Stories are valuable knowledge-sharing mechanisms. But why?

- Stories provide context
- Stories reveal process
- Stories emphasize the human element
- Stories are sensemaking
Context

• Neil DeGrasse Tyson: “Often the ‘why’ isn’t, ‘Here’s the answer.’ The ‘why’ is, ‘Here’s the landscape in which this activity is unfolding.’”
Technical Context: The Atlas Centaur failure

March 26, 1987: a warm, cloudy day at KSC

Launch criteria include: “The flight path of the vehicle should not be through middle-level cloud layers 6,000 feet or greater in depth, when the freezing level is in the clouds.”
Technical Context: The Atlas Centaur failure
Technical Context: The Atlas Centaur failure

Apollo 12: November 14, 1969
The missing info: Induced lightning
Organizational Context: Challenger

Proximate cause: O-rings turn brittle in cold weather.
Organizational Context: *Challenger*

Organizational **Root causes** revealed by the story of what happened:

- Schedule pressure
- Distance/poor communication among team members
- Preconceptions about engineering “proof”
Process

Failure and success are the outcome of a chain of events: not only “what” but “how.”

Stories are built of chains of cause and effect: “A led to B, which led to C:”
How did they make the “sky crane” EDL technology work?
Process: MSL Sky Crane

• Experience

• Documentation of earlier missions

• Board of skeptics
  – Rounded up skeptics from Viking, Apollo, et al.
  – “To make sure we’re not all drinking the Kool-Aid together.”
    (Rob Manning)
  – Three meetings over more than two years
Process: *Pathfinder*

The story shows:

- How to find new ideas
- How social networks work

  “I told my friend Miguel San Martin, ‘I need to get Doppler radar on the vehicle to measure velocity.’ He puts two fingers up and says, ‘Give me two pictures.’ I said, ‘Oh my God, what a brilliant idea. Who should I talk to?’ He says, ‘Call Andrew Johnson. He does two-dimensional image correlation algorithms.’” (Manning)
The Human Element

Documentation often leaves people out.

Stories are human centered: a “hero” facing a challenge, making choices, acting.

• Demonstrate values, determination, resourcefulness, courage

• Inspire action through identification
Human Element: Kim Ess

Orbital Boom Sensor System Project Manager (2003 - 2005)
Human Element: Kim Ess

Her marching orders: Do the work in six months for under $40 million.

• Told the Program Requirements Control Board: the project would cost $100 million and we had less than a 10 percent chance of completing the project in the next ten months.

“We were working so hard we didn’t have time to do anything but tell the truth.”
Sensemaking

Creating a story is a learning process. You understand what happened by:

• Deciding where the story begins
• Choosing actions and elements that matter
• Defining cause and effect
Knowledge Narrative in 2020

Use technology to make “documents” richer, more story-like:

• Video, videoconferencing, interactive docs

Continue to push for in-person story-telling:

• Interaction
• Inspiration