

NASA Education



$E=mc^2$

A composite image showing three children (a woman and two girls) in profile, looking up at a vibrant space scene. The scene includes a large space station, a planet with rings, a full moon, and a city skyline on the horizon.

The Power of Story

Inspire. Engage. Educate. Employ.

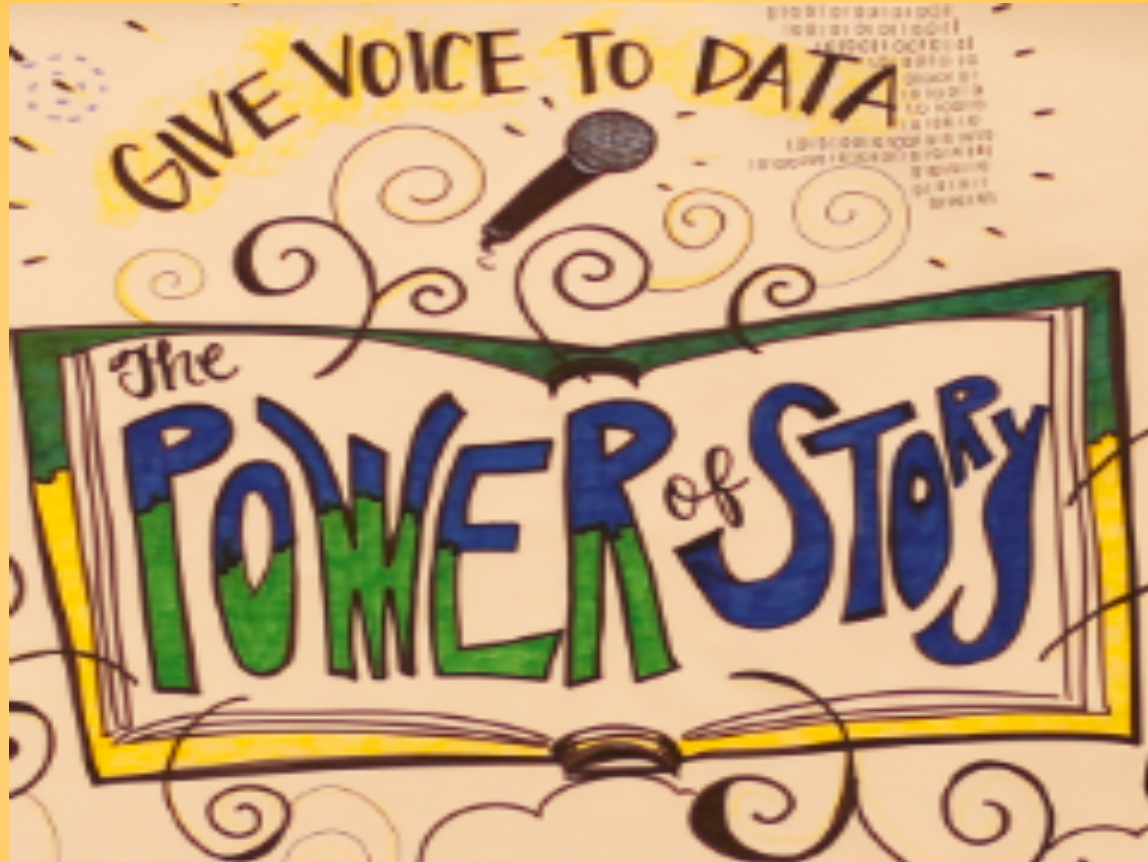
Outline: Part II

Meeting Presentation-Discussion (with Task Force)

Part II: Reflections: NASA Education's Story



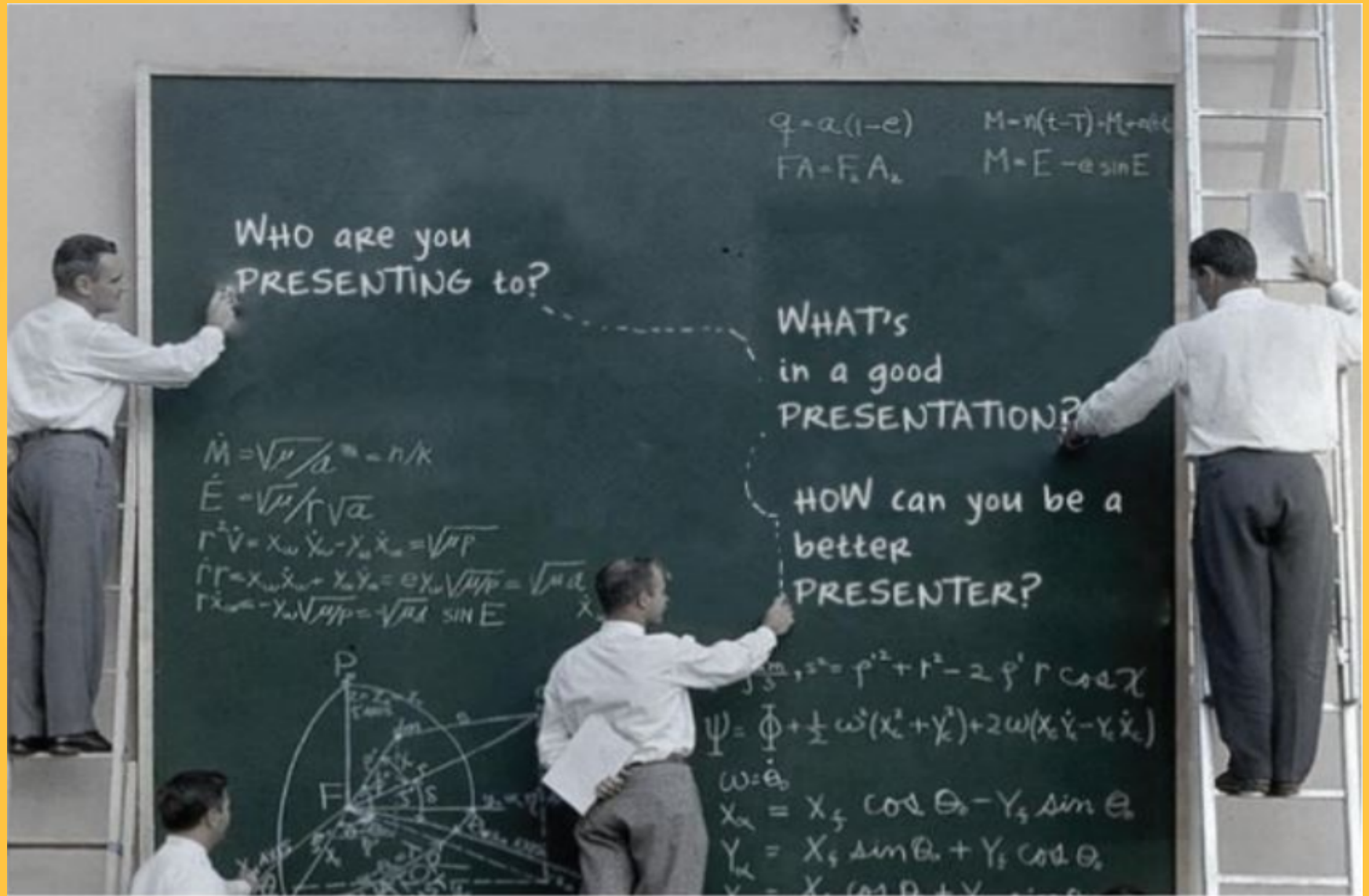
Structure Your Presentation Like a Story



Engage Through Story:

<http://vimeo.com/14622215>

NASA Education Presentations



NASA Education Presentations:

Early Applications

Videos



2015 Rover Challenge Day One

Build in **Soft Breaks** and
multimedia experiences

MESSAGE MAPPING

Step 1: Single most important thing you want audience to know;

Step 2: Three key messages that support this point; and

Step 3: Reinforce the three messages with stories, statistics, and examples.

2015-2017 Education Implementation Plan:
Electronically Enhanced Edition

Conscious shift from simply transferring information to *producing an experience*

NASA Education Presentations:

Early Applications

Success Stories

- ✓ Two NASA-funded Summer Interns developed software that allows satellite images to be used by Nepal government agencies towards earthquake recovery efforts.
<https://www.nasa.gov/centers/marshall/about/star/star150513.html>
- ✓ NASA reaches out to Northwest Indian College students (Ferndale, WA) to get underrepresented students involved in STEM programs...encouraging students to pursue STEM careers.
<http://kuow.org/post/why-nasa-called-northwest-indian-college-space-center>
- ✓ Mississippi 6th graders, with help from local HS and NASA, win award for robot built to help hometown clean its public drains.
<http://www.nasa.gov/audience/foreducators/students-help-solve-mystery>

GIVE VOICE TO DATA

Presentations: Education Overview to Deputy Administrator (May), FY17 PAA Briefing (July), and OMB FY 17 Budget Hearing (Sept)

How Are We Doing?



GIVE FACE TO THE DATA

NASA-ED 21CCLC: Success Story



NASA STEM Challenges encourage students to think and act like scientists and engineers to solve a real-world problem.

Working Together to Build Tomorrow's Workforce

Team Cupcake, Team Imaginators, Team Spaced Out, and Thinkers of Tomorrow.

These are some of the hard-working student teams that can say that they have tackled challenges similar to those faced by National Aeronautics and Space Administration (NASA) scientists and engineers.



Stories create 'sticky' memories by attaching emotions to things that happen.

Reflections

Reflections: Education Success Stories

What is a success story?

A success story shows movement in your program's progress over time – its value and impact

Why do you want success stories?

Success stories are an effective means to move beyond the numbers and connect to your reader; a cause they can relate to and want to join.

Reflections: Education Success Stories

How to develop an effective success story?

In order to develop effective success stories, you must be as conscientious about collecting your stories as you are about collecting surveillance data.

Develop a system for collecting success stories

To be effective, the plan to collect and use success stories must be intentional.

Collection Methods

- Success Story Watch System
- Official Solicitation
- Stakeholder Forum



Story Repository

**EDUCATOR PROFESSIONAL
DEVELOPMENT**



**INSTITUTIONAL
ENGAGEMENT**



**INTERNSHIPS, FELLOWSHIPS,
AND SCHOLARSHIPS**



**STEM
ENGAGEMENT**



Success Story Data Collection Tool

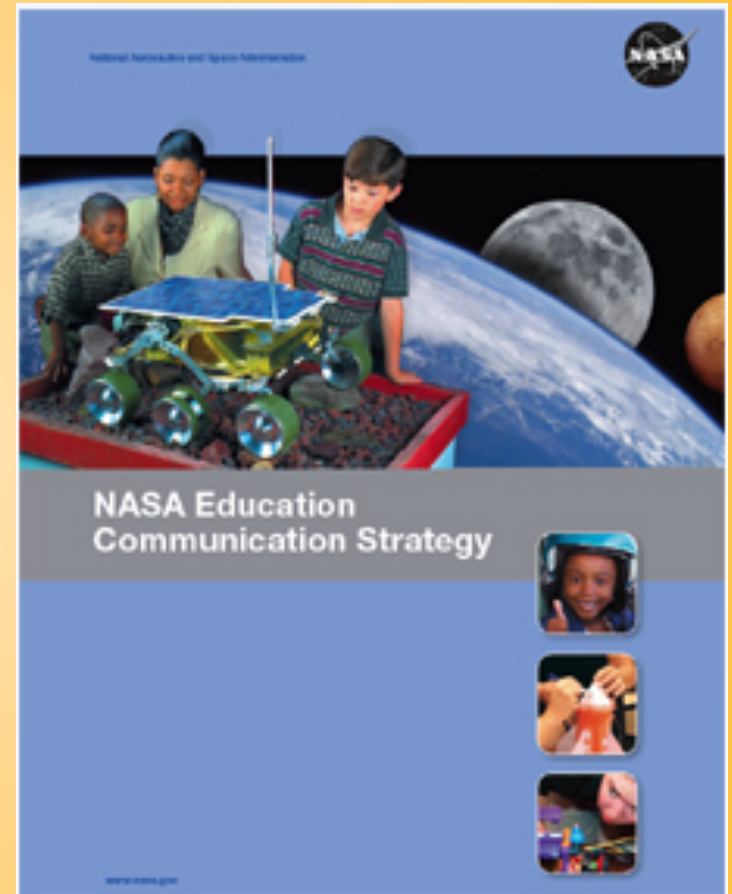
Success Story Data Collection Tool	
Program Information	
Success Story Item	Your Answer
Contact name:	
Contact information:	Address: Email: Office number: Cell phone:
Employer/Organization name:	
Focus of the Story	
Proposed Title of the Success Story: This should include your program's name and grab the attention of your audience.	
Focus/Theme of the story: Focus might be on collaboration with partners, a community prevention initiative, advocacy efforts, using data to engage stakeholders, etc.	
Point of view: The story should be from the perspective of those who benefited from the program: a participant, family member, friend, etc.	
Audience(s): Who is the intended audience for the story?	
The public health/community need for this program:	
Background of the Story	
Time period of achievement:	
Location of the story:	
Program target group:	
Name and contact information of one participant to interview:	Contact Information: Name: Address: Telephone Number:
How did you accomplish your success? - What actions did you perform? - Who was involved? - How long did it take to accomplish? - Estimated costs and funding source(s). - Partners involved (would they be willing to include their logo in a one-page document?) <i>Think in terms of replication. What would your audience need to know to replicate your program?</i>	
Environmental context and barriers to success: What is the background of your program (context)? What barriers to success did you face and how did you overcome them?	
Key results or implications of success: Describe your most important results either at the participant, program, community, or environmental level.	

Quote from a participant: Do you have any specific quotes from participants or partners that would support this story? Please include the full contact information for the person(s) being quoted and a signed release form.	Yes No Contact Information: Name: Address: Telephone Number:
Program impact: Since the program was implemented, how is life different for program recipients? (Changes in culture/norms, organizations, and behavior; increased access to proven prevention practice or new product, etc.) What is the estimated number of people who have benefited from the program? Were there any (unintended) results that surprised you?	
Implications of the Story	
Next steps: What are the next steps that need to be taken to further or continue this effort?	
Lessons learned: What were the key elements that made this a success? What would you do differently?	
Publication Information	
Do you have a photo? Please attach photo (jpg file) and consent form.	Yes No
Do you have a program logo?	Yes No <i>If yes, please include an electronic copy with your submission.</i>

Impact and Value: Telling Your Program's Story
http://www.cdc.gov/OralHealth/publications/library/pdf/success_story_workbook.pdf

Education Communication Strategy

The 2008 Education Communication Strategy was developed by a subgroup of the Education Coordinating Committee and endorsed by the full Committee.



http://www.nasa.gov/pdf/224116main_Edu_Communication.pdf

The Power of Story

15 STORYTELLING

1. People don't really buy a product, service, or idea, they buy the story that's attached to it.
2. Your brand is far more than just a name, a logo, or a tagline; it's the stories that people tell about you.
3. Every story exists in relationship to everything else around it.
4. We all want to look back at the story of our lives, and know that it made sense.
5. The stories we tell literally make our world.
6. The power of your story grows exponentially as more and more people accept your story as their truth.
7. If you want to learn about a culture, listen to the stories. If you want to change a culture, change the stories.
8. Leaders lead by telling stories that give others permission to lead, not follow.

BELIEVE ME: A STORYTELLING MANIFESTO FOR CHANGE-MAKERS AND INNOVATORS

AXIOMS REVISITED

9. Storytelling is our most basic technology, turbo-charged through twenty-first century innovation.
10. We all seek to experience our life in the most heroic of terms.
11. Nobody likes a change story, especially a change story we have no control over. What people really need is a continuity story.
12. Our fate as a species is contained in the story. Both tyranny and freedom are constructed through well-supported narratives.
13. Storytelling empowers, because it escapes the need to claim absolute truth.
14. Reinvention is the new storyline.
15. Storytelling is like fortune-telling. The act of choosing a certain story determines the probability of future outcomes.

Believe Me: Why Your Vision, Brand, and Leadership Need a Bigger Story, by Michael Margolis

Summary

- **Story.** While gathering and analyzing meaningful data is a critical step in the research journey, it takes more to really engage others so that they understand, engage with, and use that data. **Story** is often the missing piece of the puzzle. Stories convey meaning.
- **Facts Alone Fall Short - Give Voice to Data.** Facts alone are not sufficient to persuade. Facts need to be complemented with just the right balance of creditability and content that tugs at the heartstrings. Move from data to meaning.
- **Education Success Stories Repository.** Having a systematic method for collecting and using success stories will allow having up-to-date information at fingertips AND the process of collecting facilitates learning for all staff.
- **Education Communication Strategy.** Opportunity presents itself to update existing strategy to incorporate story plan.



REACH
—NEW—
HEIGHTS

BENEFIT
—ALL—
HUMANKIND

REVEAL
—THE—
UNKNOWN



BACK UP SLIDES

Part II



Types of Success Stories Based on the Phase of the Program

Upstream Success Stories



Your program is in its early stages. You have neither achieved your planned outcomes nor substantiated or rejected your proposed logic model (a graphic representation of the program).^{*} At this point, you want to verify the program description, highlight any partnerships, document policy changes as a result of the program, and/or illustrate whom the program is serving. Partner publications may serve some of your needs while you are developing your strategies, and your stories may emphasize national and/or state level data during this phase.

A *Logic Model Development Guide* is available from the W.W. Kellogg Foundation at <http://www.wwkf.org>.

Types of Success Stories Based on the Phase of the Program

Midstream Success Stories



With your program up and running, you want your partners to know about your progress. You haven't achieved the long-range outcomes yet, but you have some promising stories and examples of early changes. You may now have anecdotal, change-on-the-street type of stories to share. Your success story may spotlight community changes and growth of the program as well as partners. National and/or state level data may still constitute the bulk of support for your model; however, preliminary program data should indicate you are making progress. Look to your process evaluation (an evaluation of who the program serves and to what extent) to provide data that can be used in your midstream success story. These stories typically include both data and anecdotal information.

Types of Success Stories Based on the Phase of the Program

Downstream Success Stories



By now, life-on-the-street has changed. You have demonstrated impacts that you want to convey to your stakeholders. Your success story should illustrate how things have changed for the people your program serves. You are not eliminating surveillance data. Rather, the goal is to explain surveillance systems' results to a general audience. For example, what does it mean that 30% of your state's most at-risk population now has access to or has received sealants? The goal is to catch the attention of your audience and leave them wanting more information.

Success Story Watch System*

- **NASA Community College Aerospace Scholars (NCAS) Online Experience Converts Influence to Action.**

The fall 2015 NCAS online learning experience came to a successful close last week allowing external evaluators to survey the 297 scholars.

<http://ncas.aerospacescholars.org>.

- **Chief Dull Knife College Story Published.** The Goddard Space Flight Center Offices of Education and Communication collaborated to publish the story of how Chief Dull Knife College, a Tribal College with an enrollment of 150 students in Lame Deer, Montana, was able to take 24 students and faculty from several Tribal Colleges to participate in the RockOn! workshop at Wallops Flight Facility.

<http://www.nasa.gov/feature/goddard/tribal-knowledge-nasa-funds-montana-tribal-college-students-to-build-rocket-payloads>

Stories Come in All Forms

Narrative Form	Comments
Full Story	The listener experiences emotions, characters, voices, plot, drama, contrast, problem, resolution, core message, story arc.
Anecdote	A short personal account (your personal take on a situation); a condensed personal story. <i>Sometimes a story, sometimes not.</i>
Case study	An analysis of a particular case or situation used as a basis for drawing conclusions in similar situations; a record of somebody's problems and how they were dealt with. The story is usually presented in sections: Situation, Solution, Result, Analysis.
Description	Describing a story instead of actually reliving the experience and retelling it. This is often called 'talking about' a story and frequently is a simple narration of events. Descriptions of stories lack emotional engagement or compelling reasons to listen.
Example	A particular single item, fact, incident or aspect that serves to illustrate an opinion, theory, principle, rule, guideline, or concept. Often used when talking ABOUT a story instead of telling one. <i>Usually not a story, although often mistakenly identified as one.</i>
News	A report of recent events or developments. This is an inverted pyramid structure that telegraphs the end of the story at the very beginning. The who, what, when, where, how and why are usually in the first sentence or paragraph, with additional details coming later.
Profile	A concise biographical sketch. <i>Sometimes mistaken for a story.</i>
Scenario	An imagined sequence of possible events. Useful in planning or in developing a more complete story.
Testimonial	A favorable report or statement of qualities or virtues of somebody or something; an expression of appreciation; a statement testifying to benefits; a character reference or letter of recommendation. <i>Sometimes mistaken for a story.</i>
Vignette	A brief incident or scene as in a play or movie; a short elegant story.
Tag line	A phrase repeatedly used in connection with a person, organization or product, especially in publicity. <i>Sometimes mistakenly identified as a story.</i>
Trigger	A word or series of words to initiate, actuate, or set off a story.

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Story Comes in All Forms

A Sputnik moment for STEM education: Ainissa Ramirez at TED2012

<http://blog.ted.com/a-sputnik-moment-for-stem-education-ainissa-ramirez-at-ted2012/>

**“I saw my reflection
in her and was transfixed.”**

LISTEN TO THE STORY

<http://www.npr.org/player/v2/mediaPlayer.html?action=1&t=1&islist=false&id=432599376&m=437291845>

CHARM

- **Collect**
- **Hone**
- **Apply**
- **Renew**
- **Mine**



Karen Dietz, Just Story It!

Outline

Pre-Meeting Presentation (Member Review-On Own)

Part I: The Irresistible Power of Story - Primer

Meeting Presentation-Discussion (Full Task Force)

Part II: Reflections: NASA Education's Story



Once Upon a Time....



BLOG

<https://pic.gov/content/great-moments-create-future>

What is a Story?

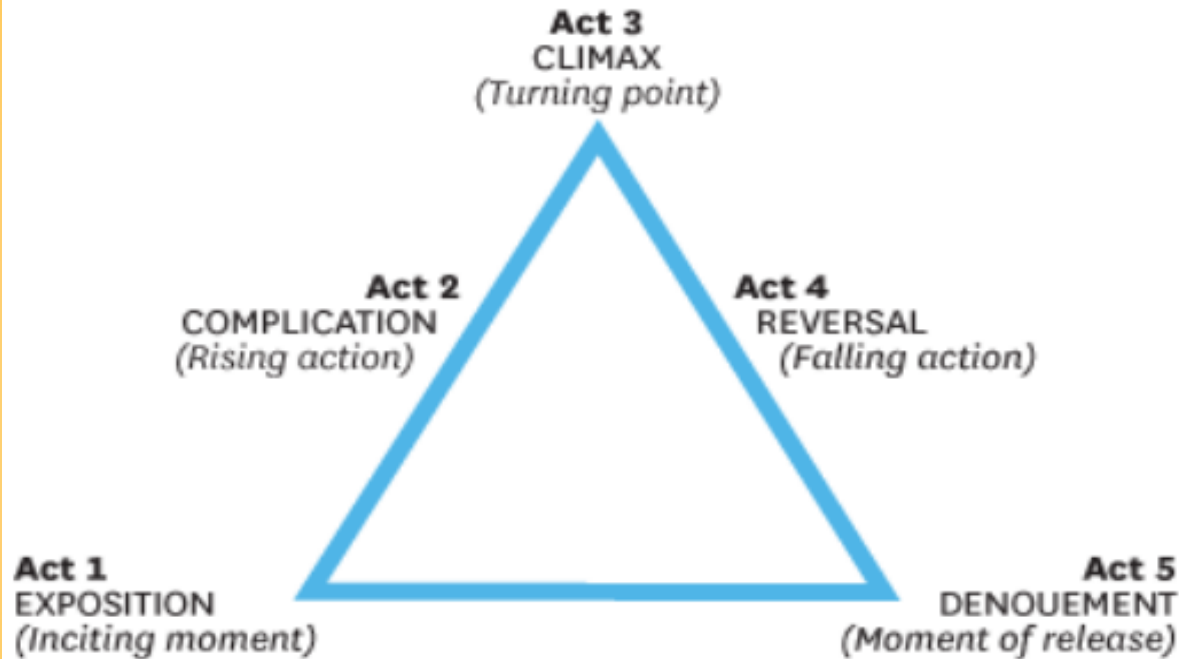


<http://www.youtube.com/watch?v=uQB7QRyF4p4>

What is a Story?

FREYTAG'S PYRAMID

This simple storytelling structure has worked for thousands of years.



*Ref: Irresistible Power of Storytelling
as a Strategic Business Tool*

WATCH: Lost Puppy

https://www.youtube.com/watch?v=xAsjRRMMg_Q

Why Your Brain Loves Good Storytelling

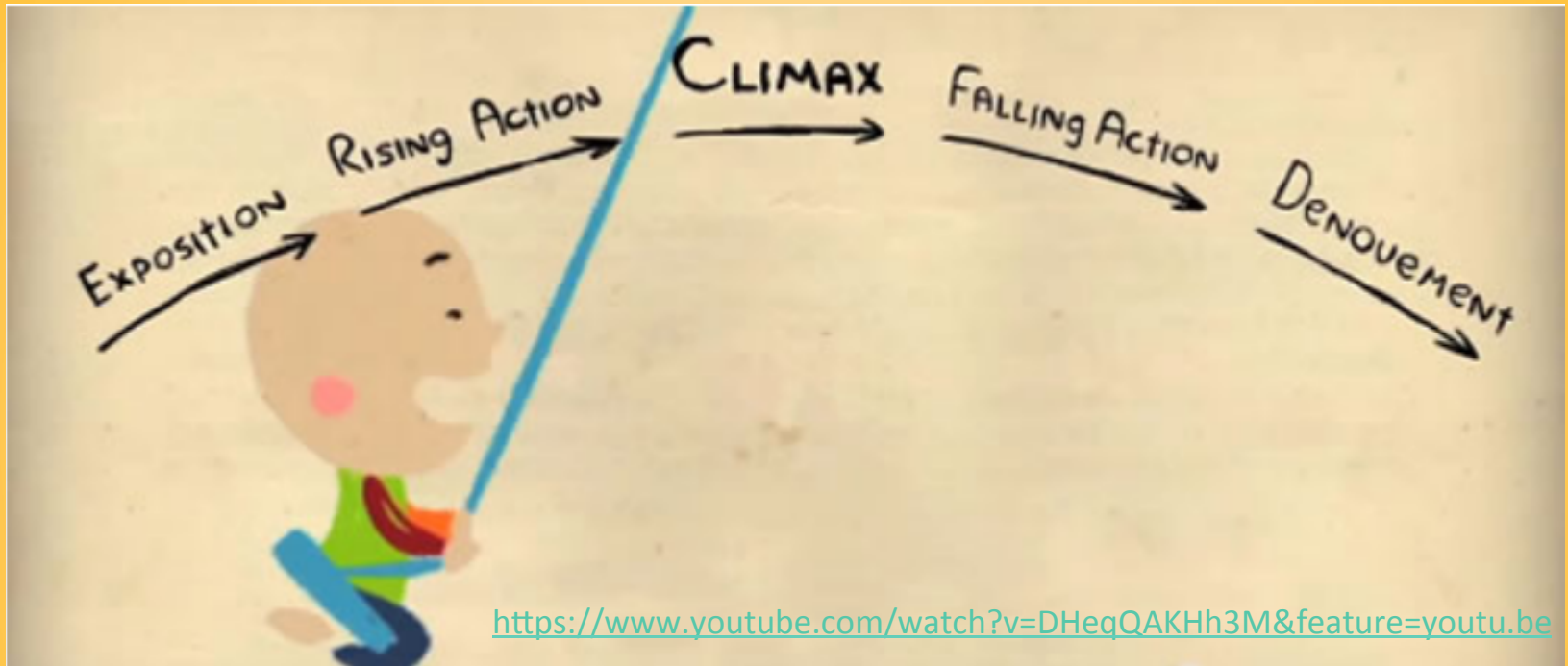
Storytelling may seem like an old-fashioned tool, today – and it is. That's exactly what makes it so powerful. Life happens in the narratives we tell one another.

– Harrison Monarth

The Irresistible Power of Storytelling as a Strategic Business Tool

Why Your Brain Loves Good Storytelling

I want to tell you a story about two neurochemicals...



- Cortisol—which people feel as distress and encourages them to pay attention to the story.
- Oxytocin—which promotes connection and care and encourages people to feel empathy.

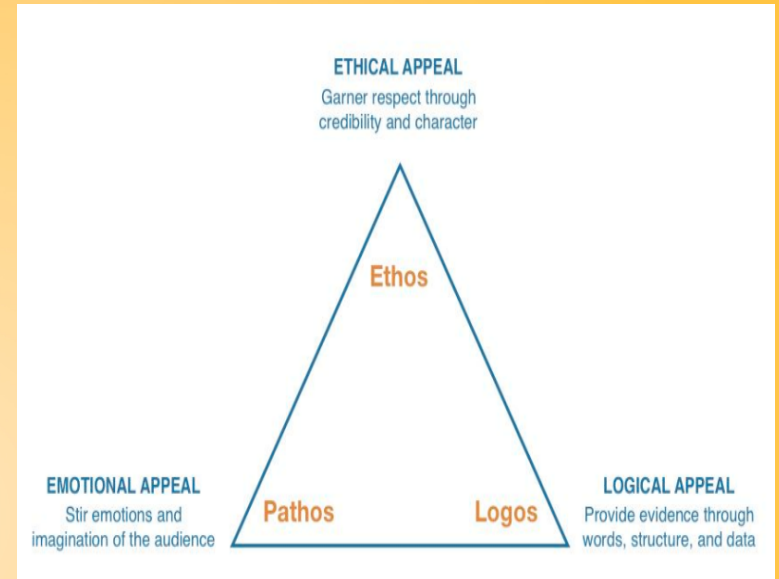
More on Brain Research...

- The brain is an energy hog.
- The 'goldilocks zone' is between 18-20 minutes for a presentation.
- Paint a mental picture with multisensory experiences.

Science of Persuasion

Storytelling is the ultimate tool of persuasion.

Persuasion occurs when three components are represented



ETHICAL APPEAL

Connect with the audience through shared values and experiences. Create the right balance of analytical and emotional appeal; this will bolster your credibility. The audience will feel connected to and have respect for your idea.

Credibility

LOGICAL APPEAL

Develop a structure to keep the presentation intact and help it make sense. Make a claim and supply evidence that supports the claim. It is necessary to use logical appeal in all presentations.

Evidence-Data

EMOTIONAL APPEAL

Stimulate your audience through appeals to their feelings of pain or pleasure. When people feel these emotions, they will throw reason out the window; people make important decisions based on emotion.

Emotion-Feelings

Structure Your Presentation Like a Story

Telling stories is the virtual equivalent of taking people on a field trip, helping them to experience the content at a much more profound level.

– Carmine Gallo

Talk Like TED: The 9 public-speaking secrets of the world's top minds

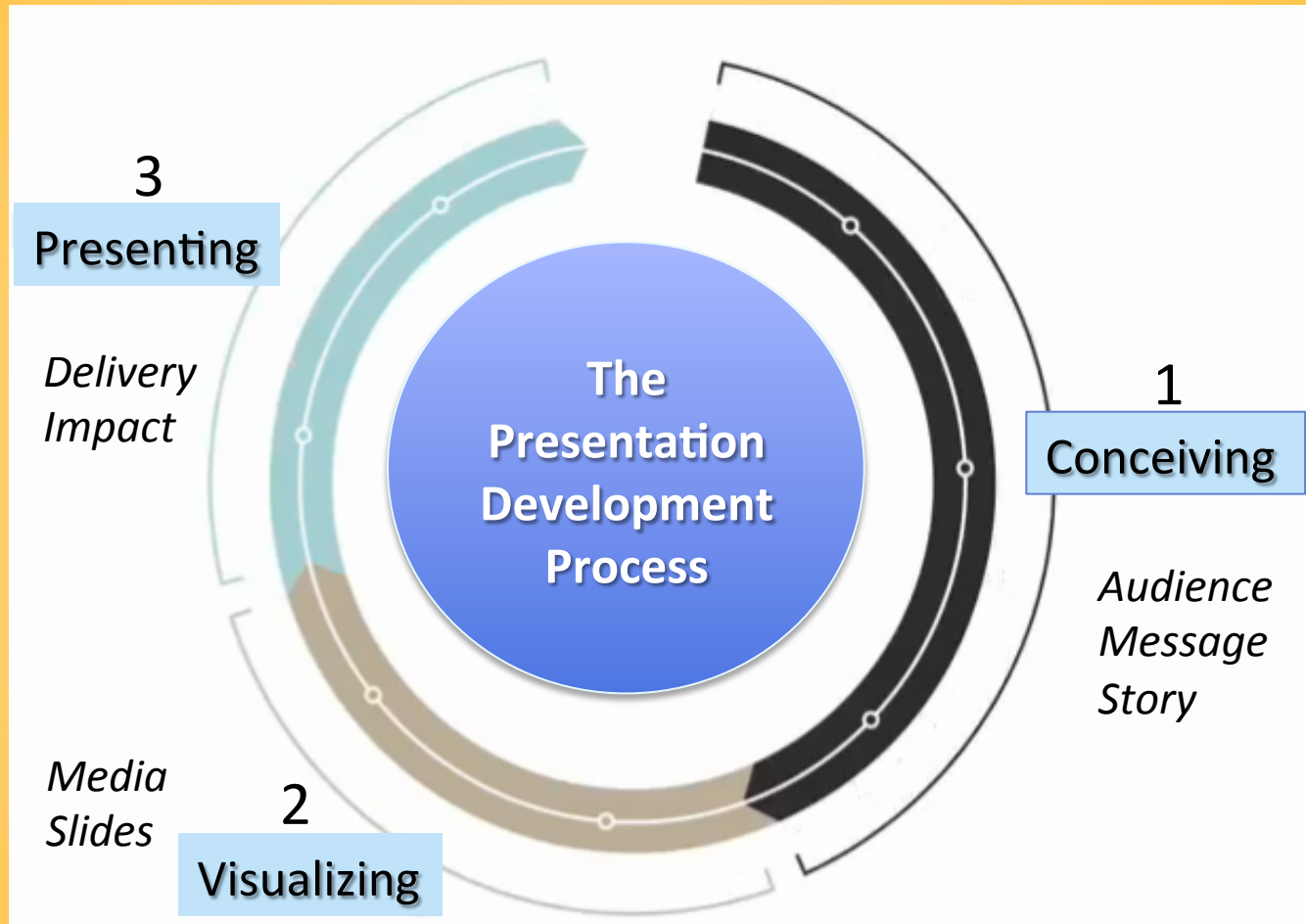
Structure Your Presentation Like a Story

	 REPORT EXHAUSTIVE	 PRESENTATION EXPLANATORY	 STORY DRAMATIC
	Documentation Informational and factual, emphasizing accuracy and exhaustive details, facts, and figures	Oral Delivery Persuasive and motivating, emphasizing explanation and making the meaning clear	Cinema and Literature Experiential and emotional, emphasizing evocative and implied information
STRUCTURE	Topical, hierarchical	Dual, alternating between facts and storytelling	Dramatic (exposition, rising action, climax, denouement)
ACTIVITIES	Survey, collect, record, evaluate, notify, update	Unfold, simplify, clarify, interpret, illuminate, elucidate	Experience, express, emote, sense
RESULT	Findings, evidence, facts, details	Motivation, activation, engagement	Memories, links, associations
DELIVERY	Communicate in a plain, direct, and precise manner	Communicate in a believable, credible, and engaging manner	Communicate in an expressive and theatrical manner

Engage Through Story:

<http://vimeo.com/14622215>

Structure Your Presentation Like a Story



http://www.ted.com/talks/nancy_duarte_the_secret_structure_of_great_talks

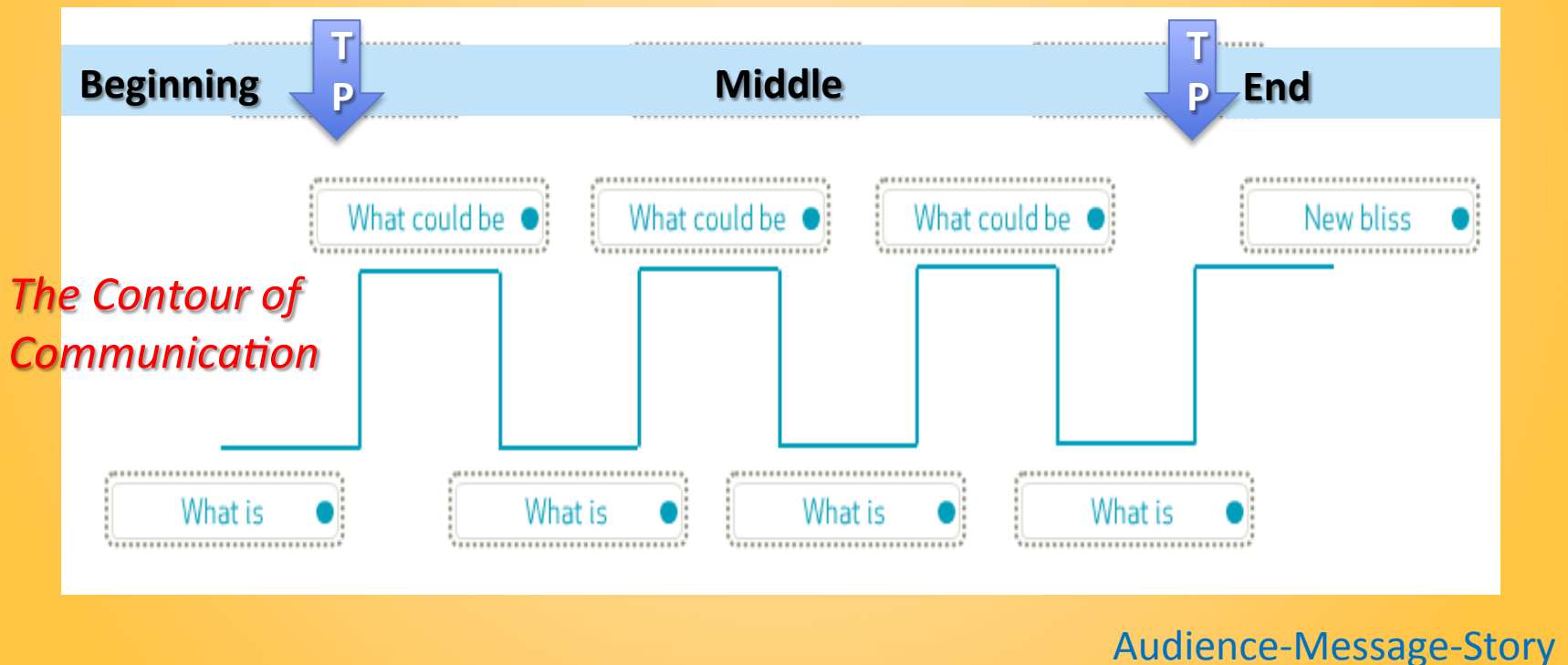
Structure: Storytelling Tools and Techniques

- Big Idea, 3 key messages
- Pictures instead of words
- Find the narrative in the data.
- Create slides that people can “get” in 3 sec.
- Have two natural ending points



Story Templates Create Structure

Presentations should have a clear **beginning**, **middle**, and **end**. Two clear **turning points** (**call to adventure** and **call to action**) in a presentation's structure guide the audience through the content and distinctively separate the beginning from the middle and the middle from the end.



Give Voice to Data

***A story** can go where quantitative analysis is denied admission: our hearts.*

Data can persuade people, but it doesn't inspire them to act; to do that, you need to wrap your vision in a story that fires the imagination and stirs the soul.

-- Harrison Monarth

The Irresistible Power of Storytelling as a Strategic Business Tool

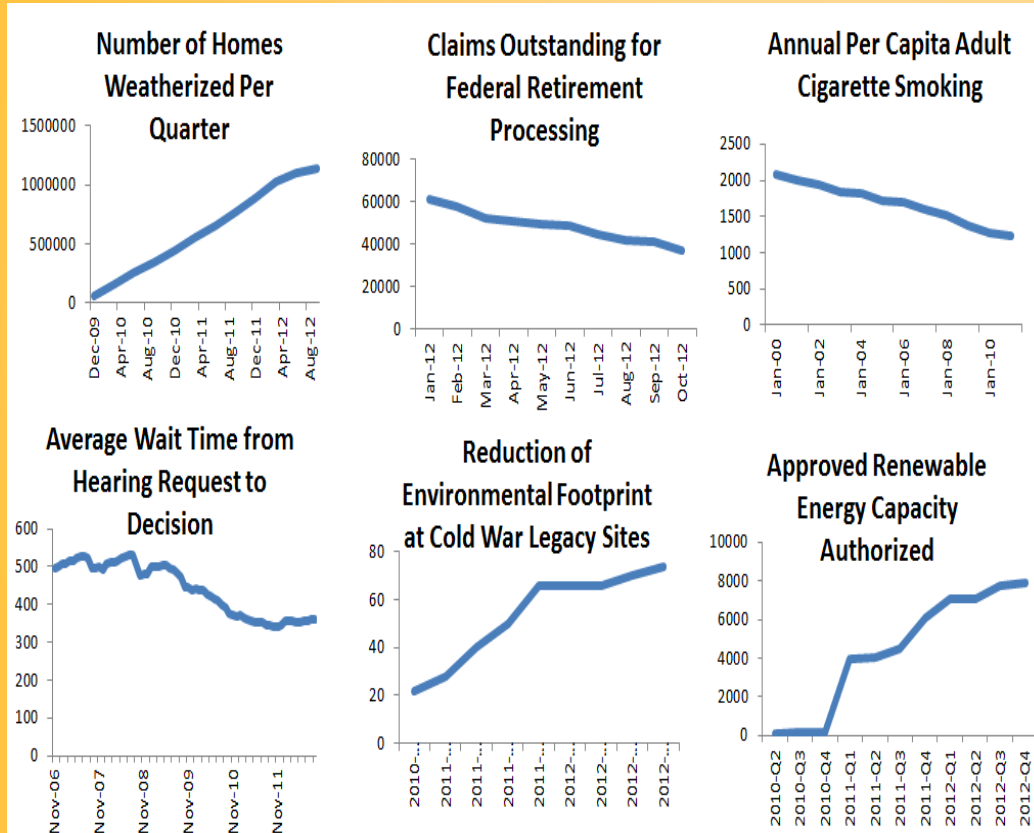
Give Voice to Data

Data suggests there are compelling stories waiting to be told. Data slides are not really about the data. They are about the meaning of the data.



Get a rise out of data.

- Add a multimedia element in the form of visuals to bring the data alive -- help audience 'feel' the emotion behind the numbers.
- Bring the data to life by including personal stories of those lives behind the data.
- *Don't think about what you want people to know; think about how you want them to feel.*



Give Voice to Data: Power of Story



https://www.youtube.com/watch?v=clp_gtkBP5U&list=PLvdwyPgXnxxVfj0MIbNuH2XCt5noUcFA9&index=6

Give Voice to Data

EXAMPLE:

New perspective:

Seeing the Holiday Lights from Space



Miguel Román, Research Physical Scientist at the National Aeronautics and Space Administration (NASA) Goddard Space Flight Center (GSFC), shares a fascinating perspective on viewing culture from space and the EKG of cities through the lens of satellite data; and drawing from a study of holiday lights that examines how energy usage can be dictated by the society we live in and routines of that society.

https://www.youtube.com/watch?v=c4WtcW_Q_Lk&index=3&list=PLvdwyPgXnxxVfj0MIbNuH2XCt5noUcFA9

Give Voice to Data

EXAMPLE:

The Best Stats You've Ever Seen



There is no better way to illustrate what it means to tell a clear and powerful story using data than Hans Rosling's famous TED 2006 talk. He tells his story entirely based on numbers. With the drama and urgency of a sportscaster, statistics guru Hans Rosling debunks myths about the so-called "developing world."

http://www.ted.com/talks/hans_rosling_shows_the_best_stats_you_ve_ever_seen

Part I: Primer Summary

- **Story.** While gathering and analyzing meaningful data is a critical step in the research journey, it takes more to really engage others so that they understand, engage with, and use that data. **Story** is often the missing piece of the puzzle. Stories convey meaning.
- **Structure.** Use **story templates** to create structure for presentations to shift from simply transferring information to *producing an experience* for audience that engage, transform and activate them.
- **Facts Alone Fall Short.** Facts alone are not sufficient to persuade. Facts need to be complemented with just the right balance of creditability and content that tugs at the heartstrings.
- **Give Voice to Data.** Move from data to meaning. Telling the narrative implied in the numbers helps others see the meaning in the numbers.

*Every **presenter** has the potential to be great;
Every **presentation** is high stakes; and
Every **audience** deserves the absolute best.*

References & Additional Reading

- Duarte, Nancy, **HBR Guide to Persuasive Presentations**, Harvard Business School Publishing Corporation, 2012, ISBN 978-1-4221-8710-4
- Gallo, Carmine, **Talk Like TED: The 9 public-speaking secrets of the world's top minds**, St. Martin's Press, 2014, ISBN 978-1-250-04112-8 (hardcover)
- Dietz, Karen and Silverman, Lori, **Business Storytelling for Dummies**, John Wiley & Sons, Inc., 2014, ISBN 978-1-118-66121-5 (paperback)

References & Additional Reading

- *'How to Tell a Great Story,'* Carolyn O'Hara, Harvard Business Review (HBR Blog Network), 2014
<http://blogs.hbr.org/2014/07/how-to-tell-a-great-story/>
- *'The Irresistible Power of Storytelling as a Strategic Business Tool,'* Harrison Monarth, Harvard Business Review (HBR) Blog Network, 2014
<https://hbr.org/2014/03/the-irresistible-power-of-storytelling-as-a-strategic-business-tool/>
- *'Why Your Brain Loves Good Storytelling,'* Paul Zak, Harvard Business Review (HBR Blog Network), 2014
<https://hbr.org/2014/10/why-your-brain-loves-good-storytelling/>
- *'10 tips on how to make slides that communicate your idea, from TED's in-house expert,'* by TED Staff,
<http://blog.ted.com/2014/07/15/10-tips-for-better-slide-decks>

BACK UP SLIDES

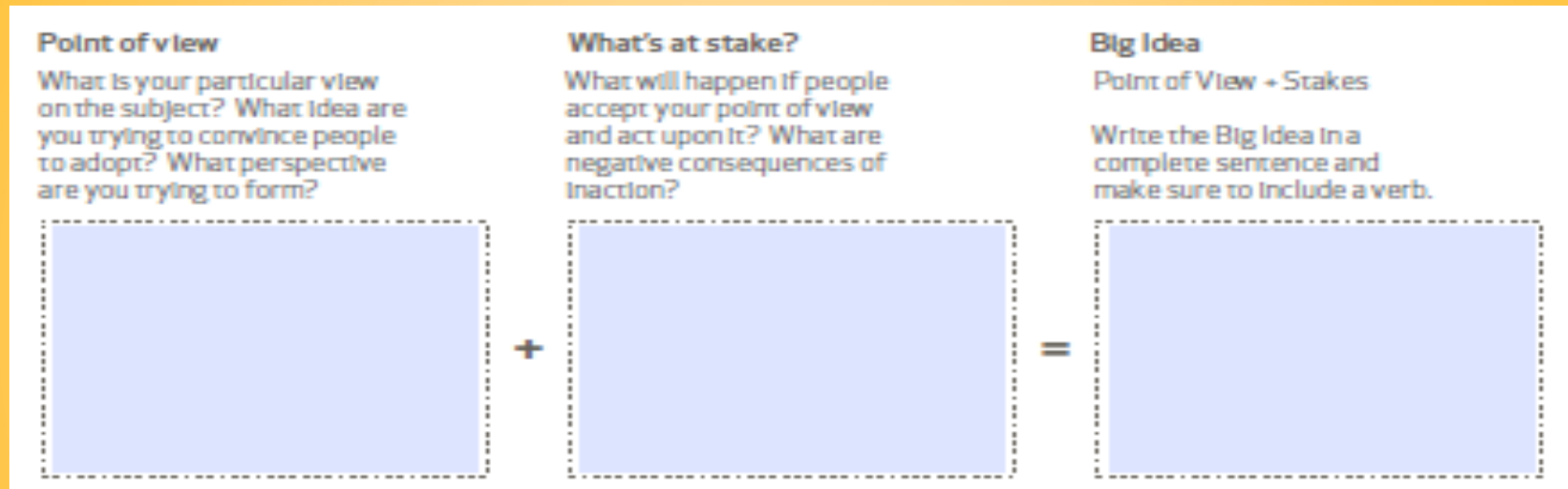
Part I



TRY THIS

Exercise 1: Define the Big Idea

The one key message that you MUST communicate.



Creating a Twitter-friendly headline. If you can't explain your big idea in 140 characters or less, keep working on your message. The discipline brings clarity to your presentation and helps your audience recall the one big idea you're trying to teach them.

TRY THIS

Exercise 2: Message Mapping

The technique helps to keep your content clear and concise.

Step 1: *Create a Twitter-Friendly Headline*

--What is the single most important thing you want audience to know?

Step 2: *Support the Headline with Three Key Messages*

Step 3: *Reinforce the Three Messages with Stories, Statistics, and Examples*

-- Add bullet points to each of the three supporting messages.

--Supporting points can include stories, examples, anecdotes, or meaningful statistics.

TRY THIS: Science of Persuasion

- Take your presentation and categorize the content into one of the three categories: Ethos (credibility), Logos (evidence and data), and Pathos (emotional appeal).
- How does your **pathos** stack up against the rest? If your emotional appeal is minimal, you might want to rethink your content before you give this presentation, like adding more stories, anecdotes, and personal insights.