

# Advanced visualizations

DATA VISUALIZATION IN TABLEAU



**Maarten Van den Broeck**  
Content Developer, DataCamp

# The principles of an infographic

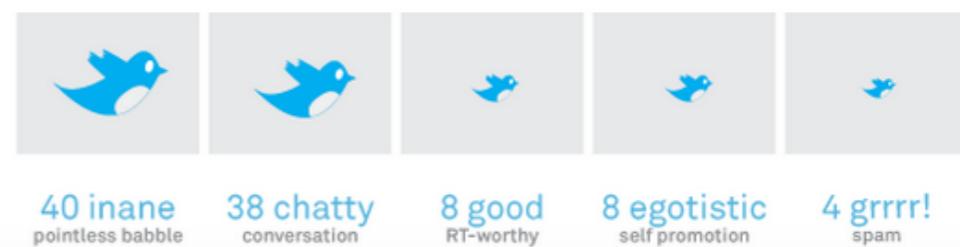
## Well-designed - colorful - useful

- Easy to follow flow and design
- Minimum text, maximum readability
- Accent on key data points and elements
- Coherent use of color and scales

If the Twitter community were 100 people



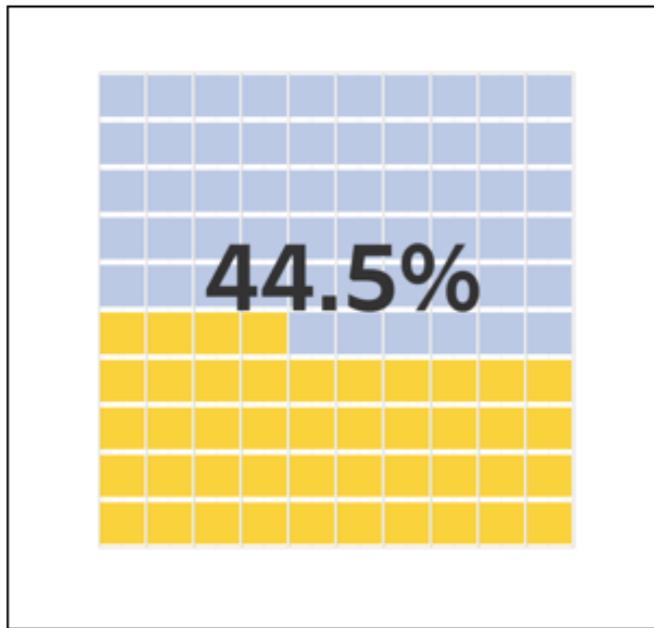
The Average 100 Tweets



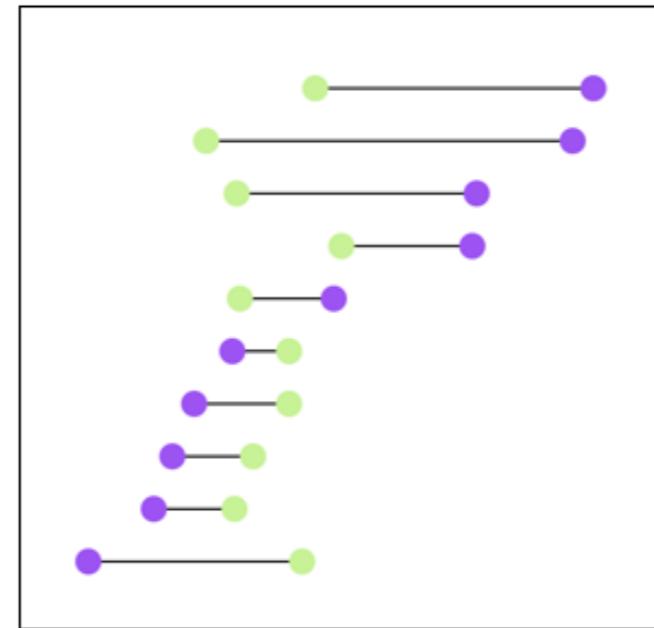
<sup>1</sup> David McCandless, <https://informationisbeautiful.net/2009/if-twitter-was-100-people/>

# Meet our new charts

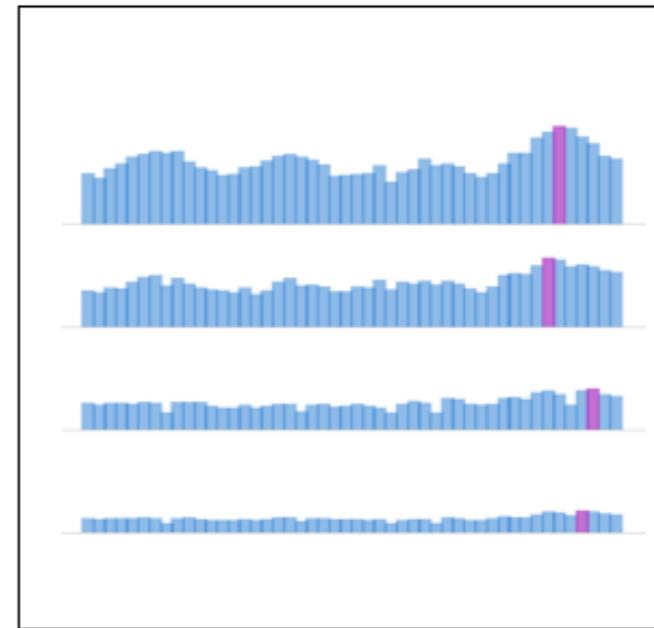
Waffle chart



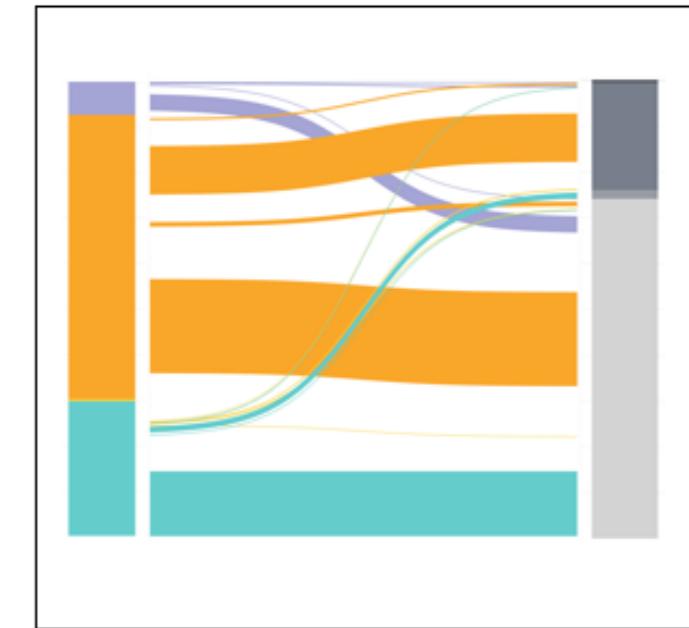
DNA chart



Sparklines



Sankey Diagram



## An alternative for:

- Stacked 100% bar.
- Pie chart.

## An alternative for:

- Bar charts
- Box plot or histogram.
- Gantt Bar.

## An alternative for:

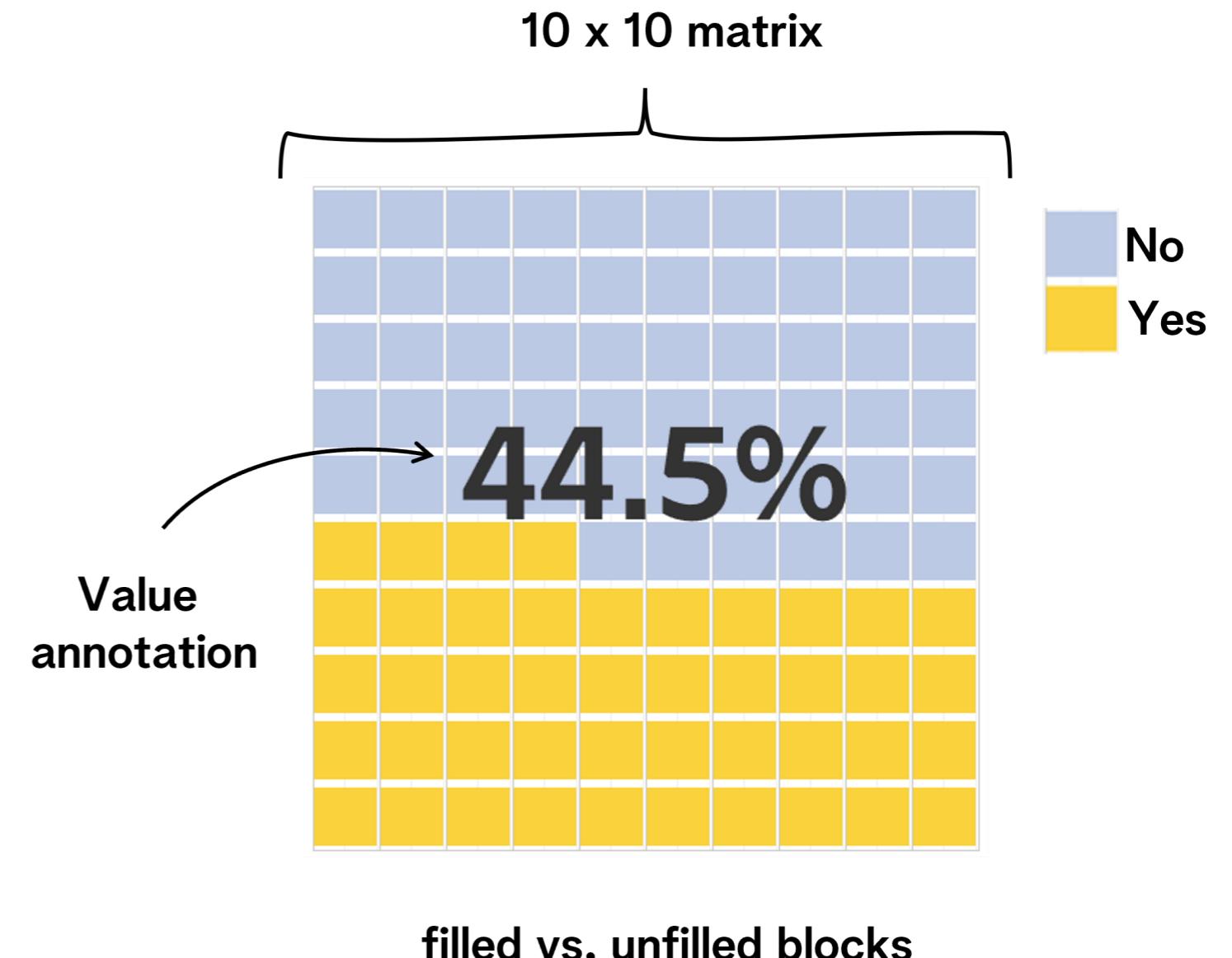
- Plain tables.
- Large charts.
- Tooltip.

## An alternative for:

- Drill-downs.
- Hierarchies.
- Bar chart.
- Coordinate plots.

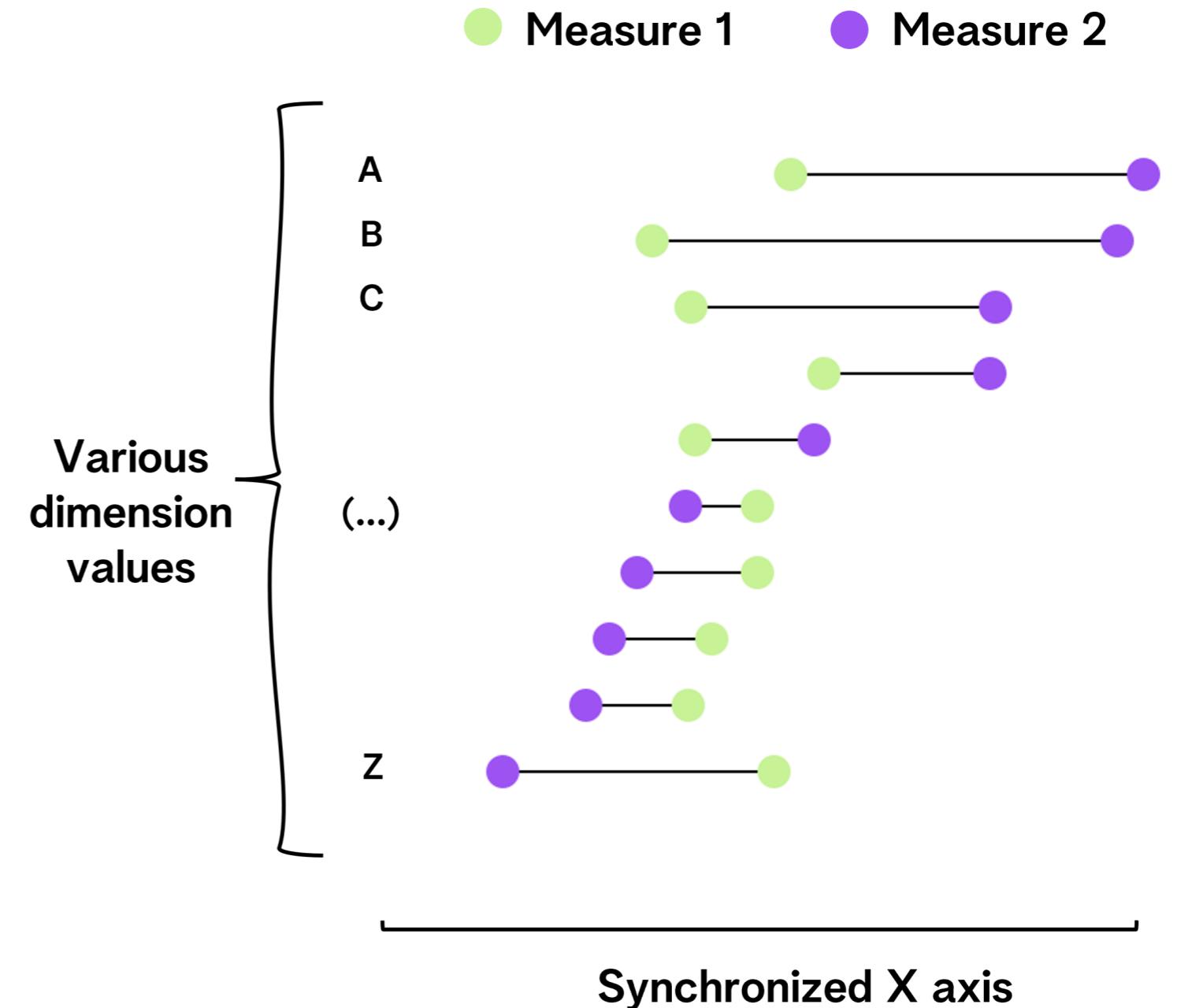
# Waffle chart

- N on N matrix ( $10 \times 10$ ,  $100 \times 100$ ...)
- Visualizing part of the total
- A good alternative for:
  - Stacked bar charts
  - Pie/donut charts
- Can be turned into a pictogram



# DNA (dumbbell) chart

- Excellent for visualizing ranges and measuring the gap
- Requires:
  - Clear axis or data points labeling
  - X-axis synchronization
- A good alternative for:
  - Comparison charts (e.g. bar charts)
  - Distribution charts (e.g. box plots)

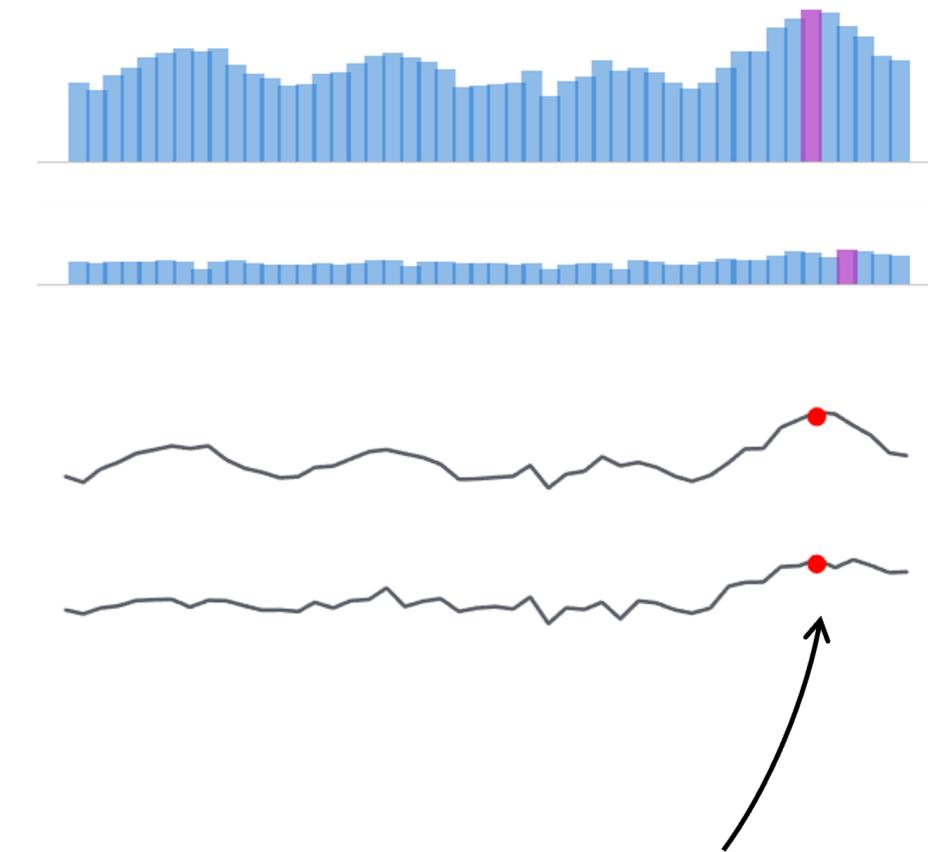


# Sparklines

- Tiny, accompanying charts explaining high-level trend
- Typically, line or bar charts with time-series
- Minimalistic design, focus on key data points e.g., minimum or maximum
- Not ideal for precision and exact values
- A good idea for a tooltip chart

Synchronized  
Y axis

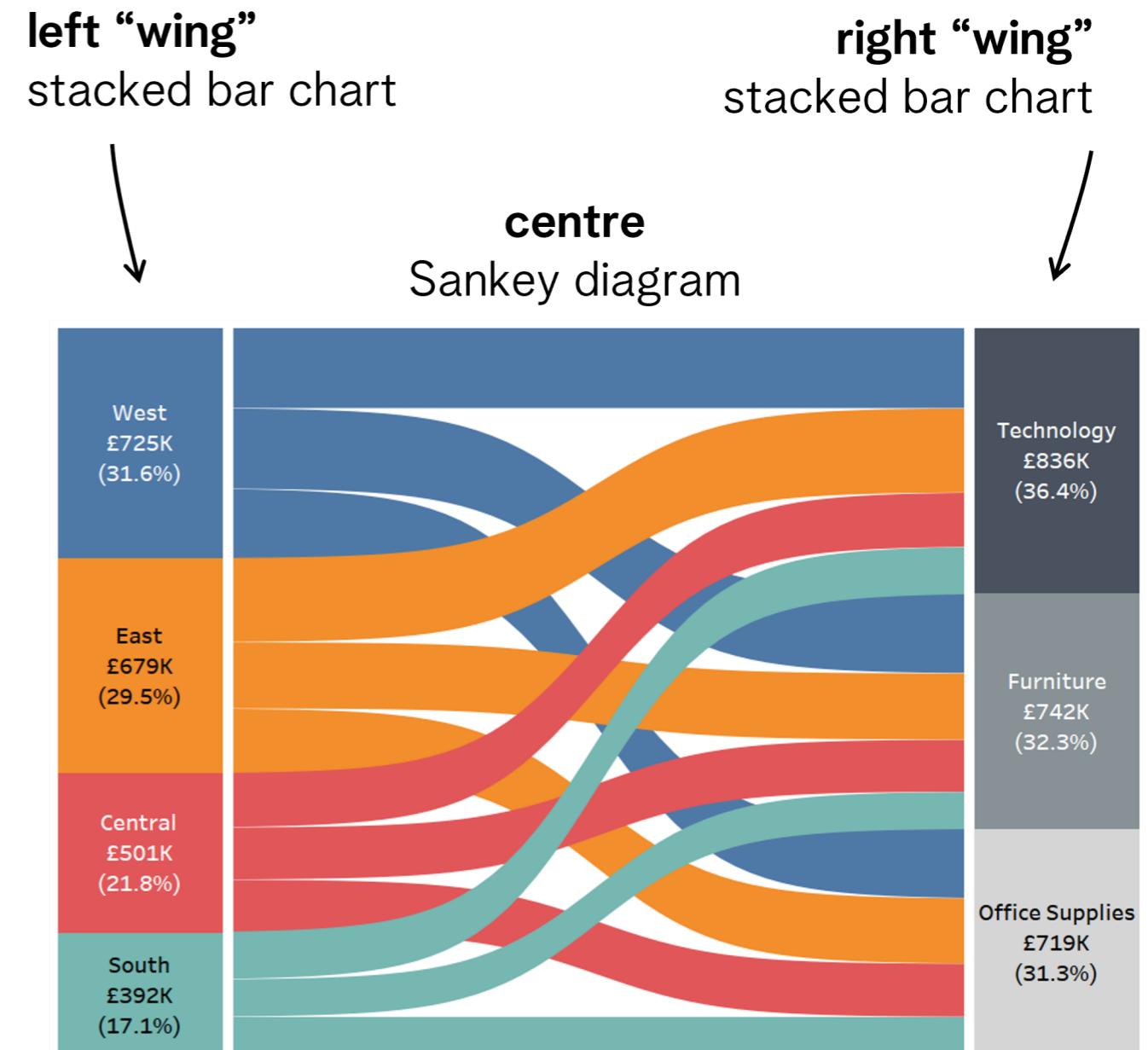
Minimalistic design – with accents



accentuated data point

# Sankey Diagram

- Flow of one set of values to another
- Many-to-many mapping on two (or more) categorical dimensions
- Nodes (in the "wings") and links (center)
- A good alternative for:
  - Bar charts
  - Pie charts
- Draw attention to the largest links
- Complex to build, not suited for precision chart reading



# Extra tips and tricks on advanced visualizations

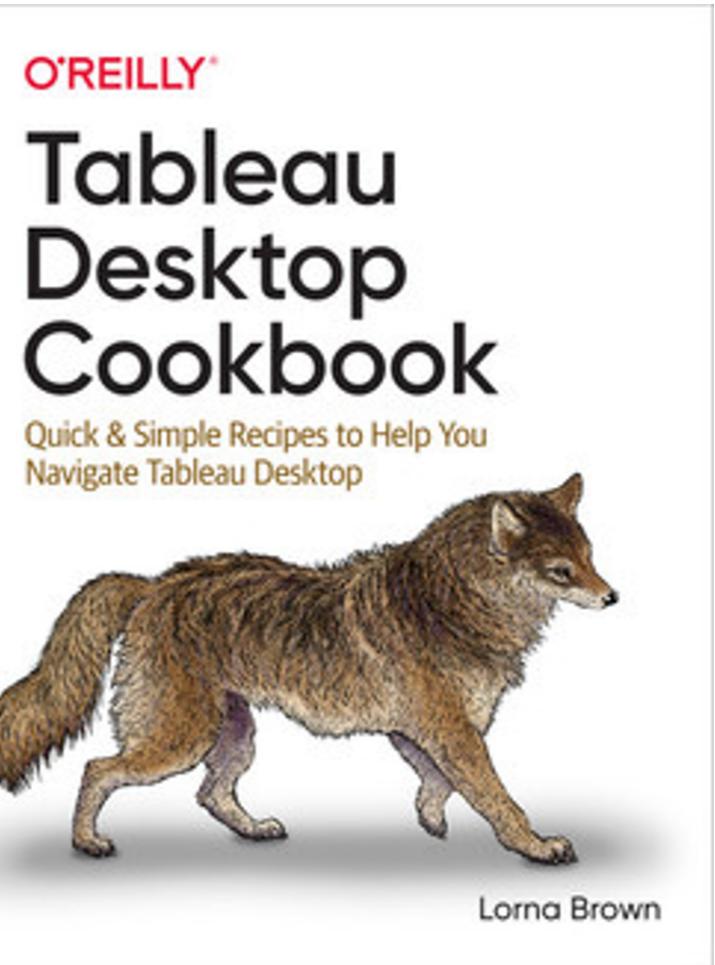
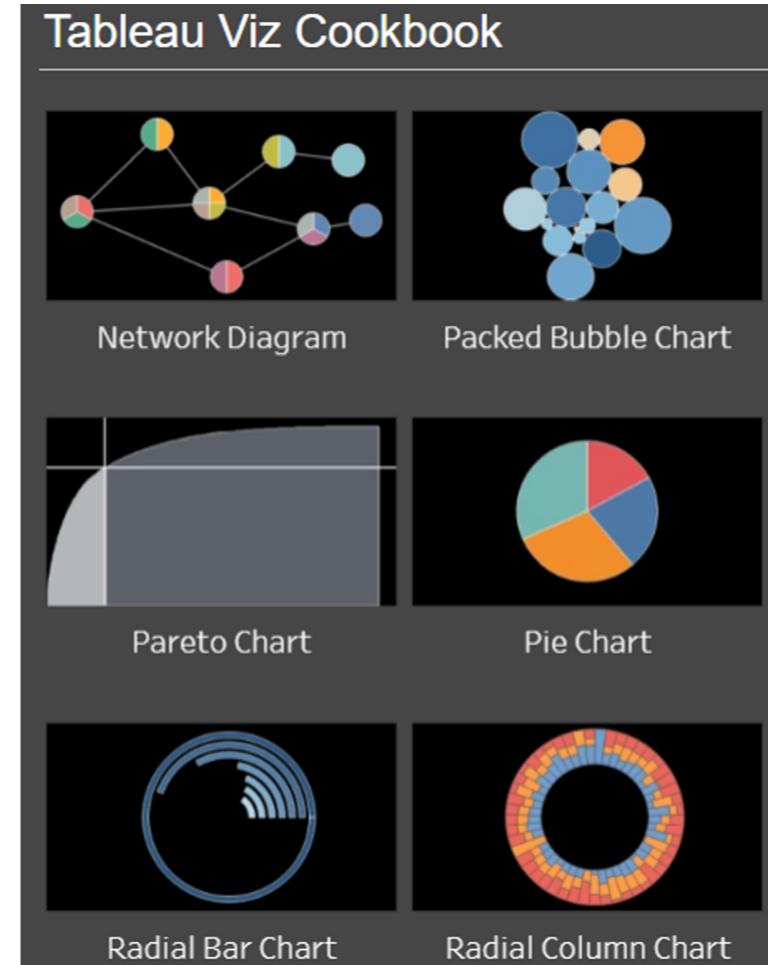
## Extensive use of Tableau features:

- *Measure Names* and *Measure Values*
- Dual axis
- Marks card and chart types

## Combining charts:

- Overlaying of various charts
- Assembling charts into a themed dashboard

## Chart "cook-books"



<sup>1</sup> <https://public.tableau.com/views/CookBook/VizCookbook>

# **Let's practice!**

**DATA VISUALIZATION IN TABLEAU**

# Building impressive charts

DATA VISUALIZATION IN TABLEAU



Full Name

Instructor

# **Let's practice!**

**DATA VISUALIZATION IN TABLEAU**

# Bringing it all together

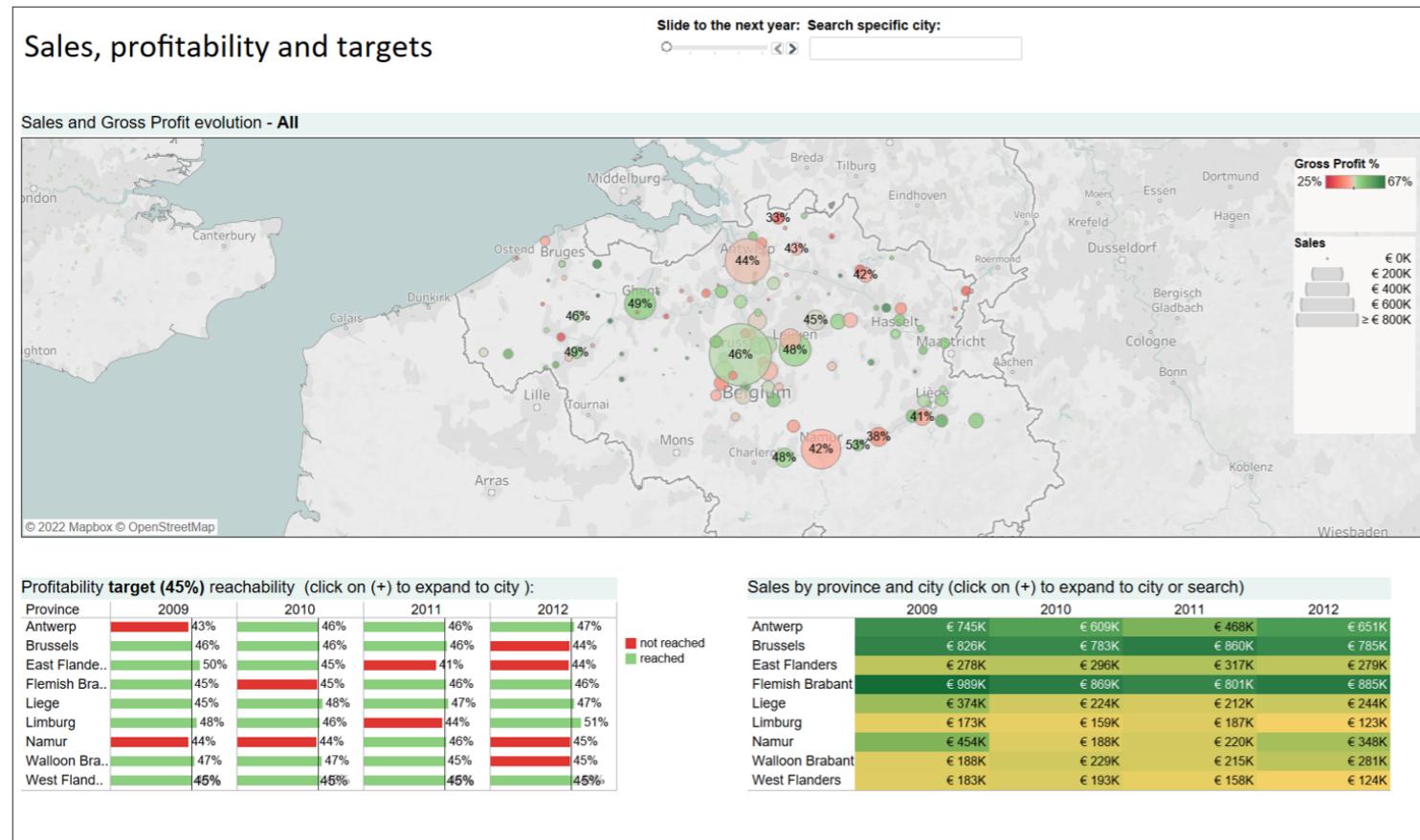
DATA VISUALIZATION IN TABLEAU



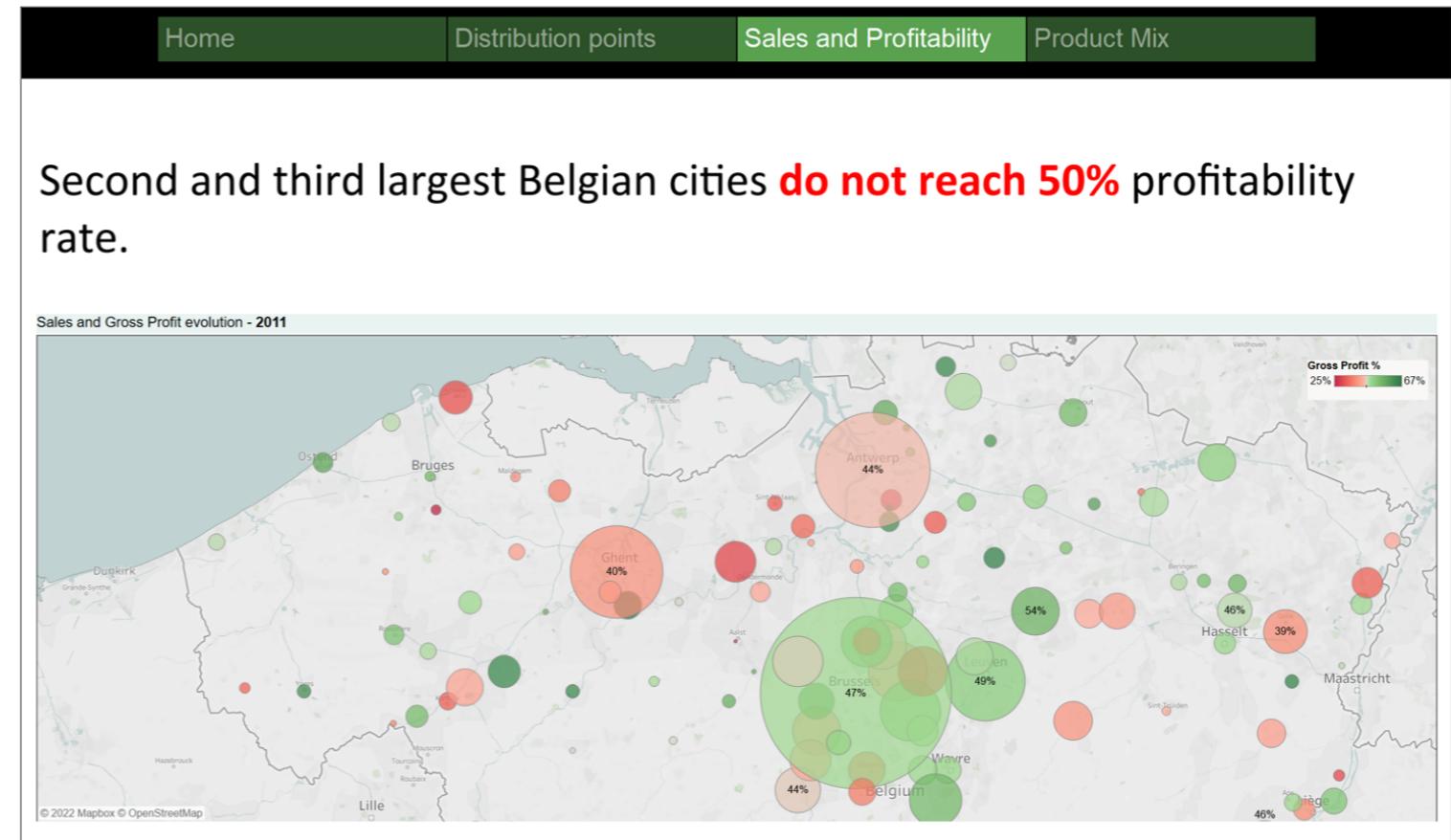
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Content Developer, DataCamp

# Dashboarding vs. storytelling

## Dashboard:



## Story:

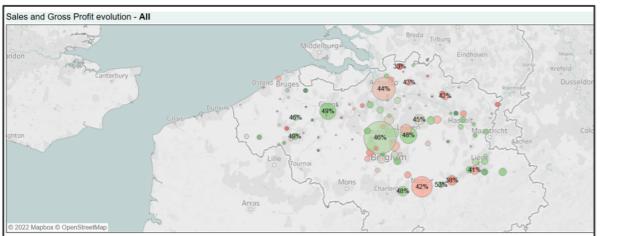


- Self-service analytics, with filters
- Exploratory Data Analysis (a lot of detail)

- Attention on insights, concrete data points
- Slide deck, presentation (high level)

# From worksheets...

# Worksheets



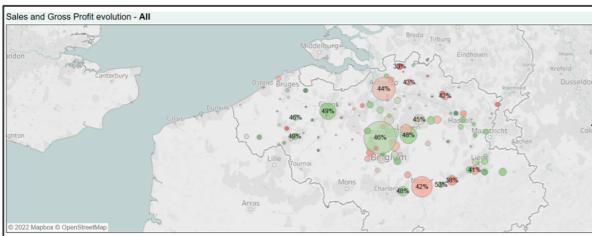
Sales by province and city (click on (+) to expand to city or search)				
	2009	2010	2011	
Antwerp	€ 745K	€ 609K	€ 468K	
Brussels	€ 826K	€ 783K	€ 860K	
East Flanders	€ 278K	€ 296K	€ 317K	
Flemish Brabant	€ 989K	€ 869K	€ 801K	
Liege	€ 374K	€ 224K	€ 212K	
Limburg	€ 173K	€ 159K	€ 187K	
Namur	€ 454K	€ 188K	€ 220K	
Walloon Brabant	€ 188K	€ 229K	€ 215K	
West Flanders	€ 183K	€ 193K	€ 158K	



Province	2009	2010	2011
Antwerp	43%	46%	46%
Brussels	46%	46%	46%
East Fland...	50%	45%	41%
Flemish Bra...	45%	45%	46%
Liege	45%	48%	47%
Limburg	48%	46%	44%
Namur	44%	44%	46%
Walloon Bra...	47%	47%	45%
West Fland...	45%	45%	45%

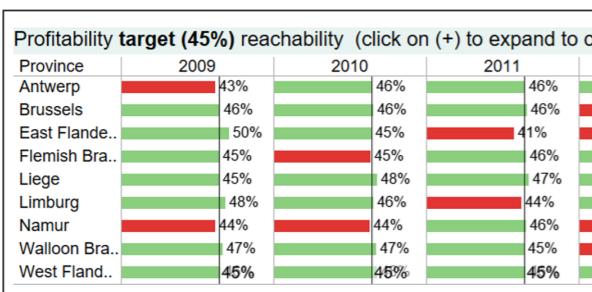
# From worksheets to dashboards...

## Worksheets

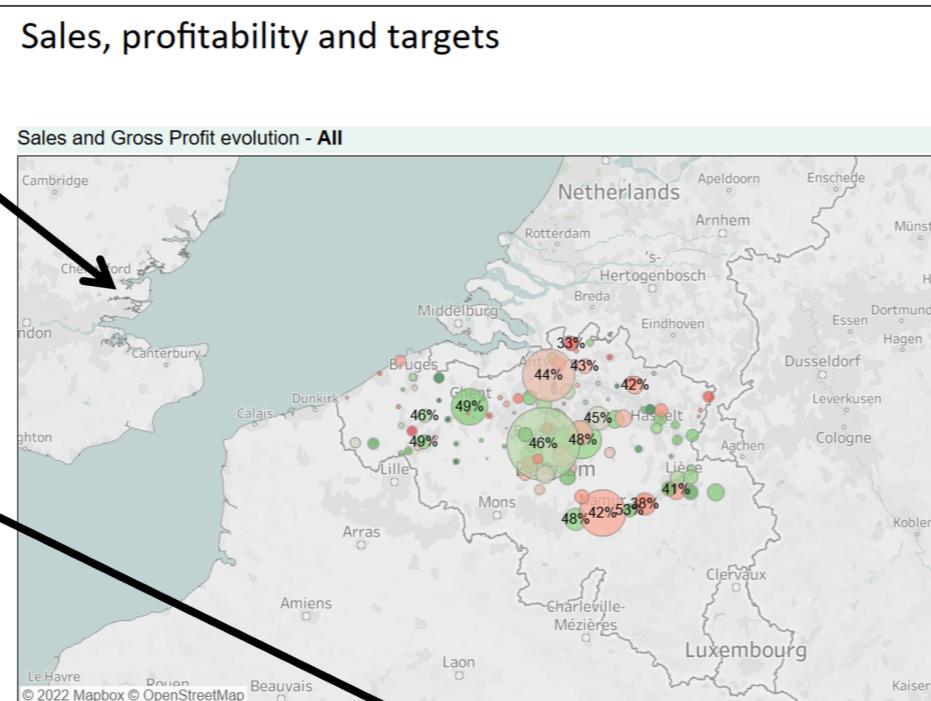


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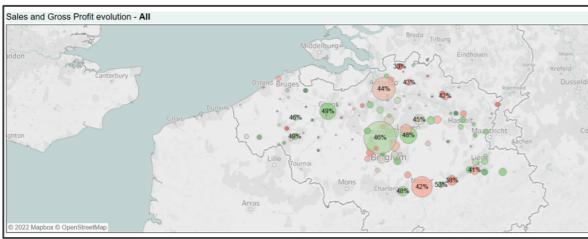


## Dashboard



# From worksheets to dashboards and data stories.

## Worksheets



Sales by province and city (click on (+) to expand to city or search)

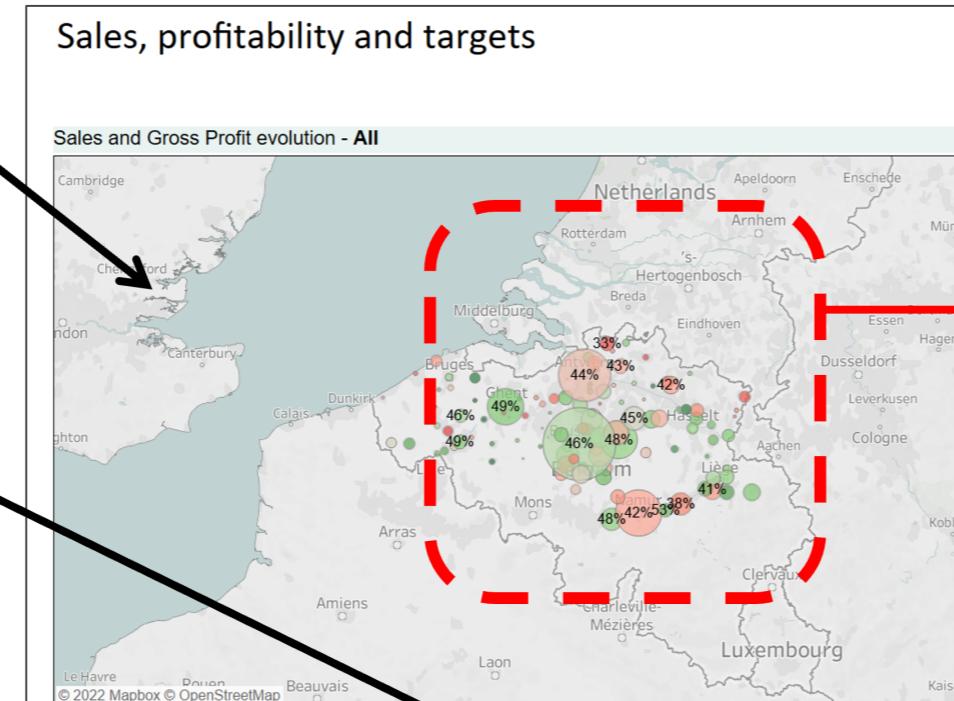
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Profitability target (45%) reachability (click on (+) to expand to city or search)

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Liege	45%	48%	47%
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Namur	44%	44%	46%
Walloon Bra..	47%	47%	45%
West Fland..	45%	45%	46%

## Dashboard



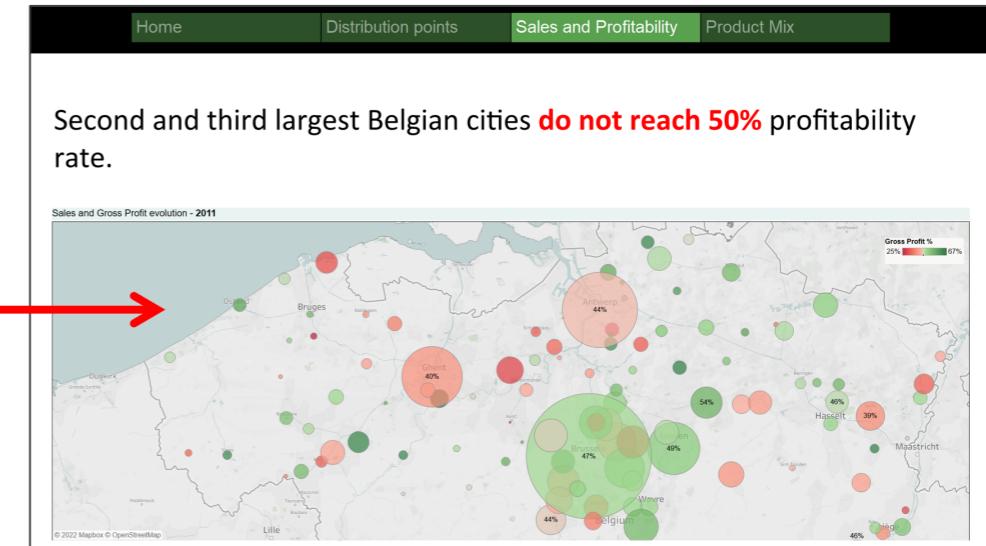
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Province	2009	2010	2011	2012
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Flemish Bra..	45%	45%	46%	46%
Liege	45%	48%	47%	47%
Limburg	48%	46%	44%	51%
Namur	44%	44%	46%	45%
Walloon Bra..	47%	47%	45%	45%
West Fland..	45%	45%	45%	45%

Sales by province and city (click on (+) to expand to city or search)

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## Story



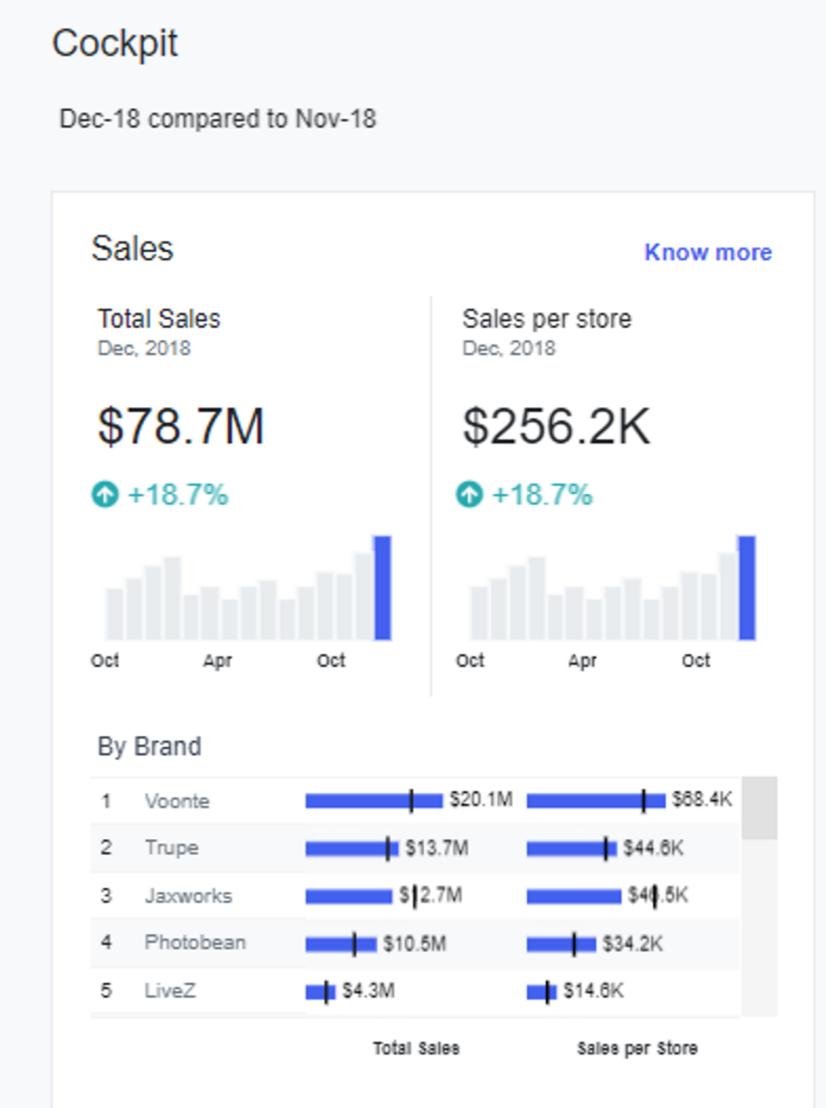
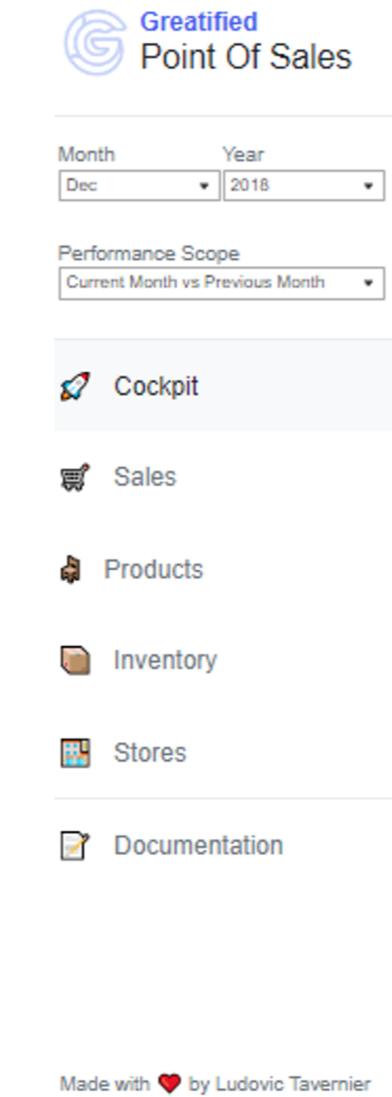
# Looks matter - pretty and simple catches the eye!

## Appealing design:

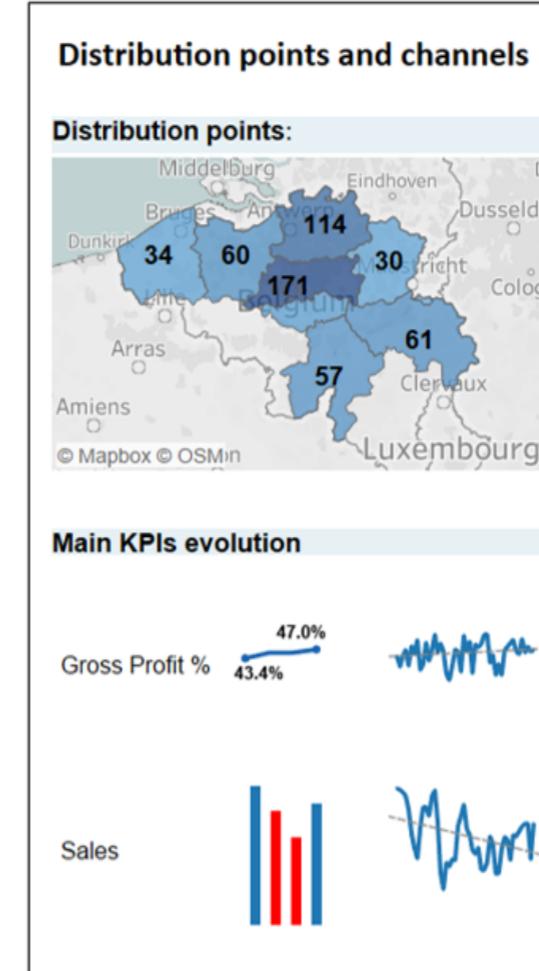
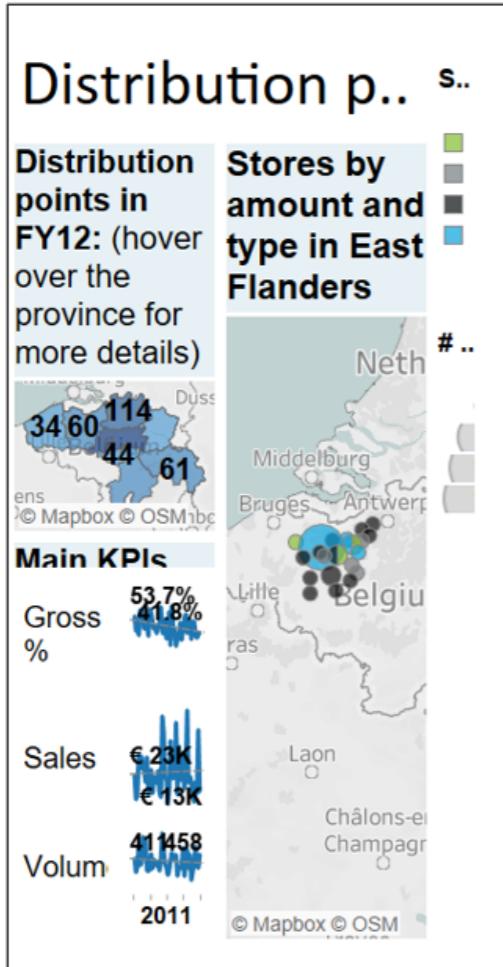
- Branding and styling
- Efficient use of space
- Self-explanatory (labels, titles)

## Consider:

- Start small and expand
- Bounce ideas by non-data people
- Test meticulously and document



# Design for any device



- Dashboard not designed for a mobile device
- Mobile device ready dashboard

# Don't lose your audience!

- Work on your dashboard and story performance
- Aim at < 10 seconds of load time
- Identify the "heaviest" visualizations
- Limit the number of data marks
- Consider creating a data extract



<sup>1</sup> <https://www.datacamp.com/courses/connecting-data-in-tableau>

# **Let's practice!**

**DATA VISUALIZATION IN TABLEAU**

# Storytelling like a pro

DATA VISUALIZATION IN TABLEAU



**Agata Bak-Geerinck**  
Senior Data Analyst, Telenet

# **Let's practice!**

**DATA VISUALIZATION IN TABLEAU**

# Congratulations!

## DATA VISUALIZATION IN TABLEAU

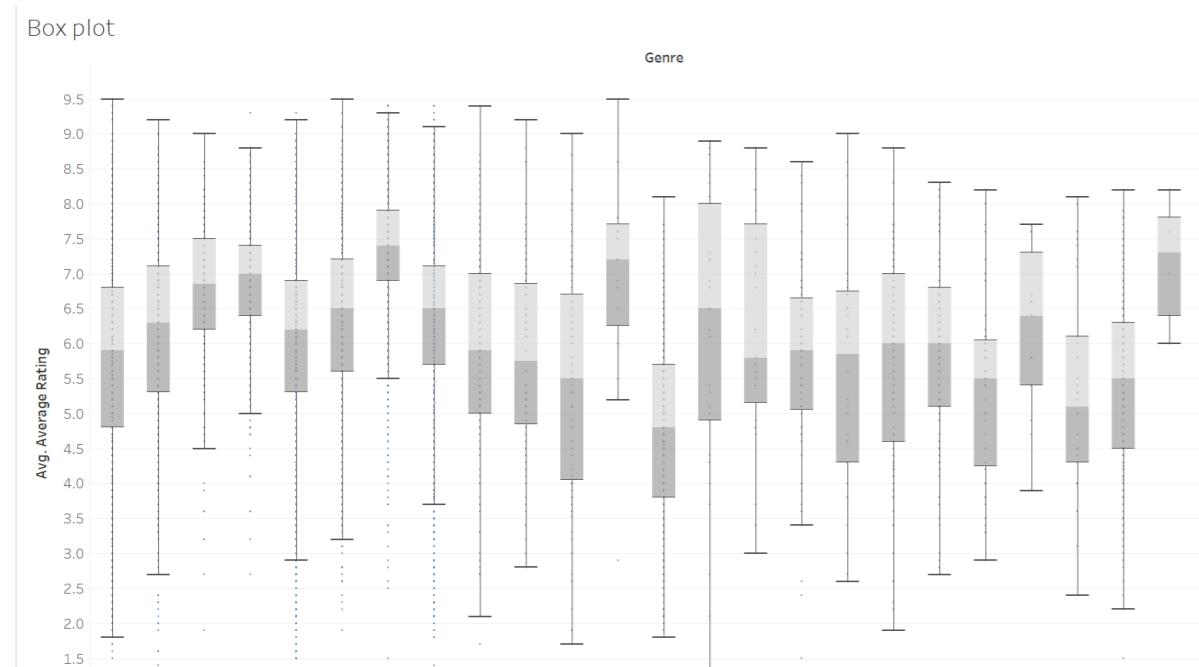


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# What you've learned

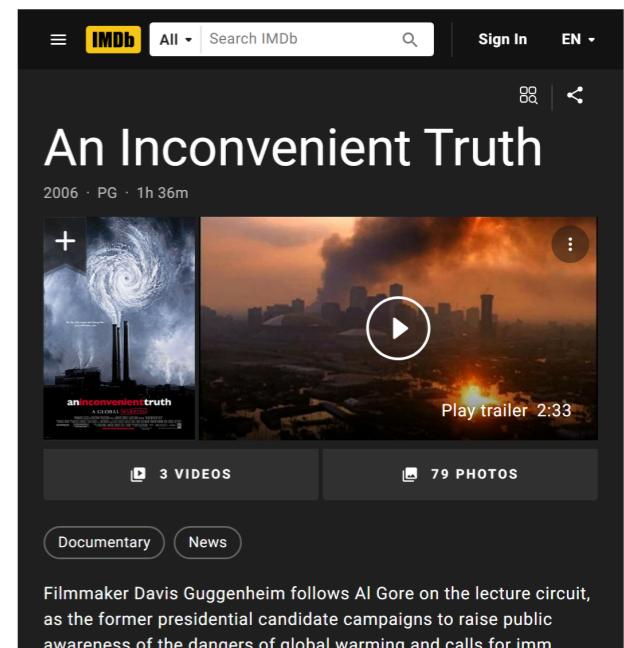
## Chapter 1

- *Show Me* charts
- Basic and intermediate visualizations
- Scatter plot, waterfall chart, box plots, etc.



## Chapter 2

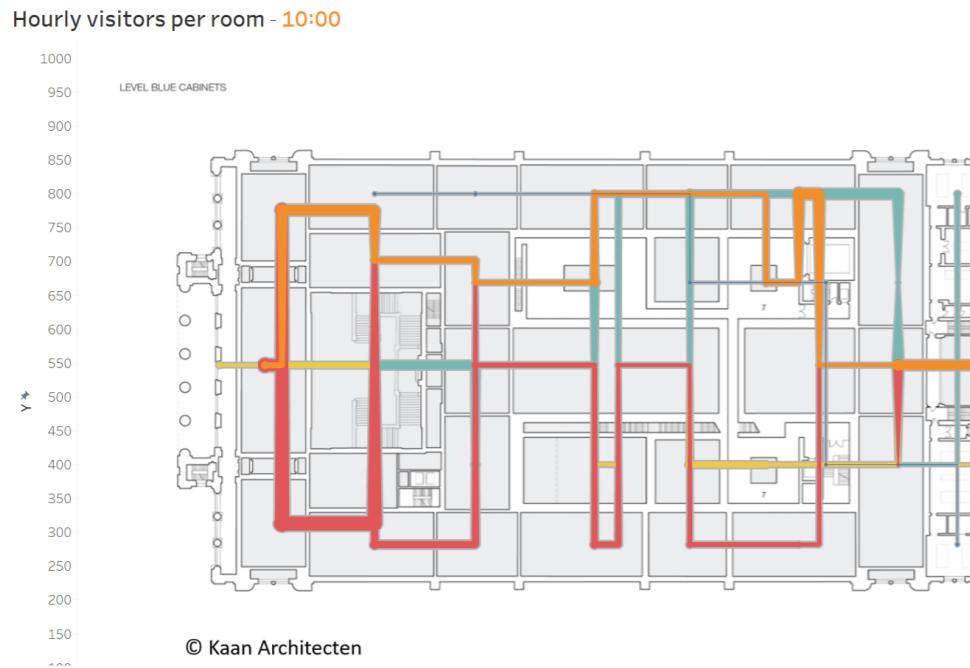
- Best practices in data visualization
- Animating the charts
- Adding interactivity elements



# What you've learned

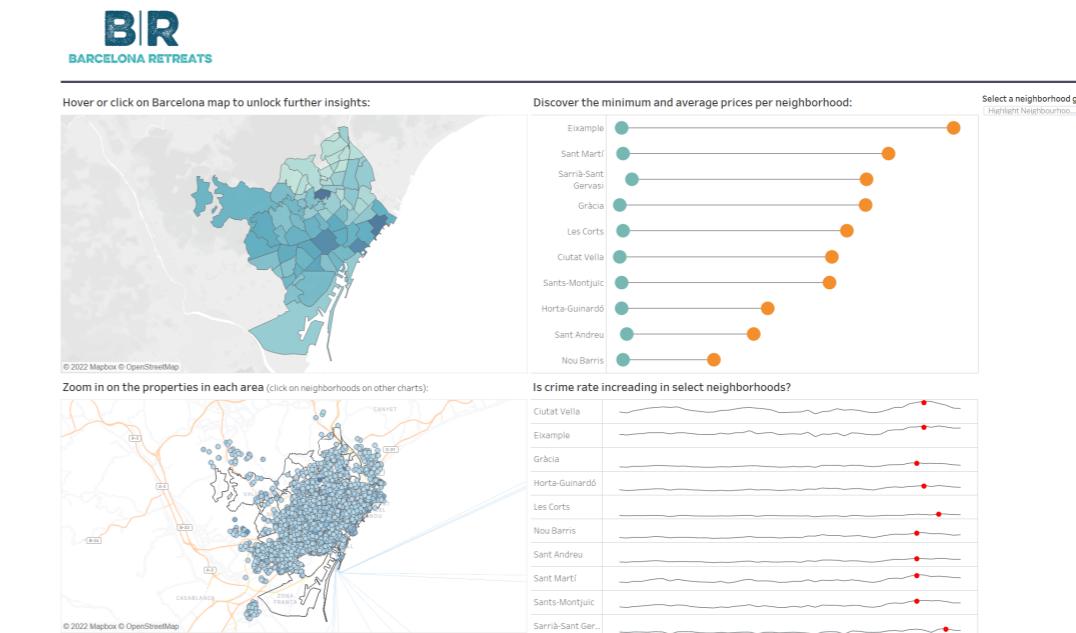
## Chapter 3

- Digital cartography in Tableau
- Working with geographical maps
- Custom background mapping



## Chapter 4

- Infographic-worthy charts
- Assembling a neat dashboard
- Working with Tableau data stories



# Thank you!

DATA VISUALIZATION IN TABLEAU