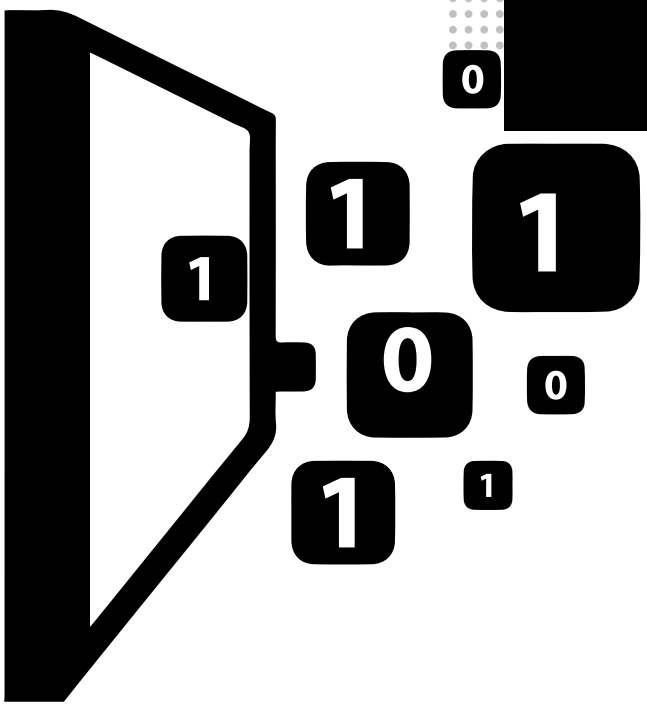
narrative
the business of stories

"Numbers have an important story to tell. They rely on you to give them a clear and convincing voice."

Stephen Few
Data Visualization Expert, Perceptual Edge



Narrative Data Storytelling

GO MAKE THE CHANGE HAPPEN WITH STORIES

HI!

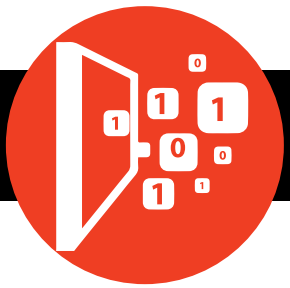
"I am aware that constant learning is important for my professional development. I have all intentions to learn, I buy books, I read articles and I sign up for online courses but rarely do I finish my courses, articles and books. Despite best intent."

If this is you, then this ebook is for you.

What we often don't realise is that we don't learn just from experiences but we learn from reflecting upon those experiences. As an avid reader, I read bite size content everyday and then reflect upon it. This reflection gives me great insights in to how I can apply what I am learning.

This book contain some of my most read Data Storytelling blogs. All articles are under 5 mins read and give you a section to write your reflection. The most important part of the book is writing those reflections and turning them in to application.

Go Make The Change Happen With Stories



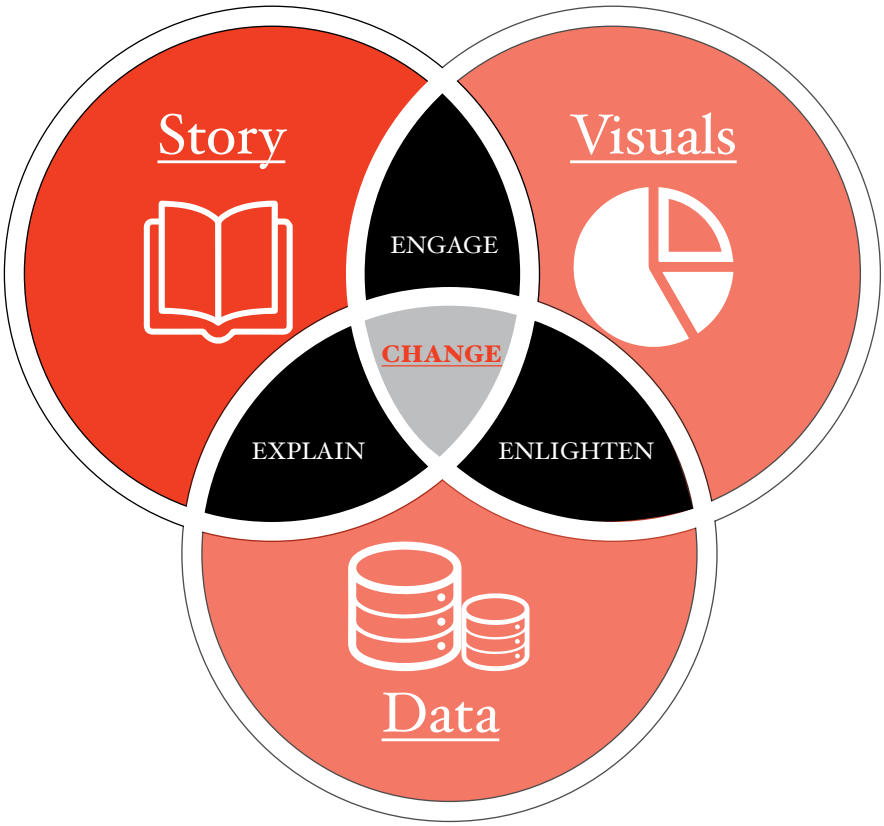
Data Storytelling

Why is Data Storytelling hard?

We teach two main subjects in school, language and maths. With language, we learn to tell stories. With maths, we learn to use numbers. But we don't ever learn how to tell a story with numbers. That is the reason why data storytelling can be a difficult for many of us.

What sort of things you find hard about presenting Data?

Foundation



A lot of my work involves Data Storytelling and naturally I look for all articles, books and papers to continuously grow my knowledge in that field. A couple of weeks ago I stumbled upon an article that curated the best blogs about Data Storytelling written in 2016.

Excited, I started reading each one of them carefully, but to my disappointment the majority of the articles were about data visualisation. Most people confuse data storytelling with data visualisation. I found myself lost in shapes, line, graphs and charts to use.

The easiest way to understand the difference between data visualisation and data storytelling is this.
Imagine you are about to make a presentation (non data related) and you have prepared the best slides possible. You take your position on the stage or wherever you are presenting from, the slides come on the screen and then you keep mum. Does that sound like an effective presentation?

Absolutely not...That is the equivalent of having great data visualisation with no data storytelling.
By focusing only on data visualisation you have failed to inspire the audience to take the action you intended them to take. Because an emotion, which is in the story, leads to action and emotion will not be there in the graphs and pie charts.

Now, ask yourself... why are you communicating if you cannot get the action you desire?

Why do Stories Matter in Data Presentation?

For some people, crafting a story around the data may seem like an unnecessary, time-consuming effort. They may feel the insights or facts should be sufficient to stand on their own as long as they're reported in a clear manner. They may believe the revealed insights alone should influence the right decisions and drive their audience to act. Unfortunately, this point of view is based on the flawed assumption that business decisions are based solely on logic and reason.

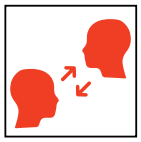
In fact, neuroscientists have confirmed decisions are often based on emotion, not logic. USC professor Antonio Damasio found patients who had brain damage in an area that helped to process emotions (prefrontal cortex) struggled to make basic decisions when choosing between alternatives.

Deciding on where to eat or when to schedule an appointment turned into lengthy cost-benefit debates for these individuals. Interestingly, these patients' decision-making skills were significantly impaired by the lack of emotional judgment. Emotion actually plays an essential role in helping our brains to navigate the alternatives and arrive at a timely decision.

When you package up your insights as a data story, you build a bridge for your data to the influential, emotional side of the brain. When neuroscientists observed the effects detailed information had on an audience, brain scans revealed it only activated two areas of the brain associated with language processing: Broca's area and Wernicke's area. However, when someone is absorbed in a story, they discovered it stimulated more areas of the brain. People hear statistics, but they feel stories. This subtle but important difference pays dividends for data storytellers in a few key ways:

Memorability: A study by Stanford professor Chip Heath (Made to Stick author) found 63% could remember stories, but only 5% could remember a single statistic.

Persuasiveness: In another study, researchers tested two variations of a brochure for the Save the Children charity organization. The story-based version outperformed the infographic version by $2.38 to $1.14 in terms of per participant donations. Various statistics on the plight of African children were far less persuasive than the story of Rokia, a seven-year-old from Mali, Africa.

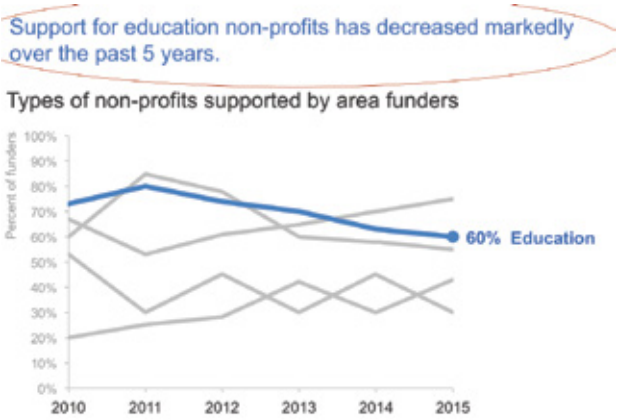


Engagement: Researchers also discovered people enter into a trance-like state, where they drop their intellectual guard and are less critical and skeptical when they hear story based data. Rather than nitpicking over the details, the audience wants to see where the story leads them. As mathematician John Allen Paulos observed, "In listening to stories we tend to suspend disbelief in order to be entertained, whereas in evaluating statistics we generally have an opposite inclination to suspend belief in order not to be beguiled."

Lessons on Data Storytelling

Lesson 1: What is the point you are trying to make?

Irrespective of whether you are presenting or emailing a data finding, the point you are trying to make should always come first.
Let's take a look at this graph as an example:



Look at the header of this graph, Support for education non – profits has decreased markedly over the past 5 years is the header. This header instantly conveys the point we are trying to make via this data.

The header should always convey the point you are trying to make. The rule I apply here is, if I was not presenting this graph, would the reader be able to look at it and straight away know the point I am trying to make? If the answer is yes. I am on the right track.

Now, if I had to present this graph. I would start by saying something like this:

"Support for education non – profits has decreased markedly over the past 5 years. Let us try and understand what data we have that supports our finding."

What are the key takeaways?

1. The point you are trying to covey via the data should be the header of your visual.
2. The point you are trying to convey via the data should be the first thing you say when you present.

Source : The graph is from Storytelling with Data by Cole Nassbaumer Knaflic

Reflection

Lesson 2: Who am I speaking to and why should they listen to me?

A couple of months ago I had the privilege of coaching a data analyst, who is Swedish but based in Singapore and works on the e-commerce strategy of a growing MNC. The desired outcome from the coaching was – A 30 mins data storytelling presentation for the CEO.

He shared his data findings with me and they looked pretty solid. Of course, we needed to work on his delivery etc but before we did that I asked him, How long have been working in Singapore? His answer, " less than a year". His answer led me to ask a few more questions.

1) Have you presented to your CEO before or this will be the first time?

Sam's response: *"this will be second time, first time was as disaster"*

2) Oh, why was it a disaster? What happened ?

Sam's response: *"he stopped me 10 mins into presentation. So, I am bit nervous and this time my boss recommended I take help from you."*

We straight away changed our plan for the day and started working on Building Credibility.

Its vital to think about the relationship you have with your audience and how you expect that they will react to you.

If they already trust you and you have worked with them in the past, it's perfectly fine to start with data storytelling. But if that is not the case building credibility precedes everything. People need to trust you and have faith in your ability before they start giving you their time.

Here is an example of how a great business storyteller I know used a story to build credibility with a new client. The story is narrated exactly how the business storyteller is telling it. So, imagine him in a boardroom with 25 people .
"My insights for the project in conversation come from an experience that I would like to share."

May 15th, 2004 – It was in Johannesburg when the results of the hosting bids for the 2010 FIFA World Cup were meant to be announced. South Africa lost the bid for the 2006 world cup to Germany in a closely fought contest.

South Africa was up against Egypt, Libya and Morocco this time around. A poor showing at the African cup of nations did not do any good for their chances to host the prestigious tournament.

Nevertheless, the rainbow nation was quite upbeat about their chances. When the then FIFA president Sepp Blatter announced that South Africa would indeed be the host for 2010 WC the nation erupts in joy.

4 months later, I received a call from Durban City Manager – Dr Michael Sutcliffe's office asking me to come over for a meeting.
I was personally involved in several projects for his office and hence thought it was a routine call up for a project review.

When I landed at his office there were 7 other people in that conference room and most of them were not familiar to me.

Dr Sutcliffe walked in and announced that this was the Technology task force that he was assembling to get the "Project" underway. I was still puzzled as to what is this so called "Project".

It was only after the first 15 minutes into the conversation that I realized that it was the FIFA 2010 where Durban was to host 3 group matches and 1 semifinals. The members I see in front of me were meant to work on the entire technology strategy and roll out leading up to the event.

As an ardent football fan I was excited and privileged to be there. The event was a grand success and free from any glitches. They were gracious enough to host me for the Germany Vs. Spain semifinals.

My name is Vish and I learnt a lot during my time at the Task Force and I am here to share some of my experiences and insights."

A question I have, after listening to that story. Do you have **a doubt in your mind** about Vish's credibility or do you have all ears open for him?

Reflection

Lesson 3: Understanding your Audience

Let us understand about our audience through Matt.

Who is Matt ?
Matt works in a corporate organisation and is responsible for selling cloud services platforms for a technology company.
Matt has to tell a story about cloud services platforms to 3 different audiences on three different occasions.

Occasion 1 : In a boardroom to government officials.
Occasion 2 : In a roadshow to consumers.
Occasion 3 : In a partners' conference to partners.

Now, Matt can't possibly tell the same story on all of these 3 occasions. He needs to be clear about a few things.

Matt's Audience	Matt's Purpose	What matters to the audiences?	Where is Matt telling this story?
Govt Officials	Sell	Trust	Boardroom
Consumers	Generate interest	Functionality	Exhbition
Partners	Provide insights, tools and support	Success	Conference

After mapping this, say, Matt is going to craft a story for govt officials. So, what he is doing is – Boardroom Influencing via storytelling. These are the set of questions I suggest Matt asks himself.

Occasion 1 : In a boardroom to government officials

Questions	Answers
Who are the people in the room ?	Govt Officials
What are the objections from your listener?	I am not sure if I can trust what he has to say
Why am I telling a story ?	To convince that our cloud services are trustworthy
What do I want the audience to say/ think after I have told the story ?	I am willing to listen to this person and I think I can trust him
What is your overall purpose of this interaction?	You move forward in the sales cycle

After you have all of this, the only question you have to ask is

Who do I know who is exactly like the person I am talking to. Meaning another govt official for a govt official. Another partner for a partner, another consumer for a consumer that I have provided our cloud services to and what happened in that case.

If you stick to the rule of who do I know who is like this person, your emotions, your narrative and your ability to achieve the desired outcome will all fall in place.

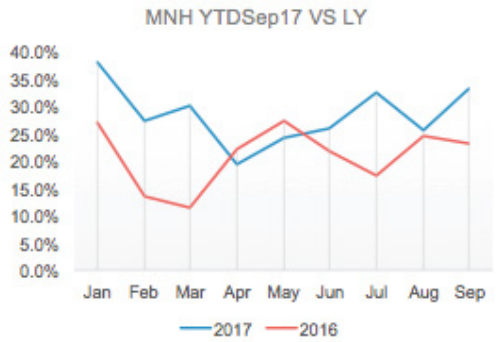
Stories in a presentation need to be tailored to the audience and purpose of the presentation and you can't use just the same story for all presentations.

Reflection

Lesson 4: Why Do We Present Data Like A Maze?

As I am doing more and more work in Data Storytelling, I am coming across examples that are demonstrative of the fact that our ability to data storytell is still at its embryonic stages. There are simple things we agree with in theory but fail to apply.

Here are some slides I have worked with that demonstrate my point.



Now, as soon your audience look at this, the feeling they get is very close to the feeling one gets when you enter a maze.

Confusion, Irritation, Frustration surfaces.

The first natural reaction of the audience is to stop listening to you because their brain tries to make meaning of what they are seeing. The problem is that these slides don't really guide you where to look and you are likely to loose interest in the presenter.

So What Should Change?

My learnings on the change we should seek to make in such an instance come from Storytelling with Data by Cole Nussbaumer Knaflic.

A better way is to draw your audience's attention to where you want them to focus. You have to highlight the important stuff but only the important stuff. Highlighting too much leads to diluting what you wanted to highlight at the first place. In Universal Principles of Design (Lidwell, Holden, and Butler,2003), it is recommended that at most 10% of the visual design be highlighted.

Here are some of the highlighting principles.

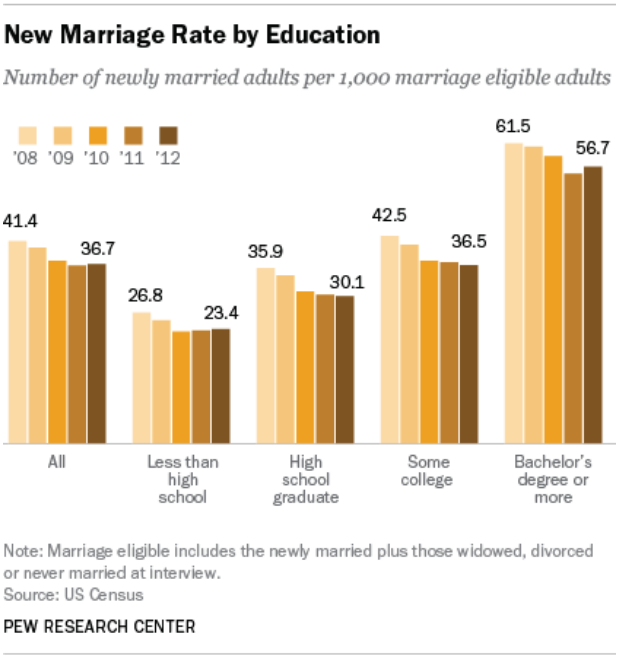
Bold, ***Italics,*** and **underlining** : Use for titles, captions, labels and short word sentences to differentiate and highlight. Bolding is generally preferred over italics and underlining because it adds minimal noise to the design while clearly highlighting chosen elements. Italics also adds minimal noise, but also do not stand out as much. Underlining adds noise, so it should be used sparingly.

CASE Uppercase text in short word sequences is easily scanned, which can work well when applied to titles, labels and key words. Avoid using different fonts as a highlighting technique, as it's difficult to attain a noticeable difference without disrupting aesthetics.

Color is an effective highlighting technique when used sparingly and generally in concert with other highlighting techniques (for example bold).

SIZE is another way to attract attention and signal importance.

As an Example look at the graph below. A graph similar to this was published by PEW Research Centre article titled, " New Census Data Show More Americans Are Tying the Knot, but Mostly it's the College Educated."

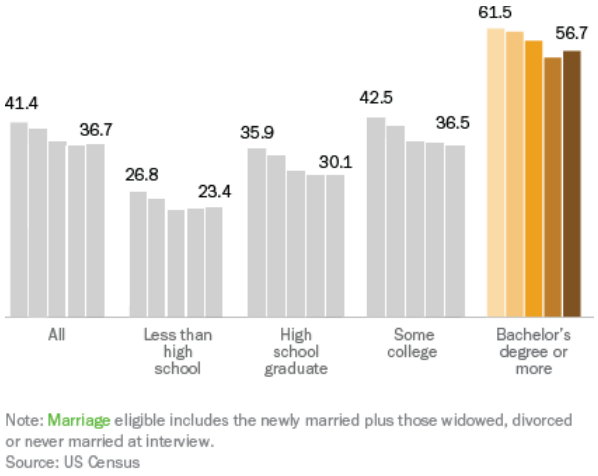


If you read the article that accompanied this graph and it is meant to demonstrate that the 2011 to 2012 increase observed in total new marriages was driven primarily by an increase in those having a bachelor's degree or more. The design really doesn't draw your attention to that insight and makes you focus on the 2012 data because it is darker in color.

If we use the color as a strategy to draw attention then the look of this graph could change like this

Now, where do your eyes go straight away? You have focused the audience's attention to where you really wanted it to be.

Don't make your audience process everything to figure out where they should pay attention, rather direct their attention strategically to the most important part(s) of what you are showing. Create visual hierarchy by emphasizing some elements and pushing others to the background.

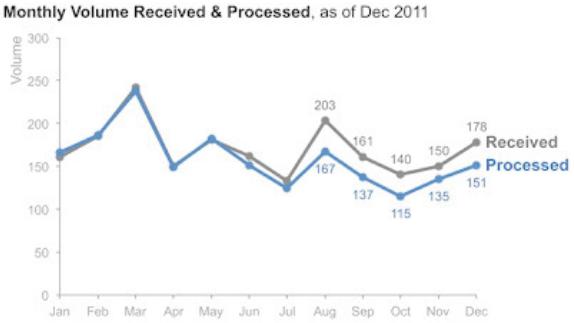


Reflection

Lesson 5: Hey Data Analyst, Are You are a Questionologist?

Last month I conducted 3 workshops on Data Storytelling in Singapore, China and Malaysia. During the Workshops I got the Data Analysts to apply the learnings on data they had brought from work. I noticed a pattern in their struggle.

Let us try and dig deeper in to the issue using an example, Imagine you are a Data Analyst and you are presenting the data given on the right which shows the volume of tickets received versus the volume of tickets processed.



Most analysts will show this graph and say, "In the later half of the year we processed less tickets than we received." The moment you hear something like this, as an audience, what goes through your mind is, "Well, that I can see."

So what exactly is the purpose of you standing up and speaking?

As an analyst you should always want your audience to know or do something. If you cannot articulate that, then you should revisit whether you need to communicate in the first place at all.

When I brought this up and questioned my workshop participants as to why they are not sharing insights and suggesting actions, the answer I got was, "The audience know better and should be able to decide on how to act".

What I am noticing more and more in my Data Storytelling Workshops is that Data Analysts are really far from understanding Why things happen the way they do and even further away from an ability to suggest actions. Their roles are limited to being number crunchers. The way most organisations are currently structured, Data Analysts are not really a part of the business where they have the knowledge of what business activity is happening.

So, with such a limitation what can the Data Analysts Do?

Here is what I suggest Data Analysts do.

Ask the Questions. The New York Times published a great article,The Power of 'Why?' and 'What if '? which highlights the importance of asking questions. Feedback from senior executives reflects that they need employees and leadership to ask more questions. This is true especially when investigating facts with data.

In this specific Data Presentation if you are not aware what caused the difference between the number of tickets received to number of tickets processed, here are some questions you could ask:

- **Can anyone take a guess on why our volume of tickets recieved to processed changed?**
- **Were there any resignations and were we facing a manpower crunch?**
- **Was our ticketing system having any troubles that led to slowing down of the process?**
- **Did we have new systems that the team was still learning how to use?**

It is totally fine that you do not know the answer to why things happened the way they did. If you simply said what was obvious on the slide, you are really not needed. But if you asked the questions you can lead the group in to some productive conversations which will reveal the insights that can be used to drive business outcomes. And even if you are highlight the wrong thing, it prompts the right sort of conversation.

So in absence of an insight, being a questionologist is a great move.

Reflection

Lesson 6: Explain the Grandness or Minuteness

We casually throw a number around, for example *"Our facility is 255,000 square feet large."* This is a classic example of a number just thrown but if you say ***"Our facility is 255,000 square feet which is as big as four football fields"*** you have now explained the grandness of scale by contrasting it with items of familiar sizes.

I notice this being particularly a problem when business professionals talk like this, *"We have been around for 38 years, we have 36,000 employees in 26 different companies."* The question that goes through my mind is – So what?

Compare it with something.

Numbers can be mysterious unless you compare them to numbers of similar value in a different context.

Here is a great example of Intel's CEO Paul Otellini's 2010 CES Presentation:

"Today we have the industry's first-shipping 32-nanometer process technology. A 32-nanometer microprocessor is 5,000 times faster; its transistors are 100,000 times cheaper than the 4004 processor that we began with. With all respect to our friends in the auto industry, if their products had produced the same kind of innovation, cars today would go 470,000 miles per hour. They'd get 100,000 miles per gallon and they'd cost three cents. We believe that these advances in technology are bringing us into a new era of computing."

Telling the story of the number makes it a hero versus a zero.

image credit:news.filehippo.com

Reflection

Lesson 7: Explanatory Story Pattern

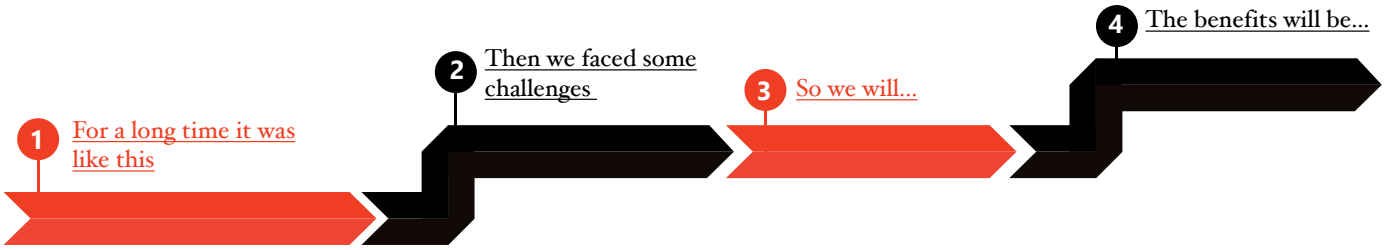
The Explanatory story works by walking the audience through the data in chronological order, illustrating how you've arrived at the situation you're in now. It works well with time-series data, especially when it shows the result after some intervention.

Imagine a sales trend chart showing revenues in four consecutive quarters, Q1 to Q4: $30M, $30M, $26M, and $33M. You could explain this by saying, "As you can see, the intervention we put in place at the end of Q3 completely reversed the decline in sales. Let me explain what we did . . ." followed by all the details. That's fine. And that's the way most people would share the data. But it's not a story.

Instead, you could explain it in story form: context, challenge, conflict, resolution.

You'd start by explaining how quarterly sales had been steady at $30M through Q2 (that's context). And then in Q3, you had a 13 percent decline (that's the challenge). Then, you explain that you and your team developed and implemented a plan to reverse it by saying, "So, here's what we did. . ." (this is the conflict). You finish with, "And as you can see, sales are now up to record levels," which is the resolution. Now, it's a story.

Source: Paul Smith | Sell With a Story



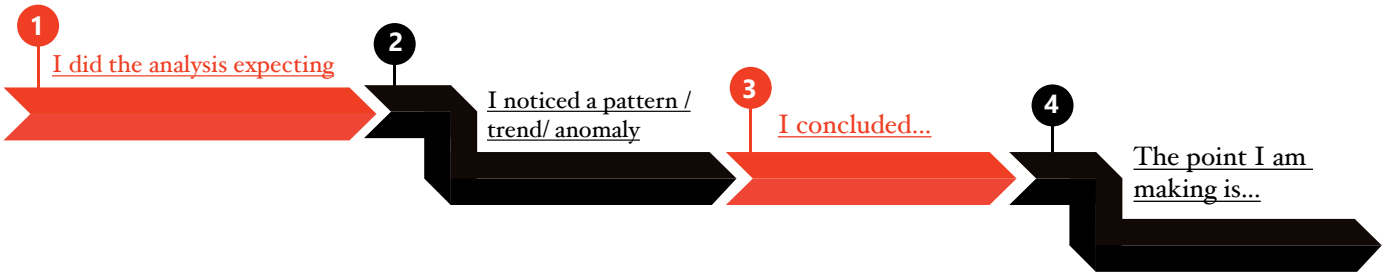
Reflection

Lesson 8: Exploratory Story Pattern

The "Discovery Journey" story is very different. You're not walking the audience through the data in chronological order. You're walking them through your analytical process in chronological order. In other words, the main character of this story isn't the business. It's you. Same data, different main character. In this story, you walk the audience through the work you did right up to the point that you had your aha moment. But instead of simply telling them your conclusion, you give them the opportunity to draw that conclusion themselves.

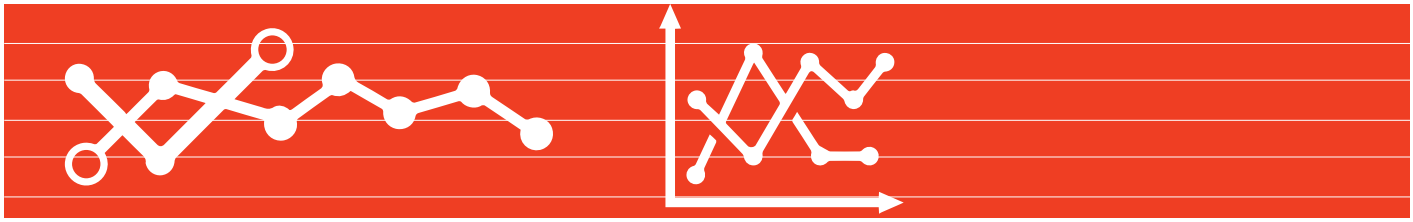
The goal here is to let your audience have that same aha moment you had when you came up with your brilliant idea by telling them your journey of discovery. People are more passionate about pursuing their ideas than they are your ideas. The Discovery Journey story turns your ideas into their ideas.

Source: Paul Smith | Sell With a Story



Reflection

Lesson 9: What Data Points are You Using?



Your Data Storytelling is very dependent on the Data Points you choose for the correct story to shape up.

Brian Wansink Professor of Marketing and the Director of the Cornell Food and Brand Lab Author of Slim By Design and Mindless Eating is famous for the popcorn study. This popcorn study is a great way to elaborate this point.

Here is what the Popcorn Study was all about.

*One Saturday in 2000, some unsuspecting moviegoers showed up at a suburban theater in Chicago to catch a 1:05 p.m. matinee of Mel Gibson's action flick Payback. They were handed a soft drink and a free bucket of popcorn and were asked to stick around after the movie to answer a few questions about the concession stand. These movie fans were unwitting participants in a study of irrational eating behavior.

There was something unusual about the popcorn they received. It was wretched. In fact, it had been carefully engineered to be wretched.

Some of them got their free popcorn in a medium-size bucket, and others got a large bucket. Every person got a bucket so there'd be no need to share. The researchers responsible for the study were interested in a simple question: Would the people with bigger buckets eat more?

Both buckets were so big that none of the moviegoers could finish their individual portions. So the actual research question was a bit more specific: Would somebody with a larger inexhaustible supply of popcorn eat more than someone with a smaller inexhaustible supply?

The researchers weighed the buckets before and after the movie, so they were able to measure precisely how much popcorn each person ate. The results were stunning: People with the large buckets ate 53 percent more popcorn than people with the medium size. So, clearly people eat more when you give them a bigger container.

What interests me most about this study is not the finding but imagine that a data analyst looked at this study and put together a graph with two data points, the number of people and how much they ate, with no mention of bucket sizes. Upon looking at the data you would quickly jump to the conclusion that some people simply ate too much and you would perhaps want to think about ways to motivate people to adopt healthy eating habits.

But in fact there is a much more simple solution available at hand which is to reduce the bucket sizes.

In summary you may have a way to obtain data but knowing the correct data points to use and interpret will give you the insights you need for the best business outcomes.

Narrative' Data Storytelling Workshop is designed to help business professionals learn how to tell a story hidden in Data for Better Business Outcomes.

** Source : Switch: How to Change Things When Change Is Hard by Chip Heath and Dan Heath*

Reflection

Lesson 10: Do Not Just Go from a Problem to a Solution

Data Storytelling and a mistake we often make

The Managing Director of a business retrieves data for the last 5 years sales revenue. He calls his team and shows them that in Year 1 and Year 2 they performed exceptionally well. In Year 3, the revenue dropped a little and in Year 4 and Year 5 it dropped even more.

He tells the team that they need a " Rainmaker " in the business. Someone who can bring the revenue back to what it was in Year 1 and Year 2. Shortly after, Rainmaker gets hired.

Sadly, 1 year later the only change that happens is that he has had three Rainmakers come and go and revenue continues to drop.

What is going on here?

The problem is most people look at the data and jump in solution mode.

Data tells us team work is not good. Let us resolve this by doing team building exercises.

Data tells us we don't have enough gender diversity in our team. Let us get some women in to our workforce.

In this case, data tells us we have declining sales. Let us get a Rainmaker. The reality is different. In Year 3, 3 other major global competitors had come in to the market and what was required was not a Rainmaker but a strategy on retaining clients.

If the Managing Director had interrogated the Data pattern, trend or anomaly, the story would have sounded something like this

In Year 1 and Year 2 we had great revenue and as you can see in Year 3, 4 and 5 our revenues have consistently dropped. You know what happened in year 3? We had 3 other competitors enter the market who took our clients. Our market share reduced.

Interestingly, our new business generation remained the same for all 5 years but we lost loyal retainer clients. What we need is a strategy for retainer clients not acquisition clients. We have leaky bucket business where we are adding sales with new clients but loosing sales from existing clients.

So what can we do?

Do not jump immediately from Problem to Solution when Data Storytelling.

Ask yourself, *"Why does the problem exist?"* And that precisely is your insight/ unexpected realisation of the Data Story.

Reflection

Lesson 11: I am Data and I can Lie

My recent work with market research specialists and data analysts has led to a conclusion, that there is a particular skill that contributes to you being able to analyse data really well.

What is it ?

Your ability to challenge or decode the findings.

Here is a wonderful story of what that looks like?

1n 1991, a first-year PhD student named Amy Edmondson now Novartis Professor of Leadership & Management at Harvard Business School began visiting hospital wards, intending to show that good teamwork and good medicine went hand in hand.

*Amy started visiting recovery rooms, talking to nurses, and paging through error reports. She noticed a lot of reported errors and she explains that the errors were not happening because there was incompetence, but because hospitals are really complicated places and there's usually a large team involved in patient care. Its easy to make mistakes due to the complexity involved.

However, some hospitals seemed more prone to errors then others. She made an observation that one department that was chatty, informal, had pictures of their kids on the wall and the other department was sedate, the nurse managers wore business suits and kept the public area free of personal items and clutter.

Amy found this an opportunity to investigate if good team work and good medicine go hand in hand.

She designed a survey with suitable questions expecting that this will prove good team and good medicine went hand in hand but the survey findings shocked her, the wards with the strongest team cohesion had far more errors. She checked the data again. It did not make any sense.

She then went back to the questions in the survey and looked at each one of them. One question in the survey was " If you make a mistake in this unit, it is held against you." This response to this question revealed what was going on.

It wasn't that that wards with strong teams were making more mistakes. Rather, it was that nurses who belonged to strong teams felt more comfortable reporting their mistakes. The data indicated that one particular norm- whether people were punished for missteps – influenced if they were honest after they screwed up.

This a wonderful example of how a data analyst should not data puke. There are 3 things that are important to tell the data story:

- Storytelling for Interviews Why are you findings the numbers peak or drop?
- Storytelling for Interviews So what if its peaking and dropping ?
- Storytelling for Interviews If the data analysis reveals results that are against your instincts...Challenge it.

In my recent work in Data Storytelling I have come across several situations where we have challenged the data being presented and upon investigating, found what was really going on.

Since when did data become smarter than a human?

Reflection

Story Source: Smarter Faster Better by Charles Duhigg

How to get in touch

Lets talk and find out how we can help your business engage, influence and inspire through storytelling.

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