

# Data Storytelling

## 1) The importance of context

**Prof. Dr. Jan Kirenz**  
HdM Stuttgart

# 6 Lessons in data storytelling

1. **Understand the context**
2. Choose an appropriate visual display
3. Eliminate clutter
4. Focus attention where you want it
5. Think like a designer
6. Tell a story

# Who is your audience & what do you need them to know or do?



Picture credit: [Unsplash](#)

This lesson describes the importance of understanding the **situational context**, including

- the **audience**
- **communication mechanism**  
(storyboarding)

# Exploratory vs explanatory analysis

# TYPES of ANALYSIS



# Exploratory vs Explanatory

## **Exploratory** analysis

- Understand the data
- Figure out what might be noteworthy or interesting to highlight to others.

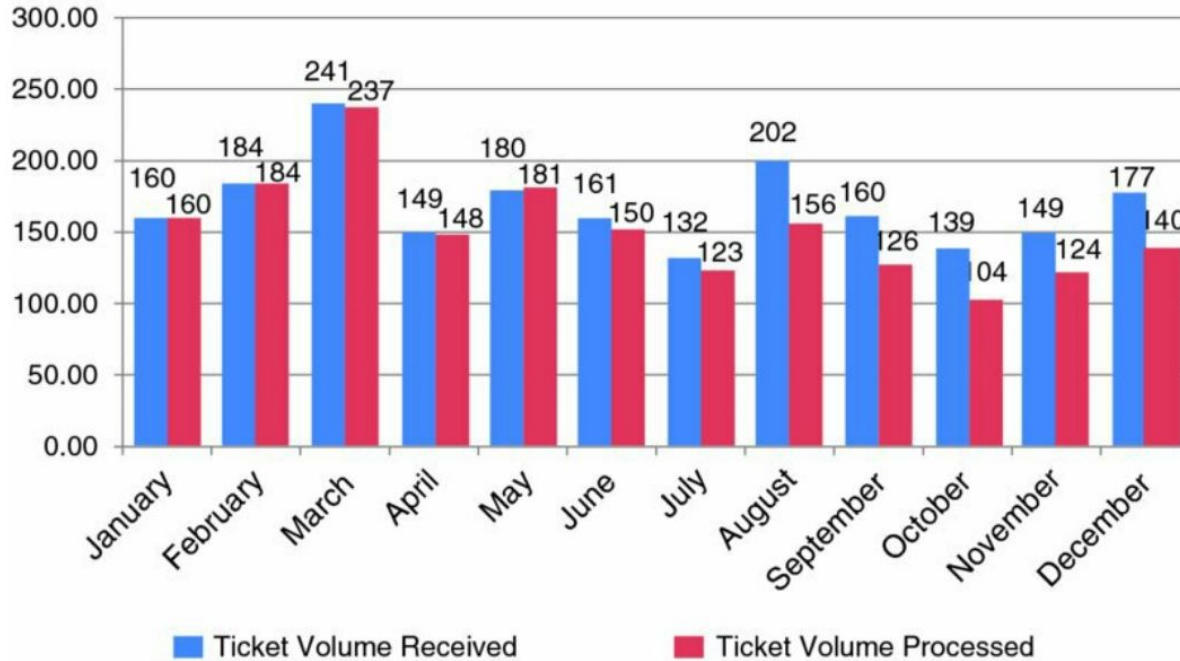
## **Explanatory** communication

- Communicating our analysis to others
- We have a specific thing we want to explain, a specific story we want to tell.
- Make recommendations for a specific action

If you simply present data, it's easy for your audience to say, "**Oh, that's interesting,**" and move on to the next thing.

But if you ask for **action**, your audience has to **make a decision** whether to comply or not.

## Ticket Trend





# Please approve the hire of 2 FTEs

to backfill those who quit in the past year

## Ticket volume over time



Data source: XYZ Dashboard, as of 12/31/2014 | A detailed analysis on tickets processed per person and time to resolve issues was undertaken to inform this request and can be provided if needed.

# Identify the **action**

“After reading my deck or listening to my presentation, you should”

---

accept | agree | approve | begin | believe | budget |  
buy | champion | change collaborate | commence |  
consider | continue | contribute | create | debate  
decide | defend | desire | determine | devote |  
differentiate | discuss | distribute divest | do |  
empathize | empower | encourage | engage |  
establish | examine facilitate | familiarize | form |  
free | implement | include | increase | influence |  
invest invigorate | keep | know | learn | like | maintain  
| mobilize | move | partner | pay for persuade | plan |  
procure | promote | pursue | reallocate | receive |  
recommend reconsider | reduce | reflect | remember  
| report | respond | reuse | reverse | review secure |  
share | shift | support | simplify | start | try |  
understand | validate | verify



## Become a TED Member

Engage with TED in a whole new way. TED Members earn exclusive access to unforgettable events with big names from the TED stage, inspiring conversations with a global community, and more.

**TED** Membership

Join today →

## Newest Talks

See all newest talks >



NABIHA SAKLAYEN

### Could you recover from illness ... using your own stem cells?

Posted Sep 2021



WENDY MACNAUGHTON

### The art of paying attention

Posted Sep 2021



RYAN PHELAN

### The genetic rescue of Earth's endangered species

Posted Sep 2021



## What are your interests? (1/2)

You'll receive personalized talk recommendations right here and in your inbox

Technology Science Design Business Collaboration Innovation Social change Health Nature The environment The future  
Communication Activism Child development Personal growth Humanity Society Identity Community

Next question →

Already have a TED account? [Sign in](#) to see your recommendations

**TED** Ideas worth spreading\*



# Main points

1. Focus on one **major idea**. (5:04)
2. Give people a reason to **care**. (5:33)
3. Build your idea with **familiar concepts**. (6:09)
4. Make your idea **worth sharing**. (7:14)

*There's no single formula for a great talk, but there is a secret ingredient that all the best ones have in common.*

*TED Curator Chris Anderson shares this secret — along with four ways to make it work for you. Do you have what it takes to share an idea worth spreading?*

Narrow your audience





Picture credit: [Unsplash](#)



Picture credit: [Unsplash](#)

# Who is your audience?

Name three things you could do to **understand your audience**, what she cares about, and how to best address her needs.



# WHERE to BEGIN?

1  
**WHO**

is your  
**AUDIENCE?**  
BE SPECIFIC!



What is their  
relationship to **you**?  
What motivates them?  
What keeps them  
up at night?

2  
**WHAT**

**DO YOU NEED**  
them to do?  
BE EXPLICIT!



Don't assume  
they will  
connect the dots!

3  
**HOW**

**WILL DATA HELP**  
make your point?  
BE DISCERNING!



What data  
will act as  
evidence for  
the case?

# Who, what, and how

To **whom** are you communicating?

- Understanding of
  - who your audience is and
  - how they perceive you.
- This can help you to identify **common ground** that will help you ensure they hear your message.

How can you use **data** to help make your point?

# Case study

When communicating with data, don't do it for yourself – do it for your audience! The following exercises will help you consider your audience, craft your message, and plan your content, setting you up for effective communication.

# **Case study**

Back to school  
sale

# Scenario

- You work at a national clothing retailer.
  - You've conducted a survey asking your customers and the customers of your competitors about various elements related to back-to-school shopping.
  - You've analyzed the data. You've found there are some areas where your company is performing well, and also some other areas of opportunity.
  - You're nearing the point of communicating your findings.
- Your first task is to narrow your audience

# Who could be interested?

## QUESTION 1:

- There are a lot of different groups of people (at your company and potentially beyond) who could be interested in this data.
- Who might care how your stores performed in the recent back-to-school shopping season?
- Cast as wide of a net as possible.
- How many different audiences can you come up with who might be interested in the survey data you've analyzed? Make a list!

# Possible solution to question 1

Senior leadership

Buyers

Merchandisers

Marketing Store managers

Sales associates

Customer service people Competitors

...

# How to be more specific?

There are a number of ways we can narrow our audience:

- by being clear on our **findings**,
- specific on the **recommended action**



# Let's get more specific.

## QUESTION 2:

- You've analyzed the survey data and found that there are differences in **service satisfaction** reported by your customers across the **various stores**.
- Which potential audiences would care about this? Again, list them.
- Does this make your list of potential audiences longer or shorter than it was originally?
- Did you add any additional potential audiences in light of this new information?

# Possible solution to question 2

If service levels are inconsistent across stores,  
the following audiences are likely to care most:

- Senior leadership
- Store managers
- Sales associates
- Customer service people

# Let's take it a step further.

## QUESTION 3:

- You've found there are **differences** in satisfaction **across** stores.
- Your analysis reveals items related to **sales associates** as the main driver of dissatisfaction.
- You've looked into several potential courses of action to address this and determined that you'd like to recommend **rolling out sales associate training** as a way to improve and bring consistency to service levels across your stores.
- Now who might your audience be?
- Who cares about this data? List your primary audiences.
- If you had to narrow to a specific decision maker in this instance, who would that be?

# Possible solution to question 3

- We want to **roll out training**
- Who will create and **deliver** the training?
- How much will it **cost**?
- With this additional clarity, some new audiences have entered the mix
- Senior leadership
- HR
- Finance
- Store managers
- Sales associates
- Customer service people

# We narrowed our audience

1. Being specific about what we **learned** through the data,
2. Being clear on the **action** we are recommending,
3. Acknowledging what point we're at in time (what needs to **happen** now), and
4. Identifying a specific **decision maker**.

# Audience: possible questions to ask

- What **background information** is relevant or essential?
- Who is the audience or **decision maker**?
- What do we **know** about them?
- What **biases** does our audience have that might make them supportive of or resistant to our message?



Picture credit: [Unsplash](#)

# Data: possible questions to ask

- What **data** is available that would strengthen our case?
- Is our audience **familiar** with this data, or is it new?
- Where are the **risks**:
  - what factors could weaken our case and
  - do we need to proactively address them?



Photo by [Stephen Dawson](#) on [Unsplash](#)

# Outcome: possible questions to ask



- What would a **successful outcome** look like?
- If you only had a limited amount of time or a **single sentence** to tell your audience what they need to know, what would you say?



# The 3 minute story

# THREE MINUTE STORY



Knowing exactly what  
you want to communicate  
reduces reliance on  
slides and data

# The BIG idea

# BIG IDEA\*

\*from Nancy Duarte  
(Resonate)



## A SINGLE SENTENCE that...

the "So what?"  
boiled down  
further

- ① articulates your point of view
- ② conveys what is at stake
- ③ is one complete sentence

## the **BIG IDEA** worksheet

Identify a project you are working on where you need to communicate in a data-driven way. Reflect upon and fill out the following.

storytelling  data®

PROJECT \_\_\_\_\_

### WHO IS YOUR AUDIENCE?

- (1) List the primary groups or individuals to whom you'll be communicating.
- (2) If you had to narrow that to a *single person*, who would that be?
- (3) What does your audience care about?
- (4) What action does your audience need to take?

### WHAT IS AT STAKE?

What are the *benefits* if your audience acts in the way that you want them to?

What are the *risks* if they do not?

### FORM YOUR BIG IDEA

It should:

- (1) articulate your point of view,
- (2) convey what's at stake, and
- (3) be a complete (and single!) sentence.

Download



# Exercise 1.3: Big Idea Worksheet

# **Case study**

Back to school  
sale: complete  
the Big Idea  
worksheet

# Back to school sale



- Finding:
  - inconsistent service levels across stores
- Recommendation:
  - sales associate training program

## the BIG IDEA worksheet

Identify a project you are working on where you need to communicate in a data-driven way. Reflect upon and fill out the following.

storytelling  data\*

PROJECT *Back-to-school opportunity*

### WHO IS YOUR AUDIENCE?

(1) List the primary groups or individuals to whom you'll be communicating.

*the executive team*

(3) What does your audience care about?

- *Having a highly profitable back-to-school shopping season*
- *Making customers happy because happier customers spend more*
- *Beating the competition*

(4) What action does your audience need to take?

*Agree that training is the right way to deal with inconsistent service levels and approve the resources it will take to make that happen (cost, time, people)*

### WHAT IS AT STAKE?

What are the benefits if your audience acts in the way that you want them to?

- *better service levels = happier customers*
- *happier customers spend more, come back more often, tell friends about their positive experience*

What are the risks if they do not?

- *no action could lead to negative word of mouth*
- *people shopping with competitors*
- *reputational risk*
- *lost revenue*

### FORM YOUR BIG IDEA

It should:

- (1) articulate your point of view,
- (2) convey what's at stake, and
- (3) be a complete (and single!) sentence.

*Let's invest in sales associate training to improve the in-store shopping experience and make the upcoming back-to-school season the best revenue generating one yet!*

How is the idea framed (positively or negatively?)

# Back to school sale



*If we don't invest in sales associate training to improve service levels, we will lose customers and have lower revenue for the upcoming back-to-school shopping season.*

*We are losing to the competition when it comes to important aspects of our store experience – we will continue to lose unless we invest in sales associate training to improve the customer experience across our stores.*

- Finding:
  - inconsistent service levels across stores
- Recommendation:
  - sales associate training program



# **Case study**

## Pet shelter

# Scenario

- Imagine you volunteer for your **local pet shelter**
- Nonprofit organization whose mission is to improve the quality of animal life through **adoptions**, and public education.
- You help organize **monthly pet adoption events**, which feed into the organization's broader goal of increasing permanent adoptions of pets by 20% this year.
- Traditionally, these monthly events have been held in **outdoor spaces** in your community (parks and greenways) on Saturday mornings.
- Due to poor weather, the event was relocated indoors to a local **pet supply retailer**.
- Surprisingly, after the event, you observed something interesting:
  - nearly **twice as many** pets were **adopted** compared to previous months.

# Scenario

- You have some initial ideas about the reasons for this increase and think there's value in holding **more adoption events** at this **retailer**.
- You'd like to conduct a **pilot program** over the next three months to see if the results help confirm your beliefs.
- To implement this pilot program, you'll need **additional support** from the pet shelter's marketing volunteers to publicize the events.
- You've estimated the **monthly** costs to be **\$500** for **printing** and three hours of a marketing **volunteer's time**.
- You want to ask the **event committee** to **approve the pilot program** at next month's meeting and are planning your communication.
- Complete the Big Idea worksheet

# Pet shelter



- Finding:
  - After indoor event, twice as many pets were adopted
- Recommendation:
  - Start pilot program (500\$ per month)

## the BIG IDEA worksheet

Identify a project you are working on where you need to communicate in a data-driven way. Reflect upon and fill out the following.

storytelling  data\*

PROJECT Adoption venue pilot

### WHO IS YOUR AUDIENCE?

(1) List the primary groups or individuals to whom you'll be communicating.

*Shelter events planning committee  
They'll decide based on a majority vote*

(2) If you had to narrow that to a single person, who would that be?

*Jane Harper, the most influential person on the committee whose opinion would likely affect the outcome*

(3) What does your audience care about?

*Increasing pet adoptions - in general and specifically toward the organization's 20% increase goal, which will improve ability to fundraise; they are cost-conscious, so low cost options are often supported*

(4) What action does your audience need to take?

*Approve my pilot program of holding pet adoptions at a local pet supply retailer for the next 3 months and provide additional marketing resources: \$500 to print posters + 3 hours/month of a marketing volunteer's time*

### WHAT IS AT STAKE?

What are the benefits if your audience acts in the way that you want them to?

*More adoptions (lower euthanization), which will help us achieve the broader 20% goal, and help with future fundraising*

What are the risks if they do not?

- Missed opportunity to increase adoptions
- More animals don't find homes
- Greater euthanization + associated cost
- Miss 20% goal

### FORM YOUR BIG IDEA

It should:

- (1) articulate your point of view,
- (2) convey what's at stake, and
- (3) be a complete (and single!) sentence.

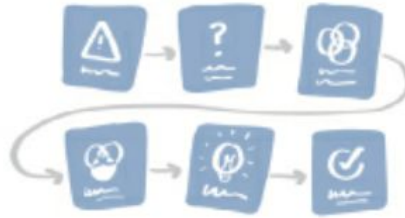
*Approve our low-cost pilot program that has potential to markedly increase adoptions and result in better future fundraising opportunities.*

How is the idea framed (positively or negatively?)

# Storyboarding

# STORY BOARDing

## UPFRONT PLANNING to CREATE STRUCTURE



STICKY NOTES help to ...

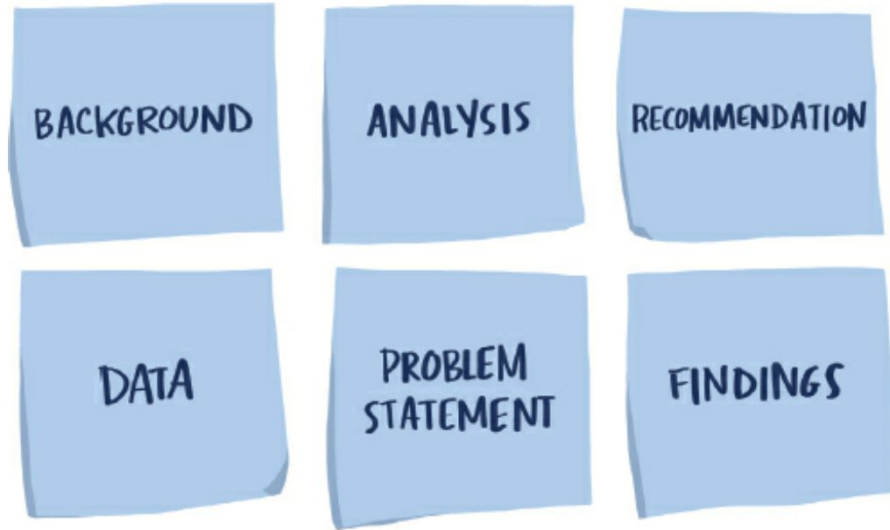
- avoid attachment to work done on computer
- force concise articulation
- easily rearrange the flow

1  
BRAINSTORM

2  
EDIT

3  
GET FEEDBACK

# How to order potential components of a storyboard?



# **Case study**

Back to school  
sale



# Big idea

*Let's invest in sales associate training to improve the in-store shopping experience and make the upcoming back-to-school season the best revenue generating one yet!*

# Potential topics from brainstorming process

1. Historical context (back-to-school shopping is important)
2. Problem we're trying to solve (historically not data driven)
3. Different ways we envisaged solving the problem
4. Course of action we undertook: survey
5. Survey: customer groups we asked, general demographics, response rates
6. Survey: details on competitors we included
7. Survey: questions we asked, open and close date of survey
8. Data: how our store compares across the various items
9. Data: how this breaks down across stores and regions
10. Data: how we compare to the competition
11. Data: how competitor comparison breaks down by stores & regions
12. Good news: where we're doing best or beating competition (with store breakdown)
13. Bad news: where we're doing worse or lower than competition (with store breakdown)
14. Areas for improvement
15. Potential remedies
16. Recommended course of action: invest in sales training
17. Resources needed (people, budget)
18. What this will solve
19. Projected timeline
20. Discussion to have / decision to be made

# Storyboard



# **Case study**

## Pet shelter

# Big idea

*Approve our low-cost pilot program, which has potential to markedly increase adoptions and result in better future fundraising opportunities.*

# Potential topics from brainstorming process

1. Historical context: we've always held adoptions at a community space
2. Current state: review benefits and how many were adopted per month
3. Outline how current number of pet adoptions feeds into broader goal of 20% increase
4. Background on why last month's event was held indoors
5. Results: we saw a 2x increase in adoptions
6. Drivers: possible reasons why this happened
7. Drivers: possible reasons why this may continue if we try again
8. Opportunity: introduce 3-month pilot program
9. Analysis: benefits & risk of pilot program
10. Resources needed: explain additional marketing cost of \$500
11. Resources needed: consider additional marketing time of 3 volunteer hours

13. Additional requirements: logistics for planning & set up in store
14. Data: what other pet shelters have done
15. Recommendation: approve this pilot program
16. Discussion: ways we're working to meet 20% increase goal
17. Timeline & proposed dates
18. How we'll track & measure success for 3 months
19. Implications for fundraising
20. Discussion & decision to be made

# Storyboard

## BACKGROUND

GOAL:  
increase  
adoptions  
by 20%.

CONTEXT:  
Current  
state of  
adoptions

show how  
adoptions  
help  
fundraising

## OPPORTUNITY

Last month's  
event was  
unexpectedly  
successful

Introduce  
possible  
root causes

What can  
we gain  
from  
replicating

show data  
demonstrating  
success for  
other shelters

## PROPOSAL

Introduce  
3-month  
pilot

Discuss  
investment:  
- \$500 cost  
- 3 hours time

How we'll  
measure  
results

Recommend:  
approve  
program &  
resources

# Summary



# FIRST, LET'S RECAP The IMPORTANCE of CONTEXT

## TYPES of ANALYSIS



## WHERE to BEGIN?

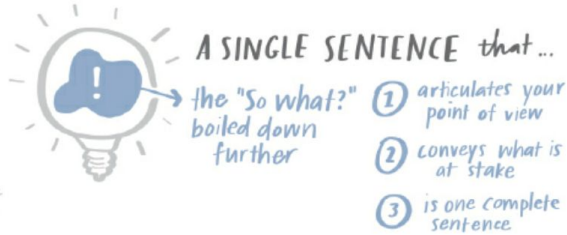


## THREE MINUTE STORY

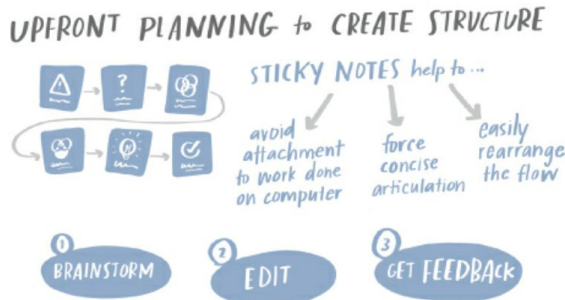


## BIG IDEA\*

\* from Nancy Duarte  
(Resonate)

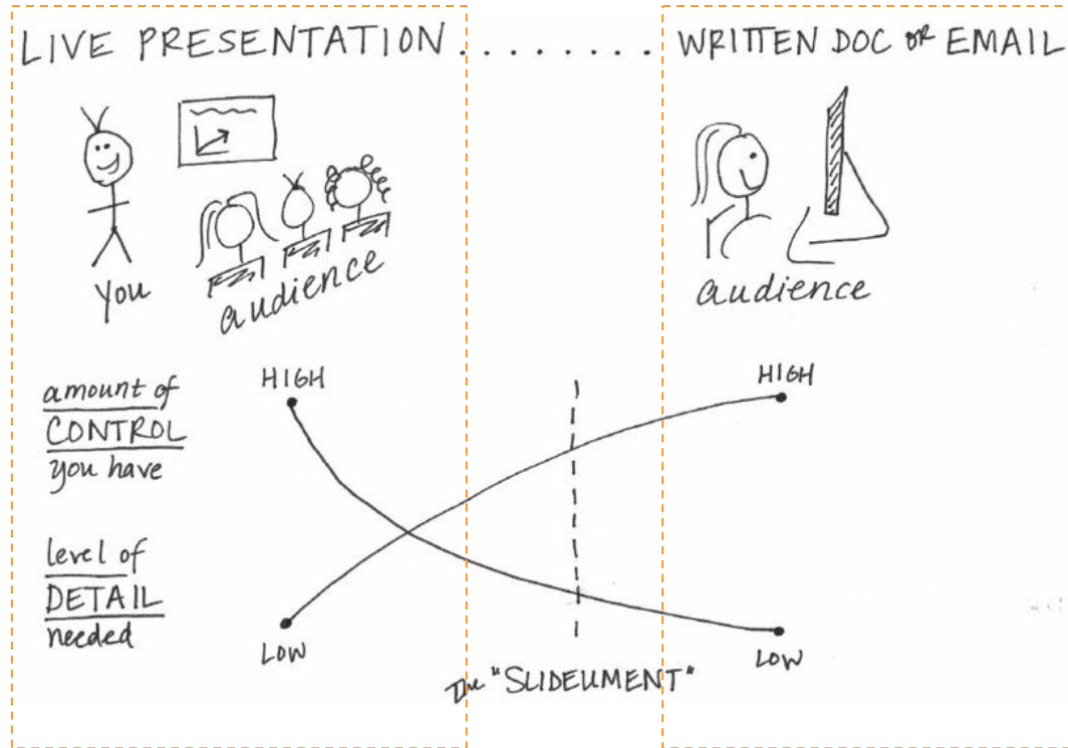


## STORY BOARDing



# How to deliver your content

# Communication mechanism continuum





# How to avoid **death** by PowerPoint