COMP 333 Data Analytics

Story Telling

Greg Butler

Data Science Research Centre

and

Centre for Structural and Functional Genomics

and

Computer Science and Software Engineering
Concordia University, Montreal, Canada

gregb@cs.concordia.ca

Revise ENCS 282

Outline of Lecture

- Story Telling
- Four Slides Approach
- SUCCESS Approach
- Research-Based Approach

Story Telling

"Data stories explore and explain how and why data changes over time, usually through a series of linked visualizations"

Storytelling = visualization + narrative + context

"It's the context around the data that provides value and that's what will make people listen and engage"

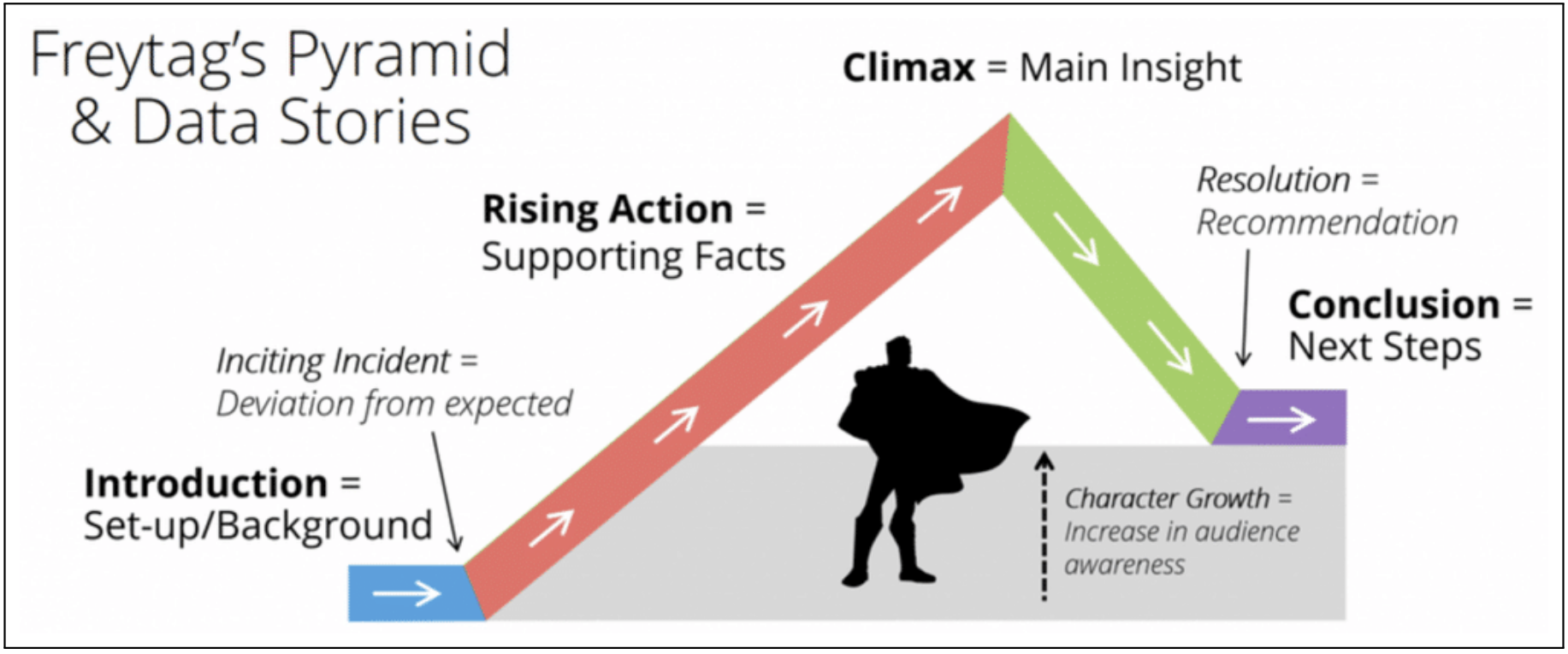
Data stories are about engagement

"All human storytellers bring their subjectivity to their narratives. All have bias, and possibly error. Acknowledging and defusing that bias is a vital part of successfully using data stories."
"By debating a data story collaboratively and subjecting it to critical thinking, organizations can get much higher levels of engagement with data and analytics and impact their decision making much more than with reports and dashboards alone."

Use Data and Analytics to Tell a Story, Christy Pettey, December 2018.

`https://www.gartner.com/smarterwithgartner/use-data-and-analytics-to-tell-a-story/`

Story Telling: Freytag's Pyramid



https://www.blastam.com/blog/persuasive-storytelling-with-data-visualization

Four Slides: SPSN by Robert Jung (Ernst+Young)

Slide 1: Situation

Describe the current state to your audience

What is the status quo you're trying to change?

Slide 2: Problem

Picture the problem.

What's the issue with the situation?

What is the pain you're trying to solve?

Slide 3: Solution

Present the solution.

How do you solve the problem?

How do you cure the pain?

Slide 4: Next Steps

You convinced the audience.

What are the next steps you need to take?

Which actions need to be taken?

Storytelling for Data Scientists, Jan Zawadzki, September 2018,

`https://towardsdatascience.com/storytelling-for-data-scientists-317c2723aa31`

Four Slides Example

Situation

- Consumers leave data traces when browing our website
- We store and collect data for every user
- We don't offer personalized recommendations

Problem

- Consumers expect recommendations, because our competitors offer it
- We're missing out on potential revenue
- Consumers switch to our competitors for product browsing

Solution

- Create personalized item recommender
- Train state-of-the-art recommendation algorithms
- Roll out recommender to all users

Next Steps

- Create recommendation project team of 6 data engineers & scientists and a Product Owner
- Invest 100k in cloud resources
- A/B tested recommender will be ready for rollout in 6 months

SUCCESS by Chip and Dan Heath

Simple: Keep it simple. Really focus on the most important message you're trying to bring across.

Unexpected: Use the element of surprise to get the attention of the audience. Break expected patterns.

Concrete: Use concrete examples. Help your listeners or readers picture the situation that you're trying to solve.

Credible: Get credible resources to back up your claim. Use data, and validation, to give your story credibility.

Emotional: Remember numbers won't make people care, but your people stories will make them care.
Appeal to the five emotions of fear, happiness, surprise, sadness, and love/hate.

Stories: Try to make a story out of your point to help it stick.

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SUCCESS Example

We collect user data. We don't generate insights from it yet.

- Explain current situation from user perspective (STORY)
- User shops on website
- Bookmarks and buys products
- Would like to be recommended complementary products

We need personalized recommendations to survive against competitors (EMOTIONAL)

- After buying a whiteboard, user is looking for markers and erasers
- User doesn't remember all complementary items (STORY)
- Amazon, Netflix attribute billions in revenue to recommender (CREDIBLE)
- We miss out on revenue, because we fail to satisfy consumer needs (SIMPLE)

The recommendation engine can generate X% of additional revenue (CONCRETE)

- Recommender will present user with items of interest to her
- User spends more time browsing website and buying products
- Recommendation engine will make users more happy using your product (EMOTIONAL)

We will create a personalized recommender in the next 6 months (CONCRETE)

- Create development team of 6 high-performing data engineers & scientists
- Use budget of 100k for computational resources
- Combat competitors and satisfy consumers (EMOTIONAL)

Key Points

To persuade people, tell a story

Lay the foundation with the Situation-Problem-Solution-Next Steps framework

Integrate SUCCESs elements to create a narrative

Storytelling for Data Scientists, Jan Zawadzki, September 2018,

`https://towardsdatascience.com/storytelling-for-data-scientists-317c2723aa31`

Three Key Fails to Story-Telling

Do not *entertain*

1. Associating a piece of analysis with an objective within the organization, implying that the key reason for undertaking the analytics is to develop a narrative that will entertain that objective.
2. Determining a desired narrative before any analysis is conducted, automatically installing a bias on decision making and a pressure on analytics professionals to entertain the narrative.
3. Spending more time thinking about how to present results in an entertaining way, rather than in rigorously questioning their validity, resulting in erroneous conclusions making their way to decision makers.

Beware of "storytelling" in data and analytics,, Keith McNulty, July 2018.

`https://towardsdatascience.com/beware-of-storytelling-with-data-1710fea554b0`

Three Key Fails to Story-Telling

Instead ...

1. Data analytics should only ever be associated with a question, never an objective.
2. Narratives should only be built when results are completed, validated and where any potential weaknesses are highlighted.
3. Data professionals should agree on the valid, defendable conclusions of the analytics before any discussion is entered into regarding presentation and visualization.

Beware of "storytelling" in data and analytics,, Keith McNulty, July 2018.

`https://towardsdatascience.com/beware-of-storytelling-with-data-1710fea554b0`

McNulty: Research-based Approach

Context

Outline the reasons why the analysis is being undertaken.

Be clear on the business question that is trying to be answered.

Methodology

Present the methodology used. Explain why the specific option was chosen. Perform the analysis in a repeatable way.

Results

Ensure that appropriate statistical standards are adhered to.

Say when results do, and do not, meet those standards.

Discussion

Be clear when conclusions cannot be drawn from the results.

Clearly highlight in particular where causality cannot be assumed.

Conclusion

What is the most compelling way to communicate them?

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`https://towardsdatascience.com/beware-of-storytelling-with-data-1710fea554b0`

The Eight Commandments

1. Begin with a question: Set up your story. What is your audience going to learn?
2. End with an insight: If we can't learn something useful from the data, the story isn't worth telling.
3. Tell a compelling story: People remember stories, not data. Take them on your journey.
4. Explain with visuals, Narrate with words: People understand metrics, trends, and patterns better with visuals.
5. Be honest and credible: The clients value honesty. Don't sugarcoat the negatives. And don't mislead with selected data.
6. Be clear and concise: Remove everything that is not part of your story. Save the other bits for another time.
7. Know and cater to your audience: What are their interests and goals? Do they want the details, or just a summary?
8. Provide context: Compare metrics over time or to industry benchmarks. Numbers are meaningless without context.

Making data mean more through storytelling

1. Connect with people
2. Try to convey one idea
3. Keep it simple
4. Explore the things you know best

Making data mean more through storytelling, by Ben Wellington, video, April 2015.

`https://www.youtube.com/watch?v=6xsvGYIxJok`