WE25

EMBRACE *Your* STORY

1:45 PM – 2:30 PM
Saturday October 26, 2024

STORYTELLING FOR ENGINEERS

SIMPLIFYING COMPLEX CONCEPTS

Presented By: Olivia Wright

EMBRACE *Your* STORY

INTRODUCTION

- B.S. INDUSTRIAL ENGINEERING & B.S. MANAGEMENT
- Alumna of KETTERING UNIVERSITY in Flint, MI
- Tactical Capacity Planner for MICHELIN
- Previous PRESIDENT of her collegiate SWE section.
- Enjoys exploring new fitness routines, painting, travelling, puzzles, and watching scary movies.

LEARNING OBJECTIVES

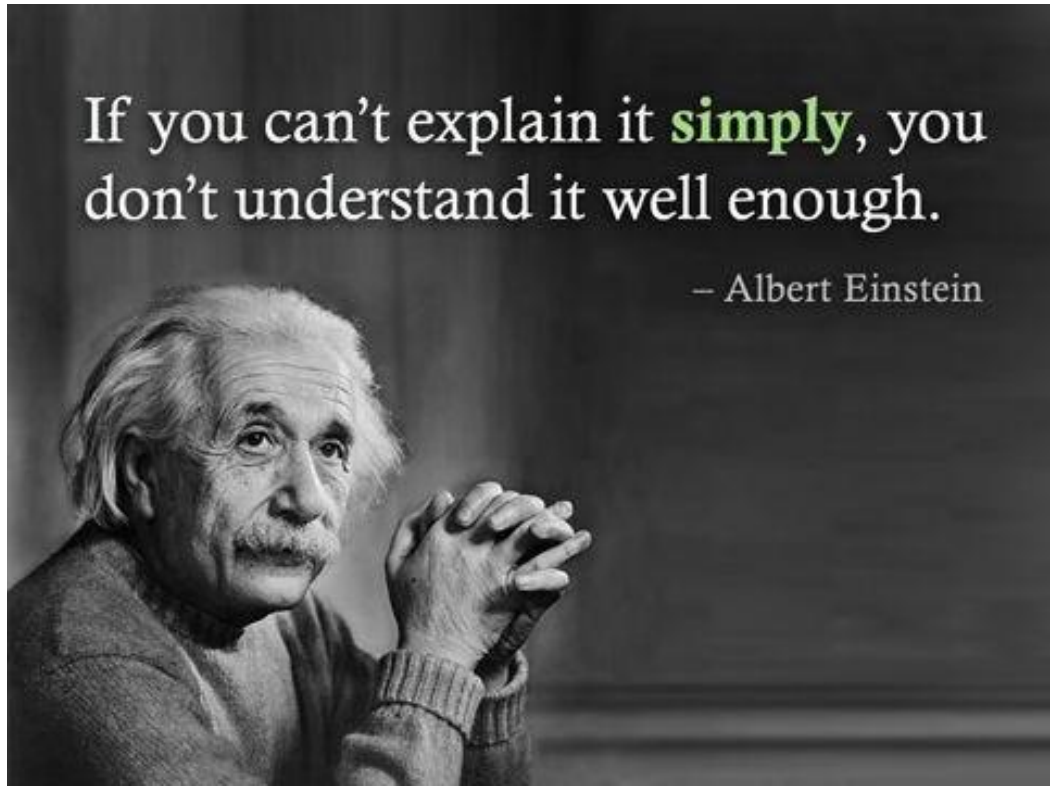
- MASTER STORYTELLING TECHNIQUES TO SIMPLIFY TECHNICAL CONTENT.
- ENHANCE AUDIENCE ENGAGEMENT AND UNDERSTANDING IN PRESENTATIONS.
- APPLY NARRATIVE STRATEGIES TO COMMUNICATE ENGINEERING IDEAS EFFECTIVELY.

WHY STORYTELLING MATTERS

- Engineers are natural problem-solvers but not always trained to communicate simply.
- Consider what's at stake…
  - Lost Funding
  - Misguided Teams
  - Misaligned Decisions
  - Missed Innovation

DATA ≠ COMPREHENSION

CHARTS ≠ BUY-IN



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"In the Challenger disaster, engineers knew the O-rings had limitations in cold weather. But **their risk communication wasn't framed in human terms**—what seemed like a tolerable risk in numbers proved catastrophic in reality."

— Adapted from Edward Tufte's analysis in
The Visual Display of Quantitative Information

THE POWER OF FRAMING – THE "$300 MILLION BUTTON

A major e-commerce company noticed that many users were abandoning their shopping carts at checkout.

Engineering Solution:
The dev team had built a seamless checkout system—but users still dropped off.

Breakthrough:
A UX designer reframed the problem through storytelling.
Instead of showing data, they told a story:

"Imagine you're in a store. You've picked out everything you want. You walk to the register—and the cashier says, 'Before you can pay, you need to create an account.' You'd walk out, right?"

That story reframed the issue.
The team added a simple **"Continue as Guest"** button.
Result? An extra **$300 million in annual revenue**.

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STORYTELLING FRAMEWORK

Know Your Audience	Audience Type
	"So What?" Rule
Build a Narrative Arc	Even Highly Technical Work Can Be Told As A Story
	Problem → Process → Breakthrough → Impact
Show, Don't Just Tell	Avoid Dense Graphs
	Use Progressive Buildup

KNOW YOUR AUDIENCE

EXECUTIVES

Want: ROI, outcomes, and big-picture
Prefer: analogies, high-level data, and direct bottom-line statements

Speak In: Headlines, not Footnotes

PEERS

Want: accuracy, methodology, and rationale
Prefer: process transparency, testing conditions, and trade-offs

Speak In: Logic Paths and Dependencies

PUBLIC

Want: clarity, context, and relatable comparisons
Prefer: visual metaphors and real-world relevance

Speak In: Metaphors, not Metrics

THE "SO WHAT?" RULE

What's the one thing this audience needs to walk away with?

Use phrases like:
"The benefit of this is _____"
"The reason this is important is _____"

Focus and Relevance:

- Helps to keep engineering work focused and relevant
- Prompts engineers to consider the practical implications
- Prevents them from getting bogged down in details

Value and Impact:

- Identify the value and impact of their work
- Ensures that resources are being used efficiently

Justification and Communication:

- Helps justify decisions and communicate effectively
- Demonstrates an understanding of the project /objectives

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BUILD A NARRATIVE ARC

What challenge or friction existed?

What did you try?
What failed?
What surprised you?

What worked?
What changed?

So what?
What did it achieve?

REAL WORLD EXAMPLE: NETFLIX RECOMMENDATIONS

PROBLEM

Viewers were overwhelmed by too many choices and often abandoned the platform without watching anything.

PROCESS

Netflix trained machine learning models on billions of viewing patterns, preferences, and behaviors - learning not just what people watched, but when, how often, and what they skipped.

BREAKTHROUGH

The system began predicting what users wanted to watch before they even searched, using collaborative filtering and deep learning to further personalize recommendations.

IMPACT

Netflix now credits over 80% of viewer activity to its recommendation engine, keeping users engaged and reducing churn dramatically.

SPEAK THEIR LANGUAGE: SAME DATA, NEW STORY

- EXAMPLE: How to communicate the Netflix findings to different audiences:

METRIC	VALUE	EXECUTIVE SUMMARY	PEERS (ENGINEERS)	PUBLIC/INTERN
Total Users	5M	"Increased user retention to 5M users engaged post-update."	"5M users triggered Event A 2+ times in 30 days."	"5M people used this new feature!"
Watch Time %	13.2%	"+13% = deeper engagement, stronger ROI."	"Avg. session up from 40.9 to 46.3 min/user."	"People watched longer. It's binge-worthy!"
Click Rate %	22.7%	"22.7% lift in UX conversion."	"CTR lifted 22.7%—statistically significant at 99% CI."	"More people clicked. This feature got their attention!"
Churn Rate %	1.1%	"1.1% churn = higher lifetime value (LTV)."	"Churn dropped from 1.3% → 1.1% post-release."	"Fewer people are cancelling Netflix!"

SHOW, DON'T JUST TELL

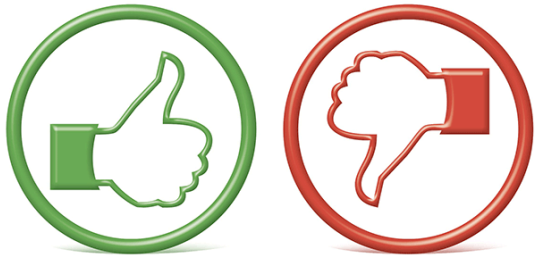
- If your audience can see it, they'll believe it - *and remember it*.
- Strive to create more engaging, visual, and memorable presentations.

DOs

Use Progressive Builds
Reveal one idea at a time to guide attention.

Add Annotations
Use arrows, highlights, and callouts to explain visuals.

Show Before & After
Let visuals demonstrate improvement or change.



DON'Ts

Overload Graphs
Avoid visuals with too many lines, axes, or acronyms.

Wall of Text
Don't cram 100+ words onto a single slide.

Jargon Overload
Skip unexplained technical terms that alienate non-experts.

THE "GRANDPARENT TEST"

Can you explain a complex idea to someone with zero background—in 60 seconds—with no slides?

Pick a project, task, or thesis you're working on and try to "tell the story"

PROBLEM → PROCESS → BREAKTHROUGH → IMPACT

Tip: Imagine you're explaining it to a curious grandparent or a high school student. If they get it, anyone will.

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REAL WOMEN, REAL WINS: THE STORYTELLING EDGE

KATIE BOUMAN & THE FIRST BLACK HOLE IMAGE

She didn't just process the data. She shared the *human side of the discovery*—and people listened.

HIDDEN FIGURES AT NASA

A formula doesn't save a life unless someone understands why it matters—fast.

DR. DANIELLE WOOD & SPACE FOR EARTH

She took satellite data—and turned it into policy change.

JOHNSON & JOHNSON & THE TYLENOL CRISIS

The best technical fix means nothing if you lose public trust. Storytelling protects that.

FINAL TAKEAWAYS

Storytelling is not fluff—it's strategy.

Engineers who communicate well are engineers who lead.

Ask yourself in every presentation: *"So what?"*

Thank you!

What questions do you have?

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I WANT TO HEAR FROM YOU!

Please take the survey to leave feedback on my WE25 session. Scan the QR code with your phone camera.

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