



Northwestern
University

Introduction to Data Visualization & Data Storytelling

Week 1



*How excited are
you?*



AGENDA



- Introductions
- Course Structure
- Syllabus & Software
- Assignment #1
- Intro to data visualization/data storytelling
- Exercise



*Let's get to
know each other!*

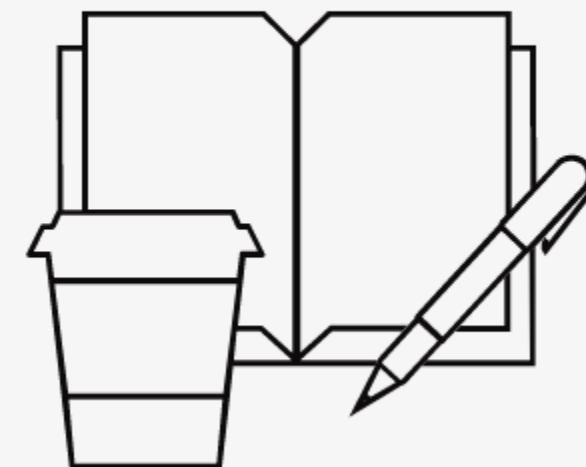


Let's get to know each other!

- Name
- Ideal job
- Hobbies
- Tell us something surprising about you!



Syllabus



POLL

*Rate your data
visualization skills*

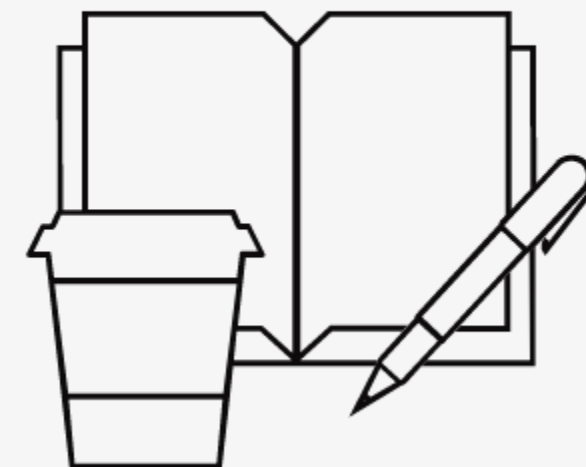


Assignment #1





Labs





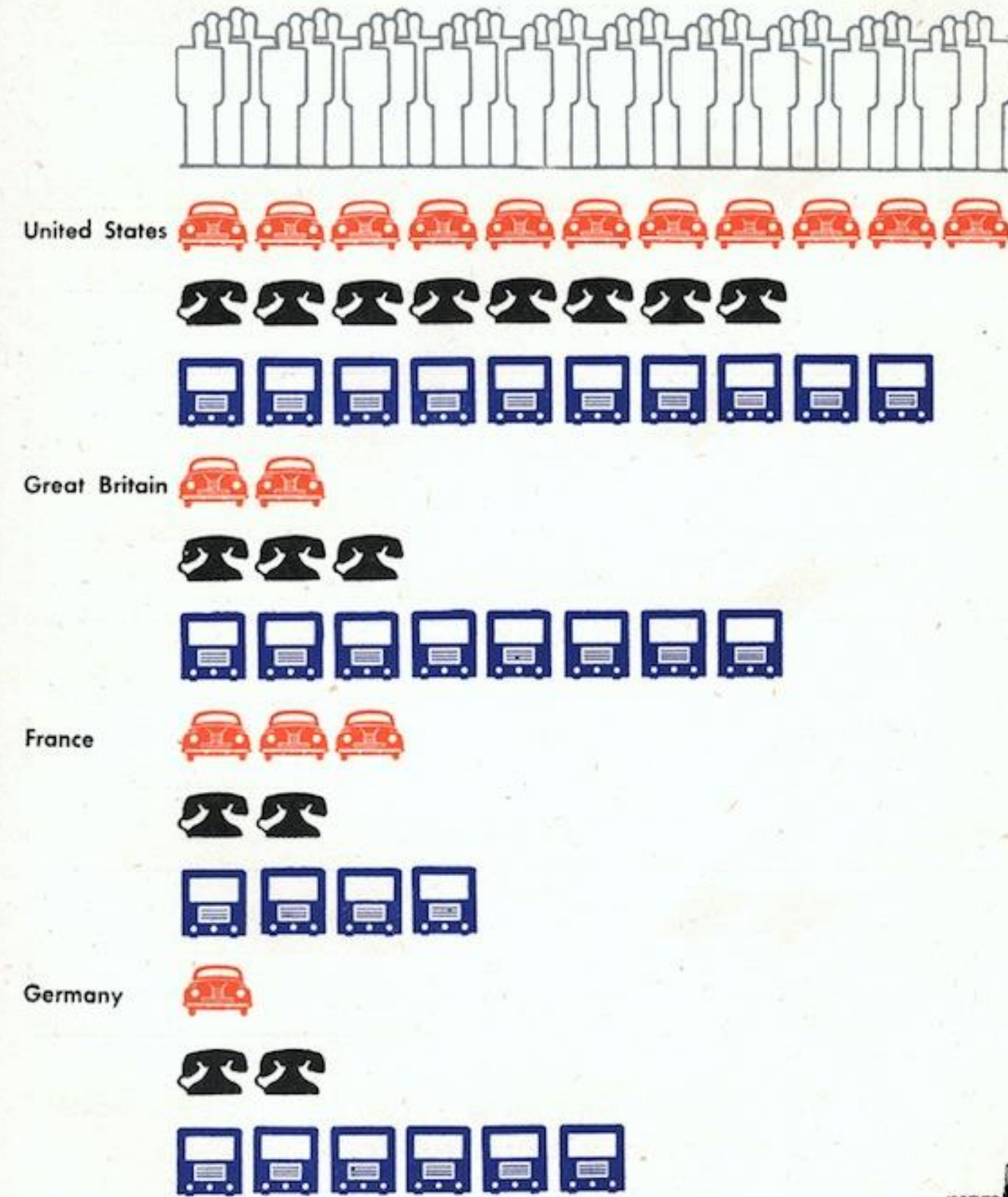
Short break!

We start again in 10 minutes...



Motor Cars, Telephones, Radio Sets 1937

per 50 population



Britain is close to America in radio sets per head, but in motor cars and telephones European countries lag far behind American standards.



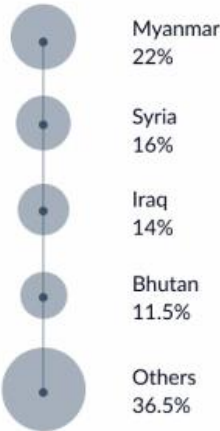
RESETTLED

The journey of refugees who found a new home thanks to the UNHCR Resettlement Program.

"I have travelled twice before in my life, but the last two times we travelled we were escaping. This time I am going to live a new life." Nine-year-old Mahmoud fled the conflict in Syria to Egypt. Traumatized by the ordeal, he was later resettled with his family to Sweden.

Mahmoud is determined to make the most of his new life. So are many other refugees who benefited from the UNHCR Resettlement Program. This visualisation illustrates the journey of 968,425 humans who found a new home in the past 7.5 years.

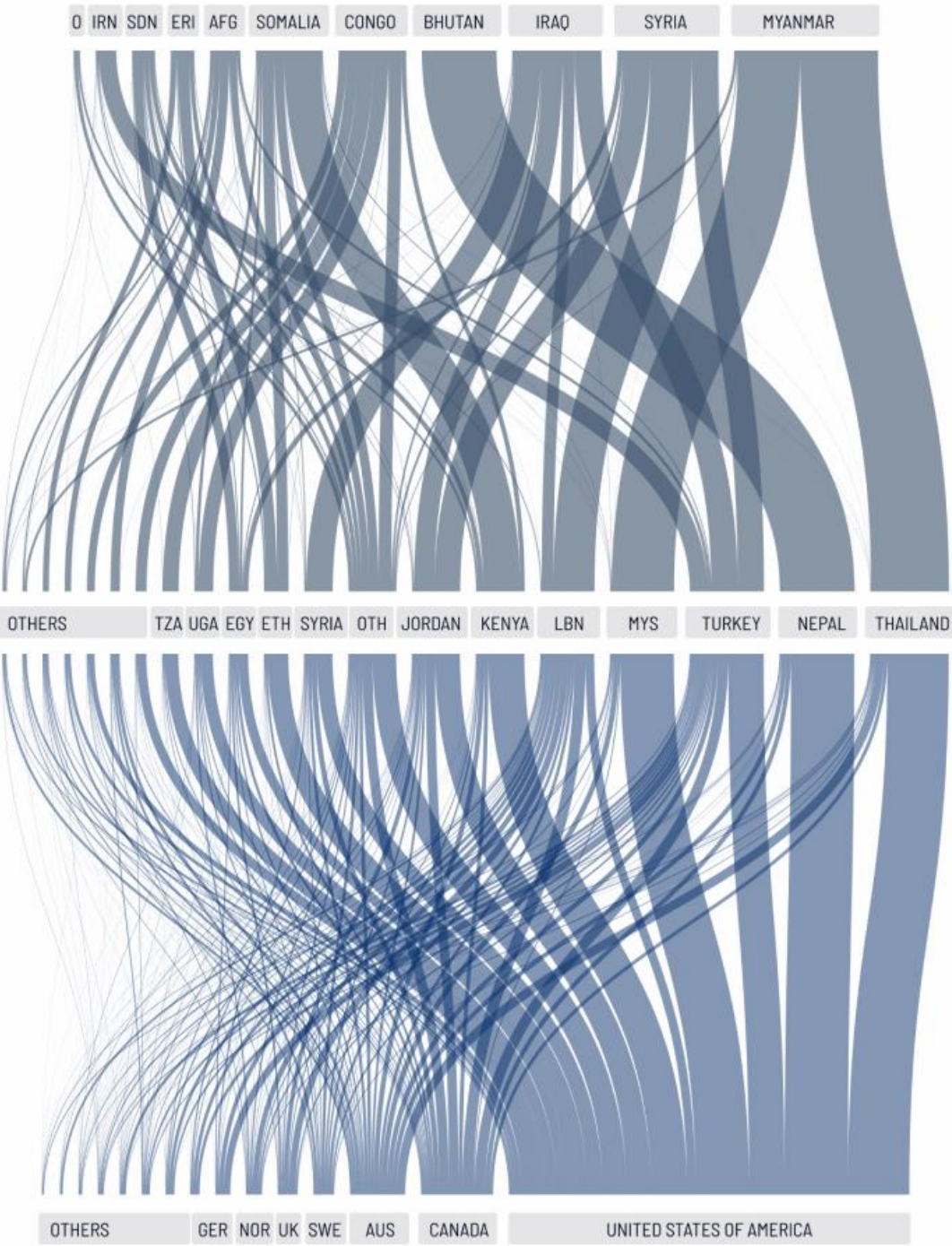
COUNTRY OF ORIGIN



COUNTRY OF ASYLUM



COUNTRY OF RESETTLEMENT



There were 20.4 million refugees of concern to UNHCR around the world at the end of 2018, but less than one per cent of refugees are resettled each year.

This visualisation covers individuals who departed from asylum to resettlement countries between January 2003 and April 2020.

Data source: UNHCR

Designed by Evelina Judeikyte for #vizforsocialgood

DATA VISUALIZATION



“The purpose of visualization
is **insight**, not pictures”

- Ben Shneiderman



BEATIFUL?
INSIGHTFUL?



Created by Ken Fierlage using Arjan Westerdie's Shape Packer Tool



BEATIFUL?
INSIGHTFUL?

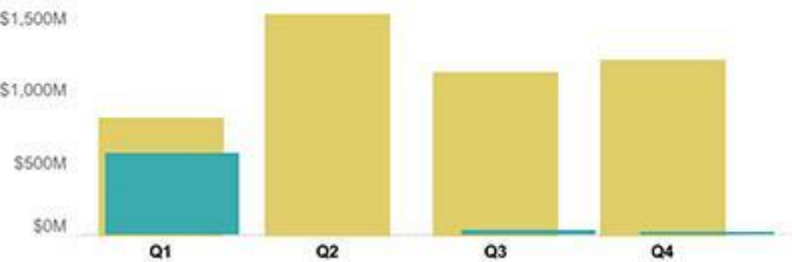
NO MORE MOVIE THEATERS

Amid the pandemic in 2020, the movie theater industry has faced the biggest crisis since the industry began. Profits are down and theaters are closing across the US. With no promise of things returning to normal and the proliferation of streaming services we may be witnessing the end of the movie theater experience as we know it.

Rapid Decline in 2020 Box Office Profits
Will the industry recover in 2021?

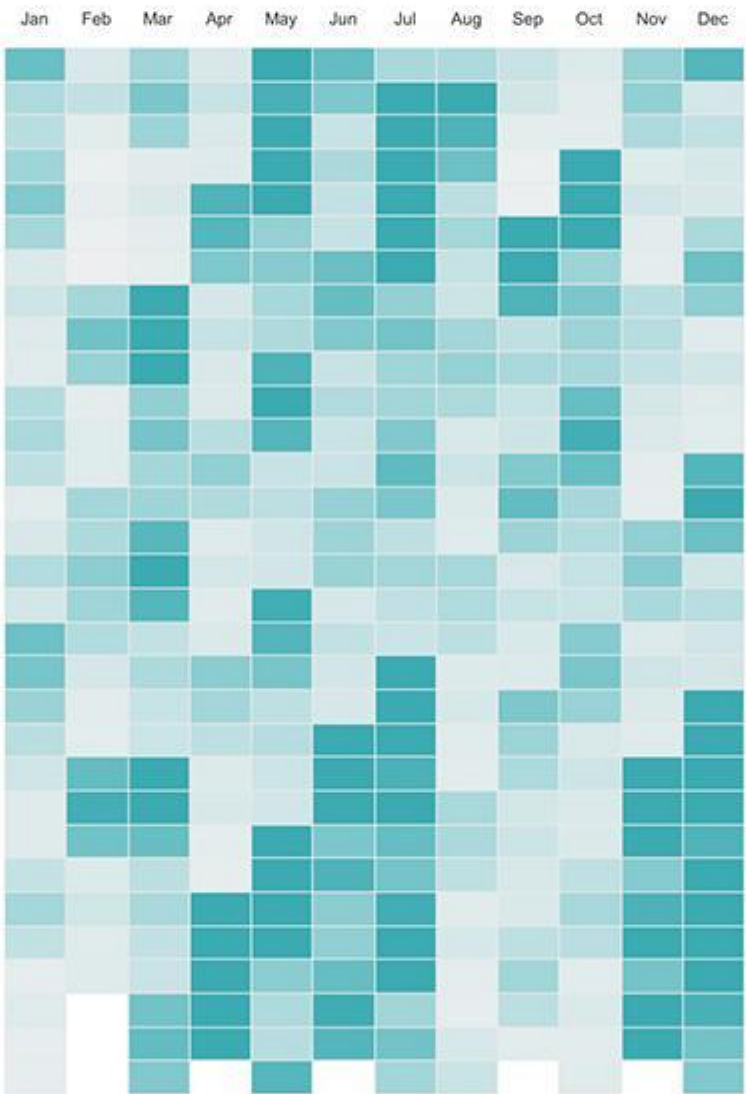


Box Office Quarters Compared
No, Q2 2020 isn't missing - it's just that low.



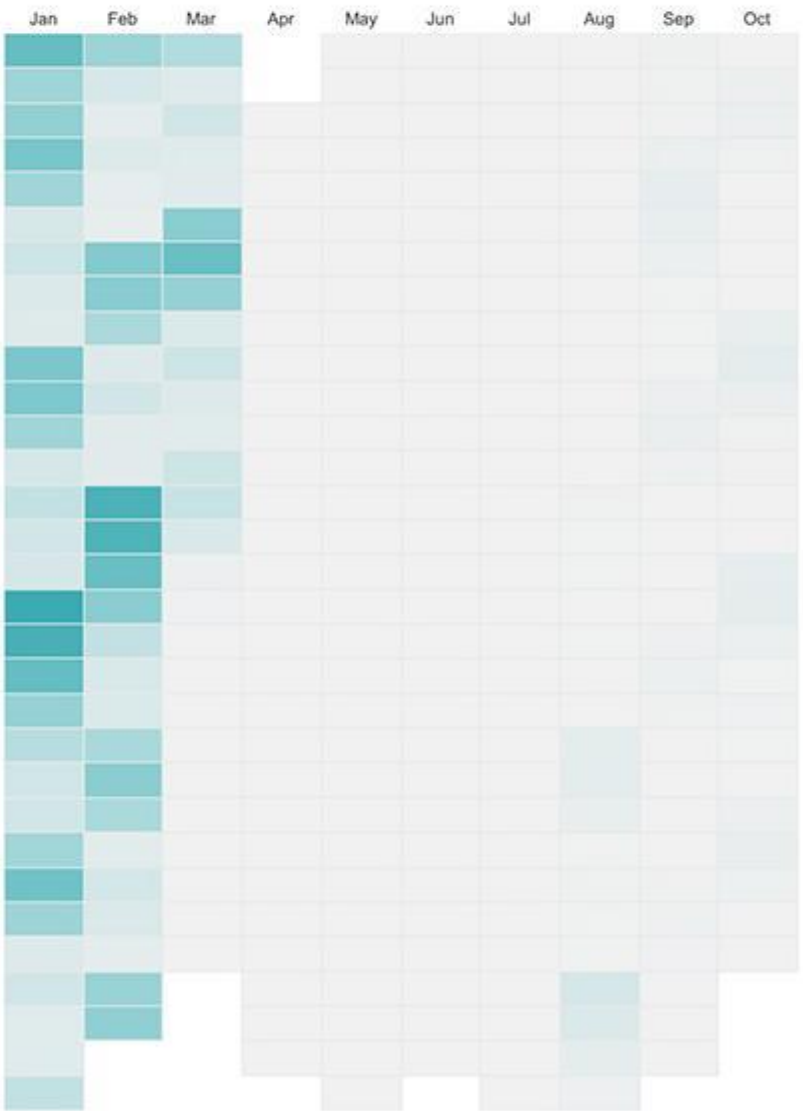
2019 Box Office Numbers

A healthy movie industry bolstered by Hollywood blockbusters.



2020 Box Office Numbers

A box office almost entirely devoid of profits.





Why do we
visualize data?



#1 TO SEE



1	4	5	7	8	3	8	3	2
6	3	2	6	1	5	3	8	3
4	6	7	8	8	8	7	5	7
6	8	3	4	5	5	6	8	9
2	1	4	9	6	4	2	5	6

#1 TO SEE



1	4	5	7	8	3	8	3	2
6	3	2	6	1	5	3	8	3
4	6	7	8	8	8	7	5	7
6	8	3	4	5	5	6	8	9
2	1	4	9	6	4	2	5	6

#2 TO REMEMBER



Row Labels	Count of Partner Institution
Kenya	21
Ghana	15
Liberia	13
Rwanda	9
Nepal	8
Ethiopia	8
Uganda	7
Tanzania	5
Indonesia	4
Ethiopia	2
Colombia	2
Namibia	2
India	2
Guyana	2
Sierra Leone	2
Bhutan	2
Kyrgyzstan	1
Tanzania	1
Serbia	1

#2 TO REMEMBER



DIVERSITY OF IMPACT: In 2018 and 2019, AWB worked on **32 projects** across **16 countries**.
Each project and each country has its own unique story.

Hover over each country to [learn more.](#) 

Size = 
of projects by country



© 2021 Mapbox © OpenStreetMap

#3 TO PERSUADE



The Persuasive Power of Data Visualization

Anshul Vikram Pandey, Anjali Manivannan,
Oded Nov, Margaret Satterthwaite, and Enrico Bertini, *Member, IEEE*

Table 4. Persuasion likelihood of participants (*who answered all the attention check questions correctly*) in the NWP category.

Corporate Income Tax

Treatment	Total	(+) change	No change	(-) change
Charts	54	36/54 (66.67%)	18/54 (33.33%)	0/54 (0%)
Tables	45	20/45 (44.44%)	22/45 (48.88%)	3/45 (6.66%)

Incarceration

Treatment	Total	(+) change	No change	(-) change
Charts	50	36/50 (72%)	13/50 (26%)	1/50 (2%)
Tables	56	27/56 (48.21%)	26/56 (46.43%)	3/56 (5.36%)

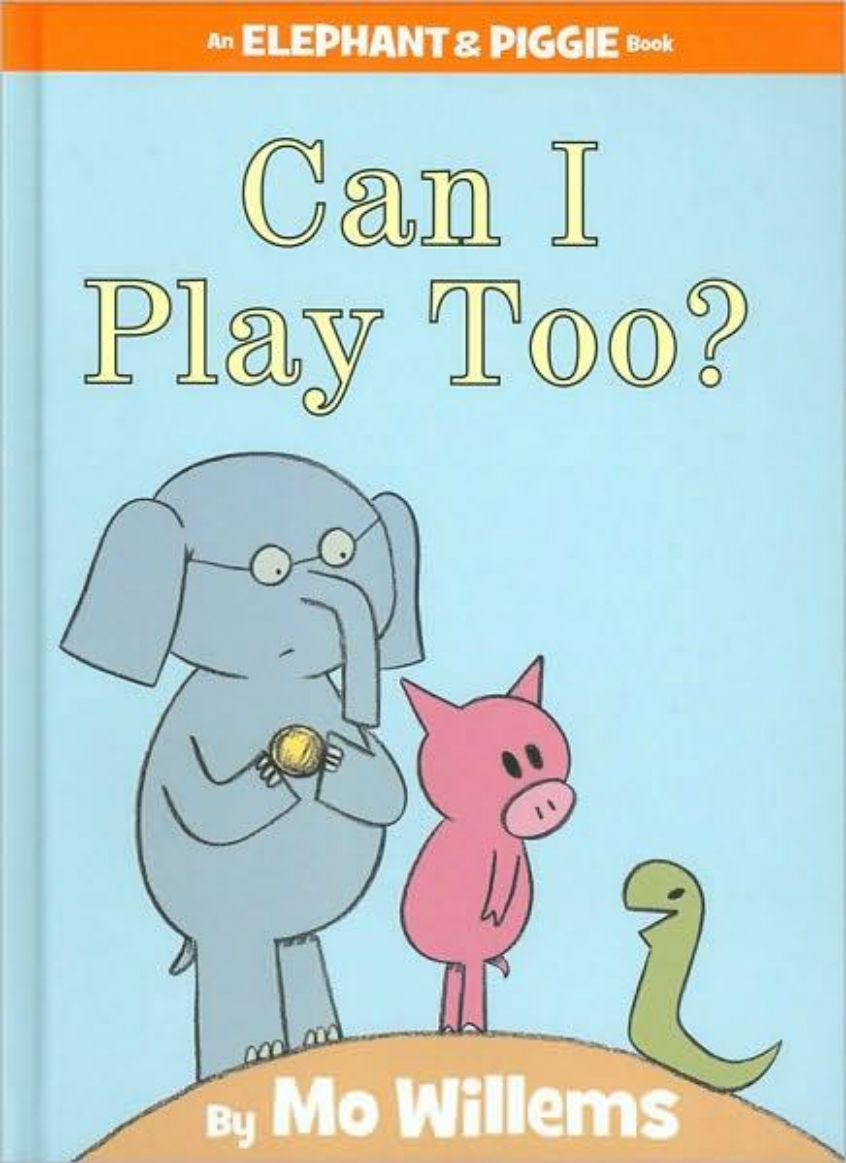
Video Games

Treatment	Total	(+) change	No change	(-) change
Charts	55	35/55 (63.63%)	19/55 (34.54%)	1/55 (1.81%)
Tables	63	23/63 (36.51%)	38/63 (60.32%)	2/63 (3.17%)

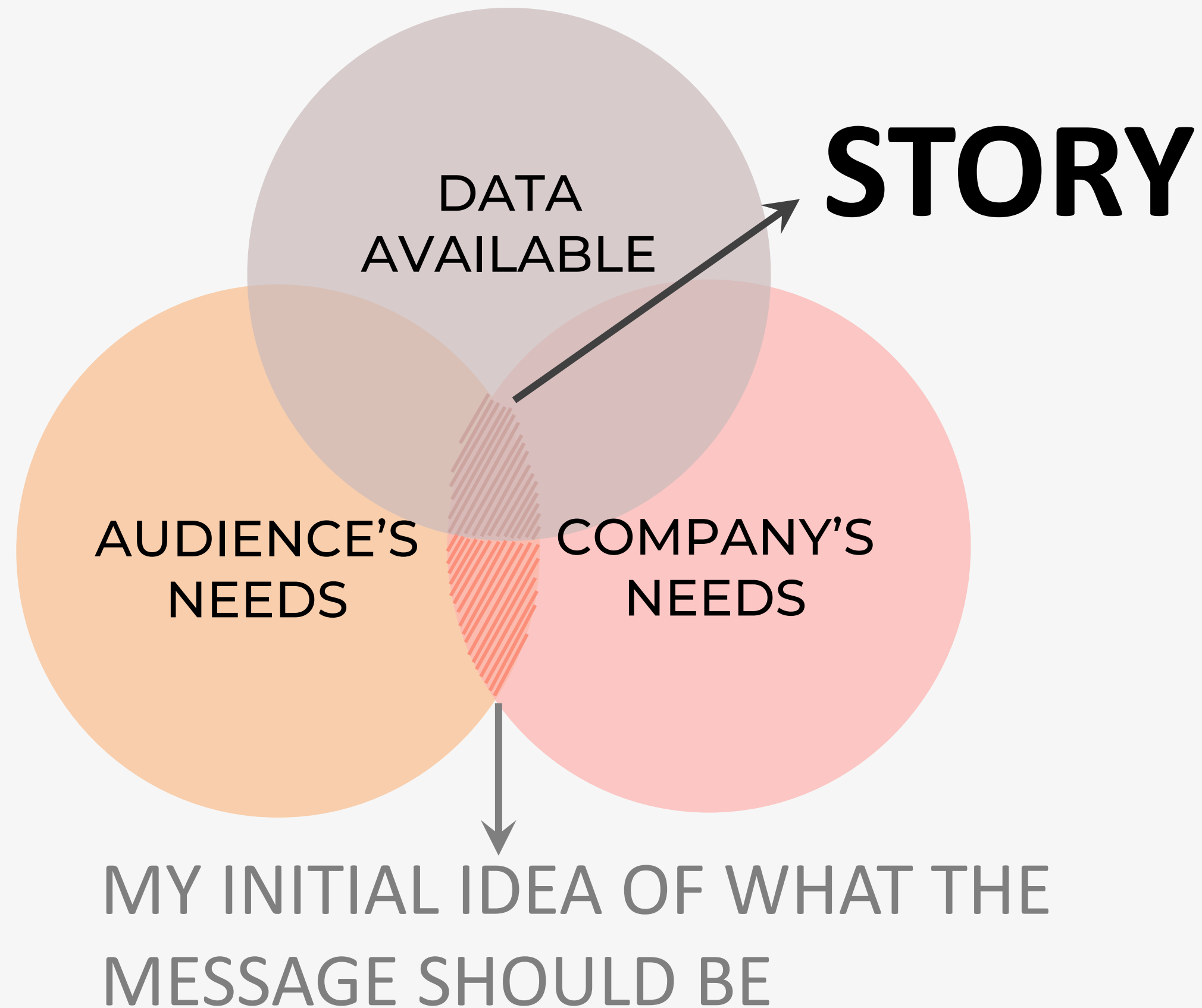


Why do we need
data storytelling?





DATA STORYTELLING





Exercise



1. You work for a Congresswoman. She's trying to understand the trends in business formation across the US
2. Look at the data and try to find key insights – **write them down**
3. Draw a chart that highlights the insights. **Be creative and insightful!**
4. Ask your peer for **feedback**
5. Try to visualize this chart in **Tableau**
6. Let's discuss

WHAT DID
YOU LEARN?

