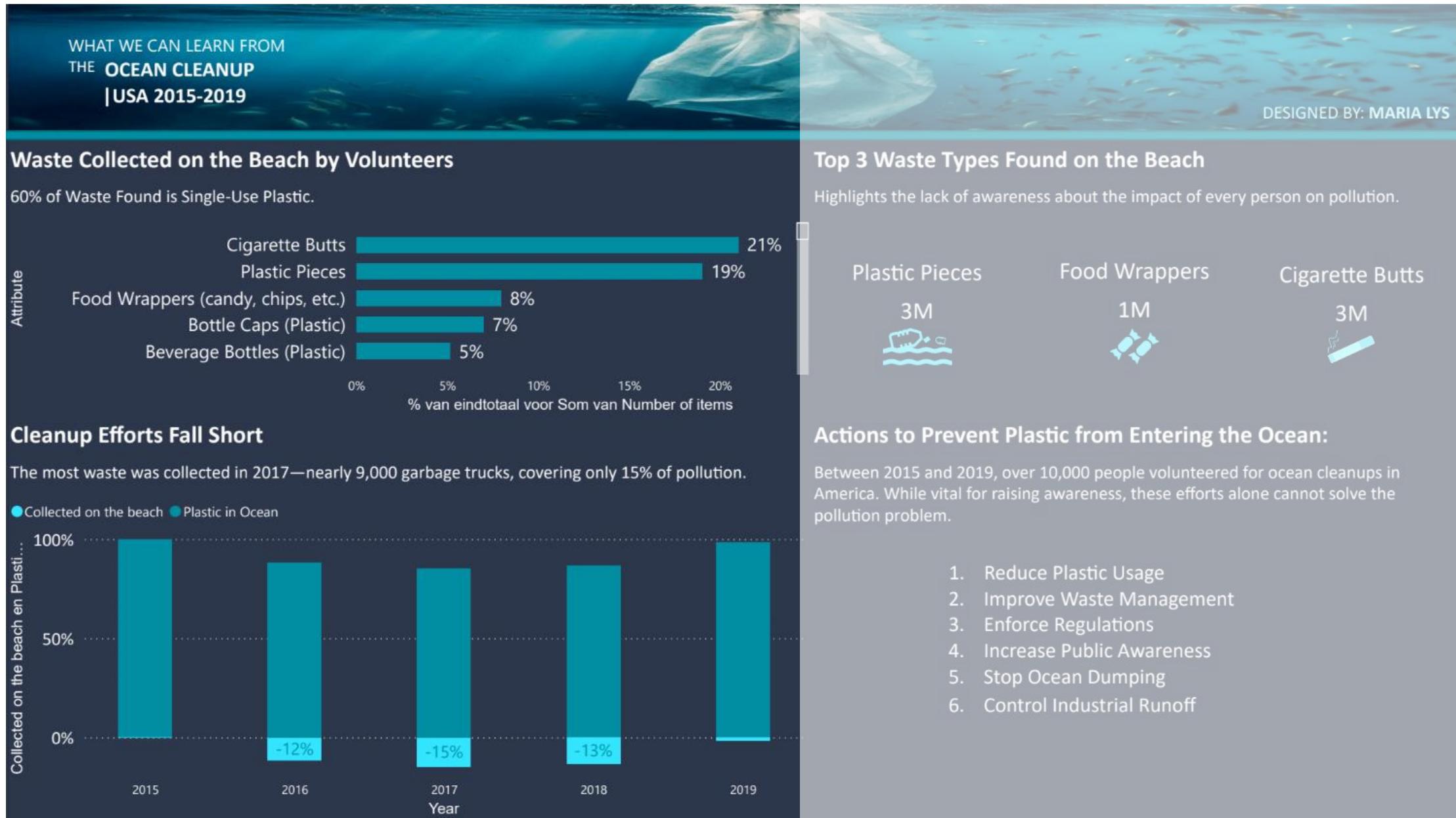
User

Smart

Beautiful

Conclusion

## Remove to Improve 0 (Axes names, values)



Introduction

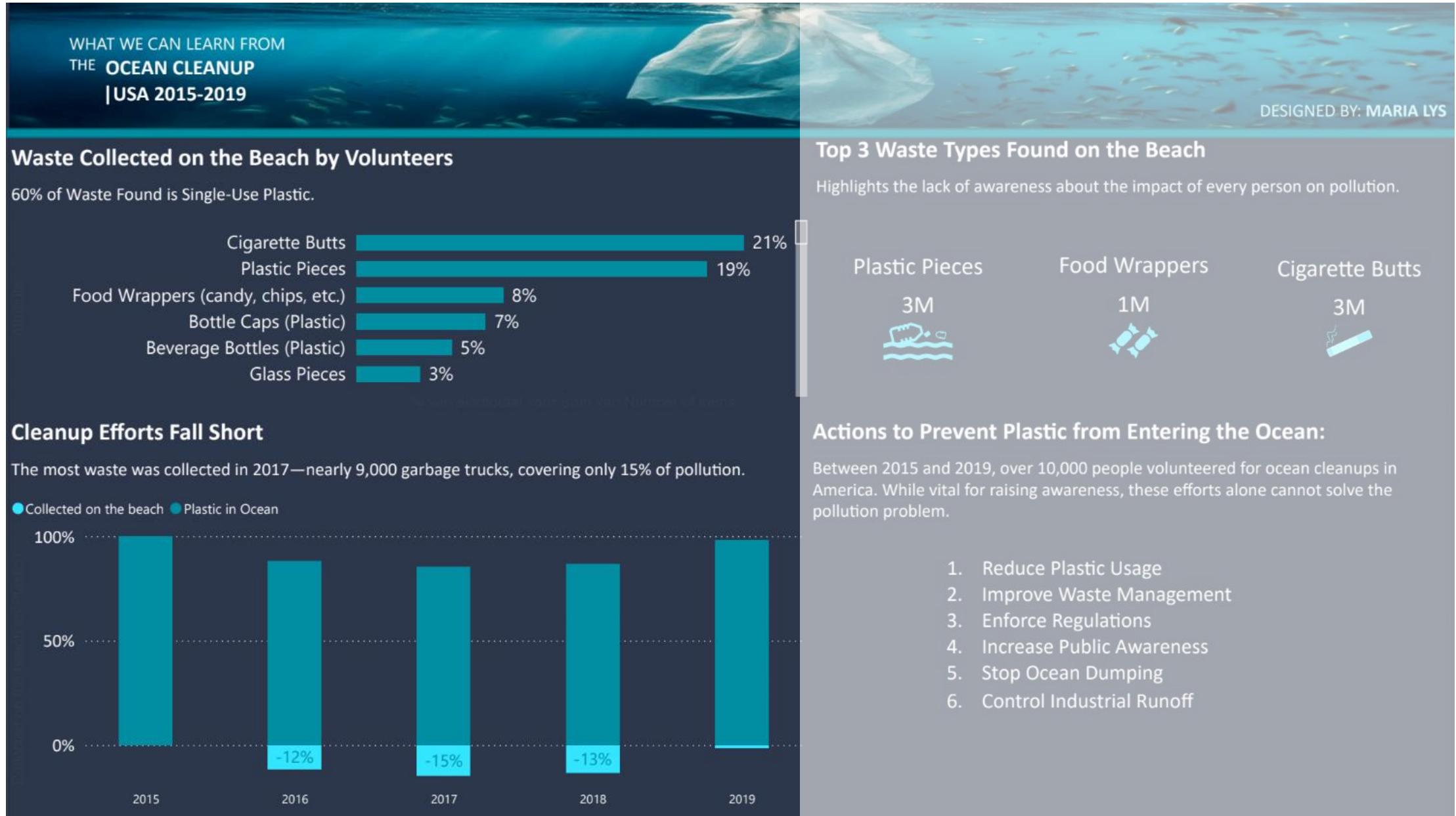
User

Smart

Beautiful

Conclusion

## Remove to Improve 2 (Axes names)



Introduction

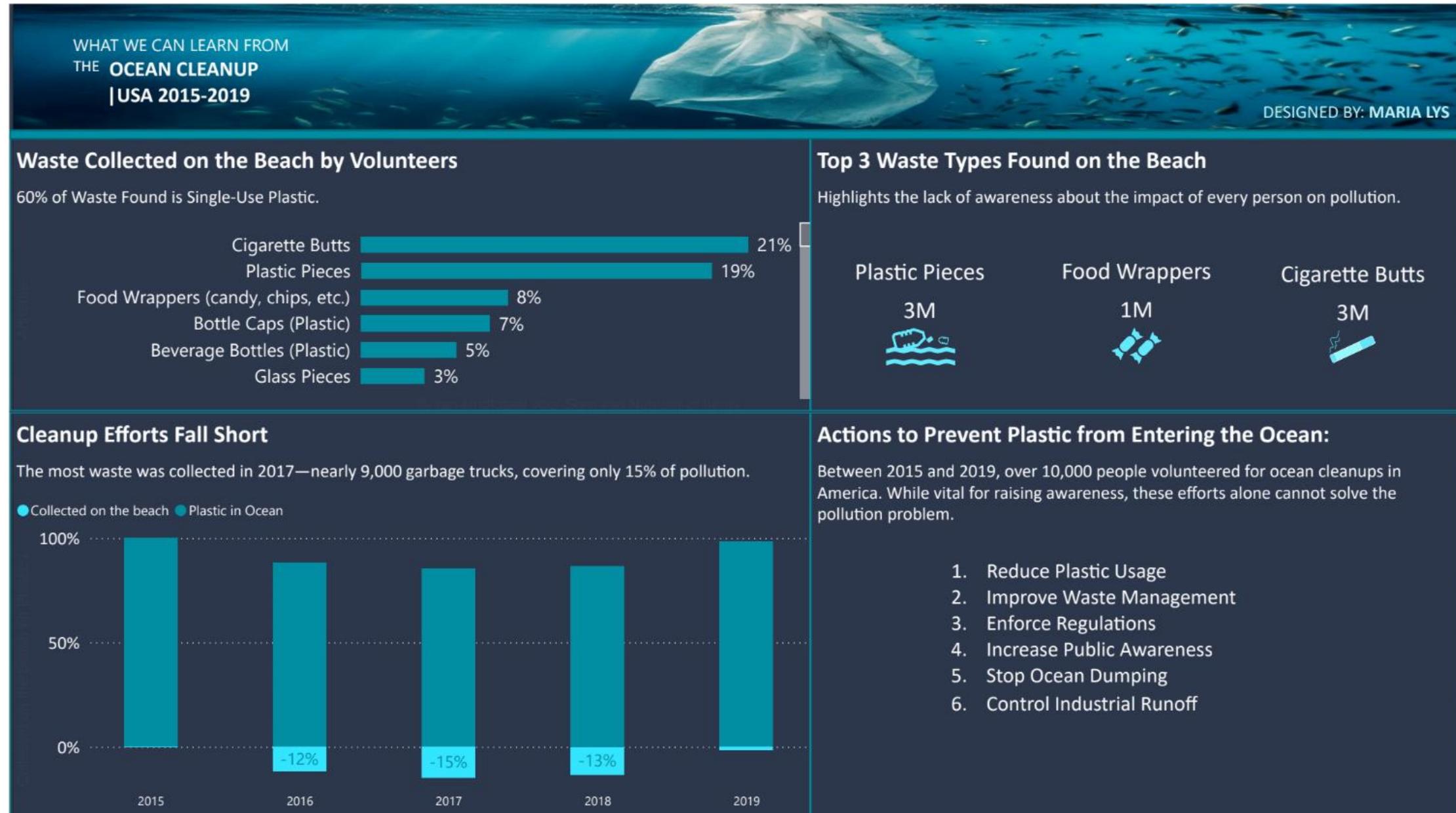
User

Smart

Beautiful

Conclusion

## Give It more Space 0



Introduction

User

Smart

Beautiful

Conclusion

## Give It more Space 1

WHAT WE CAN LEARN FROM  
THE OCEAN CLEANUP  
| USA 2015-2019

DESIGNED BY: MARIA LYS

**Waste Collected on the Beach by Volunteers**

60% of Waste Found is Single-Use Plastic.

Waste Type	Percentage
Cigarette Butts	21%
Plastic Pieces	19%
Food Wrappers (candy, chips, etc.)	8%
Bottle Caps (Plastic)	7%
Beverage Bottles (Plastic)	5%

**Top 3 Waste Types Found on the Beach**

Highlights the lack of awareness about each person's impact on pollution.

Waste Type	Quantity
Plastic Pieces	3M
Food Wrappers	1M
Cigarette Butts	3M

**Cleanup Efforts Fall Short**

The most waste was collected in 2017—nearly 9,000 garbage trucks, covering only 15% of pollution.

● Collected on the beach ● Plastic in Ocean

Year	Collected on the beach (%)	Plastic in Ocean (%)
2015	100%	0%
2016	~85%	~15%
2017	~75%	~25%
2018	~70%	~30%
2019	~65%	~35%

**Actions to Prevent Plastic from Entering the Ocean:**

Between 2015 and 2019, over 10,000 people volunteered for ocean cleanups in America. While vital for raising awareness, these efforts alone cannot solve the pollution problem.

1. Reduce Plastic Usage
2. Improve Waste Management
3. Enforce Regulations
4. Increase Public Awareness
5. Stop Ocean Dumping
6. Control Industrial Runoff

## Give It more Space 2



WHAT WE CAN LEARN FROM  
THE OCEAN CLEANUP  
| USA 2015-2019

DESIGNED BY: MARIA

**Waste Collected on the Beach by Volunteers**

60% of Waste Found is Single-Use Plastic.

Item	Percentage
Cigarette Butts	21%
Plastic Pieces	19%
Food Wrappers (candy, chips, etc.)	8%
Bottle Caps (Plastic)	7%

**Top 3 Waste Types Found on the Beach**

Highlights the lack of awareness about each person's impact on pollution.

Item	Quantity
Plastic Pieces	3M
Food Wrappers	1M
Cigarette Butts	3M

**Cleanup Efforts Fall Short**

The most waste was collected in 2017—nearly 9,000 garbage trucks, covering only 15% of pollution.

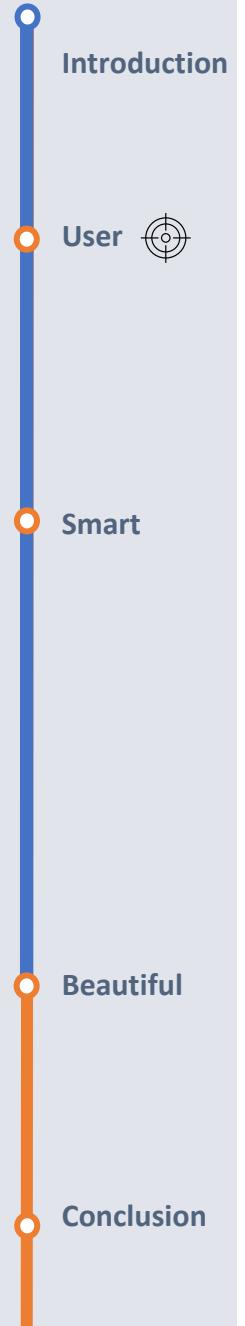
● Collected on the beach ● Plastic in Ocean

Year	Collected on the beach (%)	Plastic in Ocean (%)
2015	100	0
2016	~85	~15
2017	~80	~15
2018	~75	~13
2019	~70	~15

**Actions to Prevent Plastic from Entering the Ocean:**

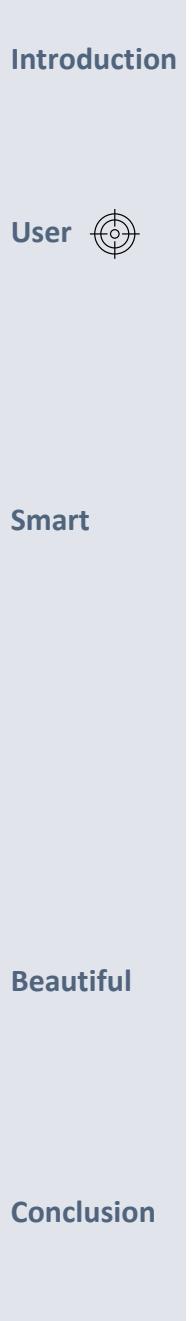
Between 2015 and 2019, over 10,000 people volunteered for ocean cleanups in the USA. While these efforts are vital for raising awareness, they alone cannot solve the pollution problem.

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## Power BI Theme

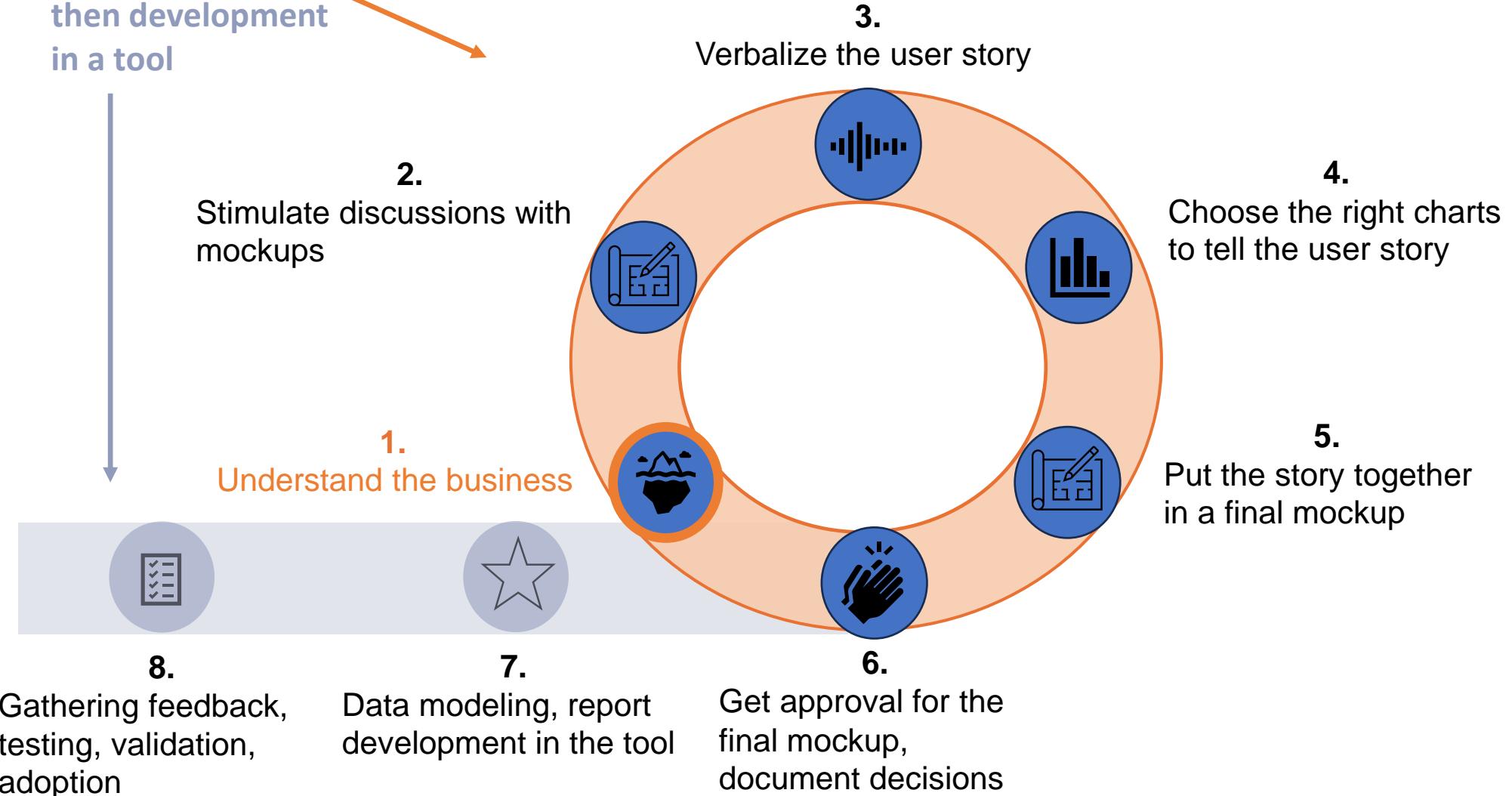




# Conclusion

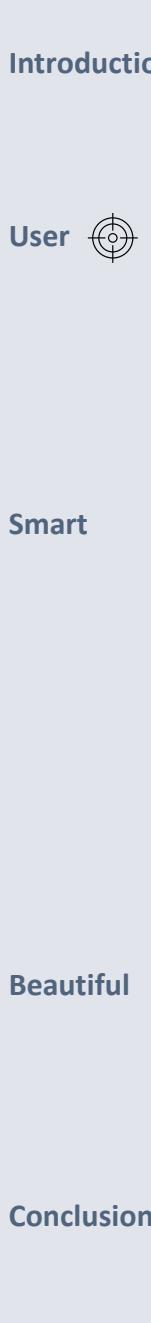


**First, design sprint,  
then development  
in a tool**





First, design sprint,  
then development  
in a tool



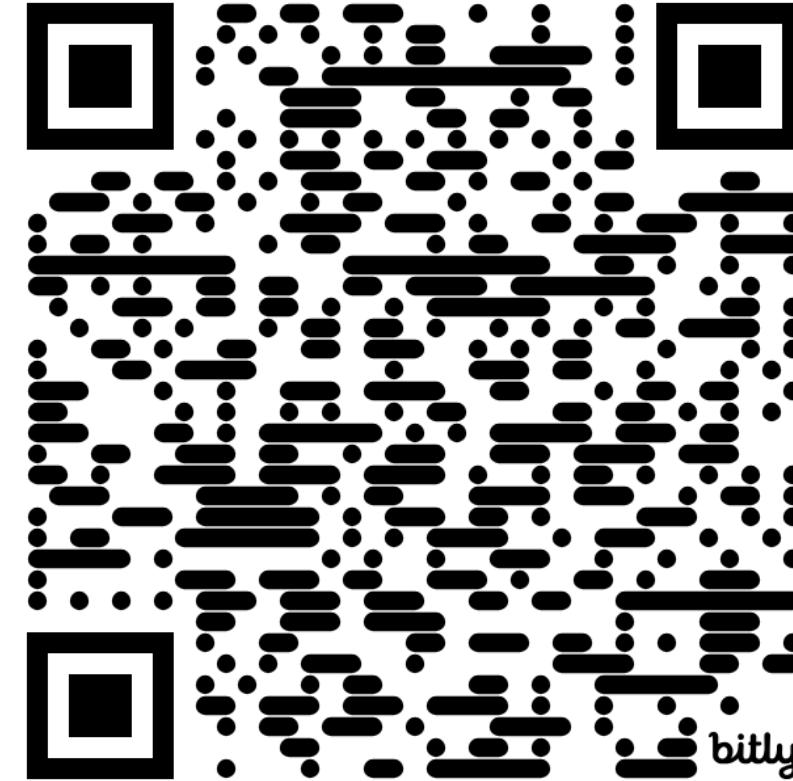
## Benefits of a user-centered approach:

- Better adoption
- Time-saving
- Co-creation
- Early testing & iteration
- The report is used

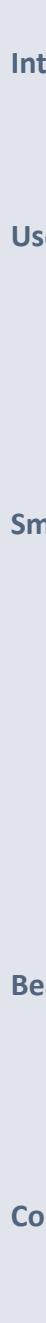
# Thank you, partners



# Session Feedback



[https://bit.ly/dMC2024\\_SessionFeedback](https://bit.ly/dMC2024_SessionFeedback)



Introduction

User



Smart

Beautiful

Conclusion

# Thank you!