

# Welcome to NDNcomm 2015

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UCLA School of Theater, Film and Television

The Future of the Internet  
is the Future of Storytelling

Storytelling is the Last Mile  
in **Big Data and Analytics**



Stanford **SOCIAL INNOVATION** REVIEW  
*Informing and inspiring leaders of social change*

Organizational Development

Building a Storytelling Culture

Forbes / Entrepreneurs

SEP 17, 2015 @ 10:30 AM 1,017 VIEWS

Here's How Interactive Content Is Growth-Hacking Brands' Storytelling Abilities



**THE 4 I'S OF STORYTELLING: OUT OF THE SCREEN, INTO MY WORLD**

**IMMERSION**

Can I go deeper into the story-world, by learning more about it or by heightening my sensory experience of it?



**INTERACTIVITY**

Can I change or influence elements of the story?  
Can I interact with other people around the story?



**INTEGRATION**

Is a cohesive story being told across platforms?  
Can it interface with the real world in any way?



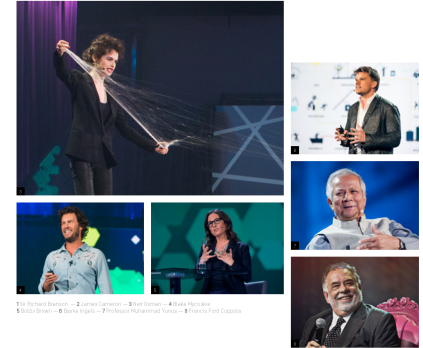
**IMPACT**

Does the story inspire me to take action in my own life, such as making a purchase or supporting a good cause?



"C2MTL [is] a hugely inspiring and entertaining conference that explores the intersection between commerce and creativity – something that has always been central to the Virgin brand."

Sir Richard Branson - Founder, Virgin Group, Speaker at C2MTL 2015



C2MTL 2015 Commerce + Creativity

THE WALL STREET JOURNAL.

CIO Journal

Exclusive reporting and analysis for corporate-technology executives.

Technology, Marketing and Storytelling

**SX SW** SCHEDULE

★ **Stories Asunder: Tales for the Internet of Things**

# Personal Health and Wellness

A new medical history based on personal genetics and exposure, as well as epigenetics.

23andMe

welcome ancestry research how it works buy help

welcome to you

23andMe

**Find out what your DNA says about you and your family.**

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- Contact your DNA relatives across continents or across the street
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Welcome to your secure online health connection

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If you have an Activation Code:

Create Account

If you do not have an Activation Code:

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UCLA Health Victim of a Criminal Cyber Attack

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Every beat counts.

chargeHR

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BUY NOW \$149.95

# Internet of Things

Coherent, engaging experiences coordinated over time and space.



**BRINGING INNOVATION TO THE NFL**  
ZEBRA MOTIONWORKS REAL-TIME PLAYER TRACKING SYSTEM

**2014 NEXT GEN STATS BY THE NUMBERS**

**2,000+**  
NFL PLAYERS TAGGED AND TRACKED



IN 2014, MORE THAN 2,000 DIFFERENT NFL PLAYERS WORE TWO SENSORS, ONE UNDER EACH SHOULDER PAD, EMITTING UNIQUE RADIO FREQUENCIES

20 RECEIVERS INSTALLED IN THE STADIUMS PICK UP THE RADIO FREQUENCIES AND PINPOINT EACH AND EVERY PLAYERS' FIELD POSITION, SPEED, DISTANCE TRAVELED, AND ACCELERATION

**5,800+**  
ZEBRA MOTIONWORKS TAGS DEPLOYED  
TO PLAYERS, OFFICIALS & EQUIPMENT (SHOULDER PADS, YARD MARKERS, PYLONS)



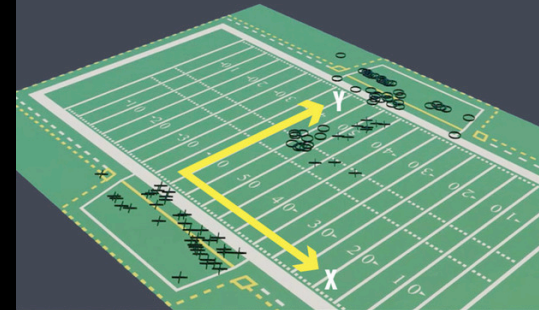
ZEBRA'S PATENTED RFID TAGS ARE THE SIZE OF A QUARTER AND REPRESENT VIRTUALLY NO ADDED WEIGHT LOAD TO A PLAYER'S UNIFORM

TWO TAGS ARE DISCREETLY INSERTED UNDER THE TOP FLAP OF SHOULDER PADS TO ENABLE REAL-TIME PLAYER METRICS TO BE COLLECTED AND MEASURED

**17,000+**  
PLAYS OF NEXTGEN STATS MEASURED



**1,692,000,000+**  
SETS OF XY PLAYER COORDINATES  
FOR PLAYER LOCATION MEASURED, TRANSMITTED AND STORED DURING NFL GAMES



**68+ BILLION**  
BYTES OF PLAYER POSITION DATA

NOW THAT'S A LOT OF PLAYER DATA!



ZEBRA



OFFICIAL ON-FIELD PLAYER TRACKING PROVIDER OF THE NATIONAL FOOTBALL LEAGUE

# Big Science

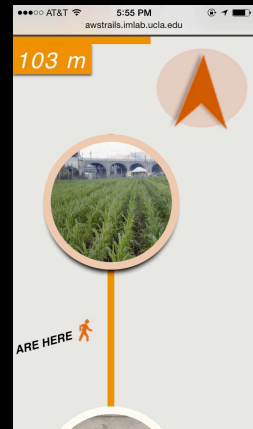
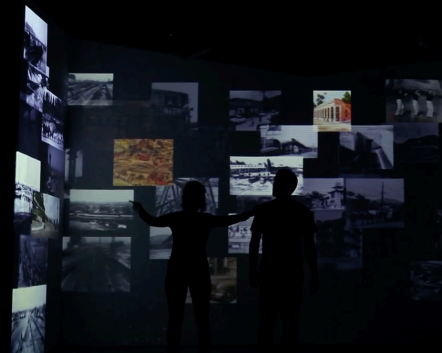
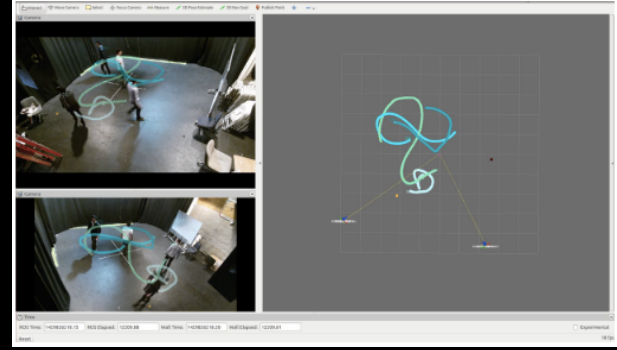
Exchange, provenance management, and public communication of huge amounts of data.



## Grand Challenges

- Clouds, Circulation & Climate Sensitivity
- Melting Ice & Global Consequences
- Climate Extremes
- Regional Sea-level Change & Coastal Impacts
- Water Availability

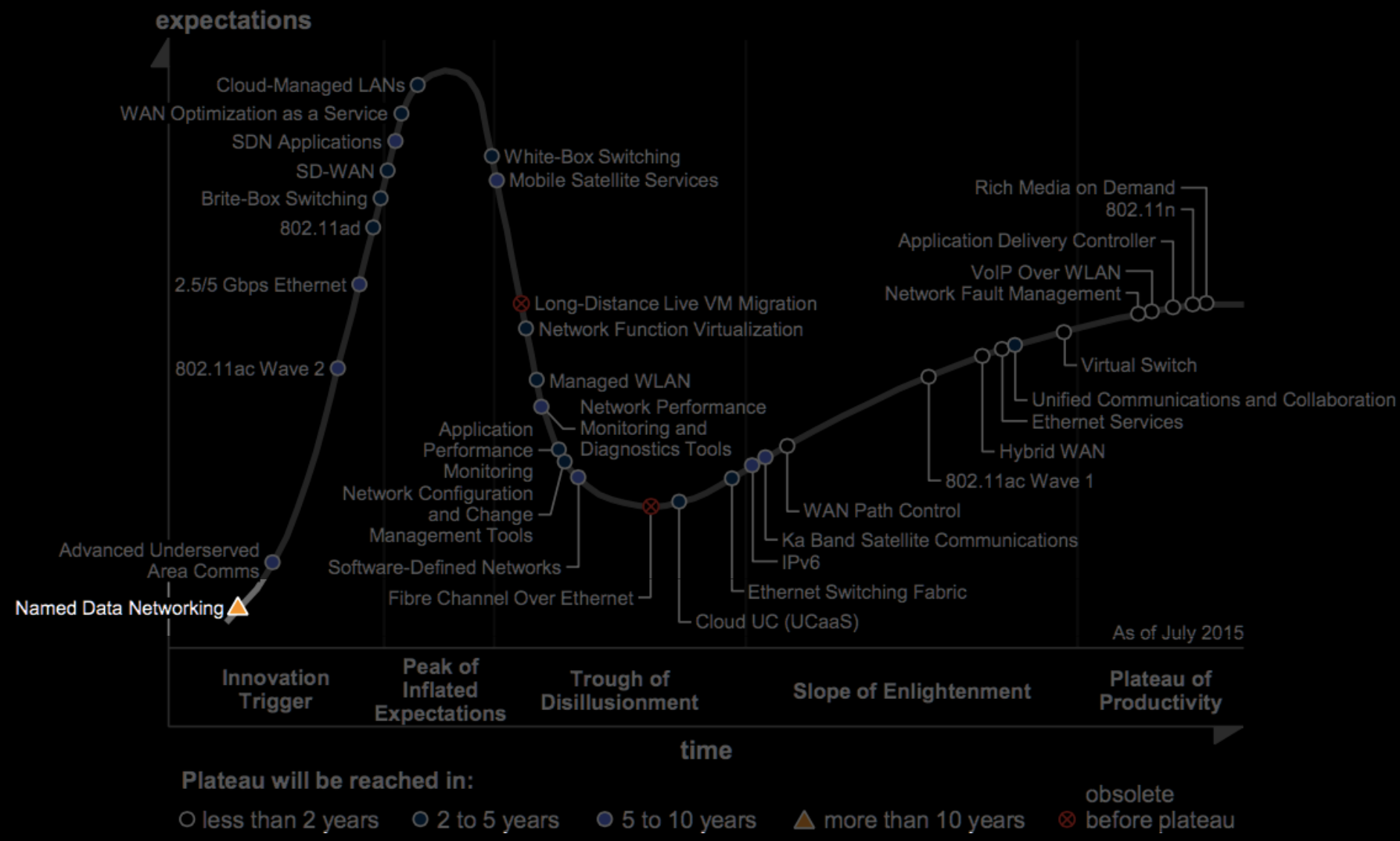
# Storytelling



But aren't those the edges? The fringe?



Figure 1. Hype Cycle for Networking and Communications, 2015



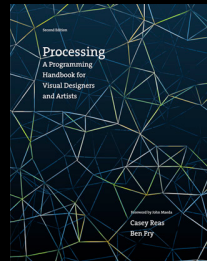
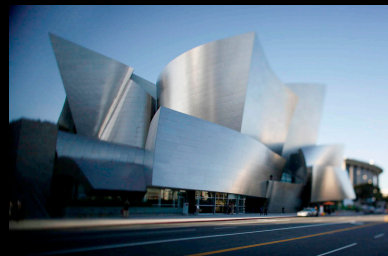
Source: Gartner (July 2015)

If we are asking people to look ahead in networking,  
let's look ahead to the applications that are coming.

# At the edges

For example,

- Multimedia experiences are created by designers and storytellers based on available technologies.
- Occasionally their goals directly motivate technologies.
- What motivates designers, storytellers, inventors, entrepreneurs...?
- The edges: of aesthetics, storytelling, interaction, design, etc.



# What do the edges do?

## Reformulate the Problem

“It is widely accepted that creative design is not a matter of first fixing the problem and then searching for a satisfactory solution concept; instead it seems more to be a matter of **developing and refining together both the formulation of the problem and ideas for its solution...**”

- Cross & Dorst (1999), quoted by Brooks (2010)


**Example:**

**Streaming video content will not stay static**

engadgē

YouTube's latest experiment: multiple camera angles

by Richard Lawler | @rjcc | February 4th 2015 At 2:33pm



Sports broadcasts were among the first to give viewers the chance to pick how they watch the action on the internet, but now YouTube is giving the feature a try. A video of artist Madilyn Bailey performing at YouTube Music Night lets users click through a choice of four camera angles as they watch, without



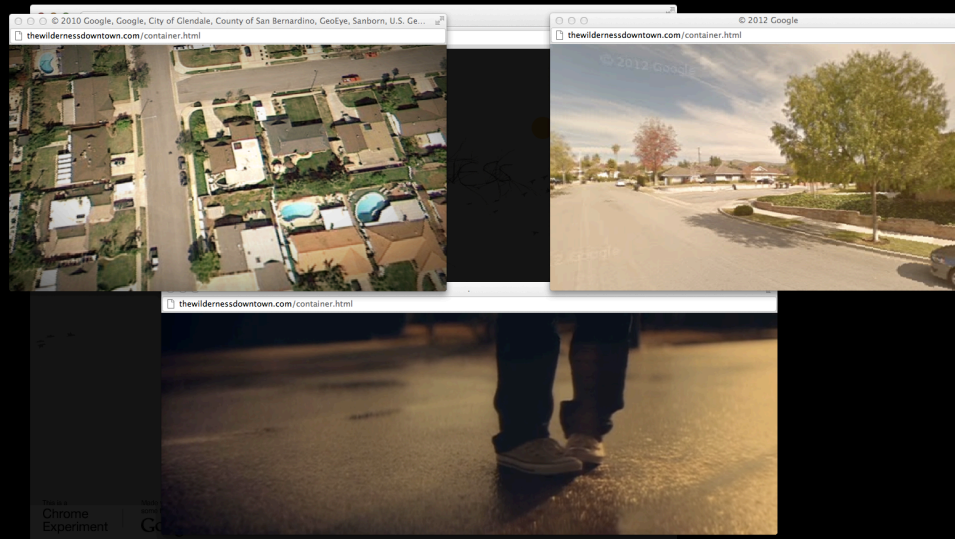
Maze Runner (2014), Fox

**THE JOHNNY CASH PROJECT**

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TIME: 00:00:19 FRAME: 151

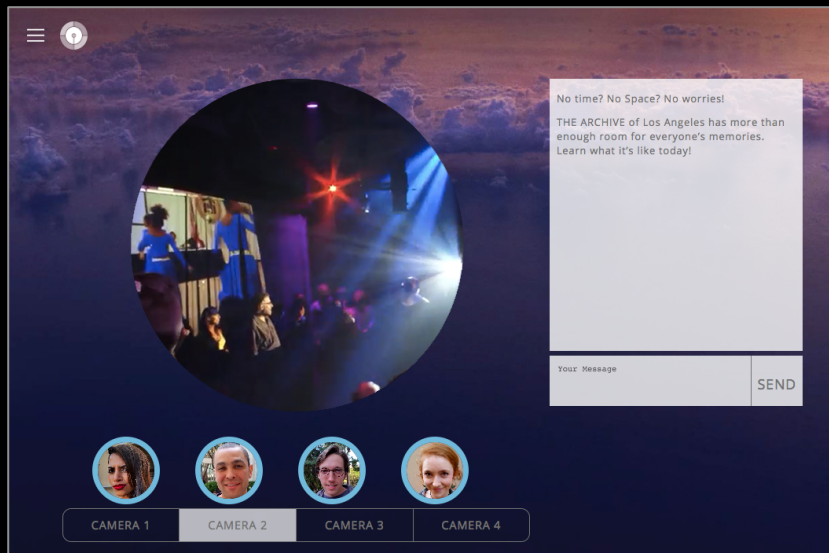
© 2010 Google, Google, City of Glendale, County of San Bernardino, GeoEye, Sanborn, U.S. Ce...  
thewildernessdowntown.com/container.html

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thewildernessdowntown.com/container.html

Chrome Experiment

The Wilderness Downtown

# Los Atlantis (UCLA, 2015)



**NDN Thought Experiment:**

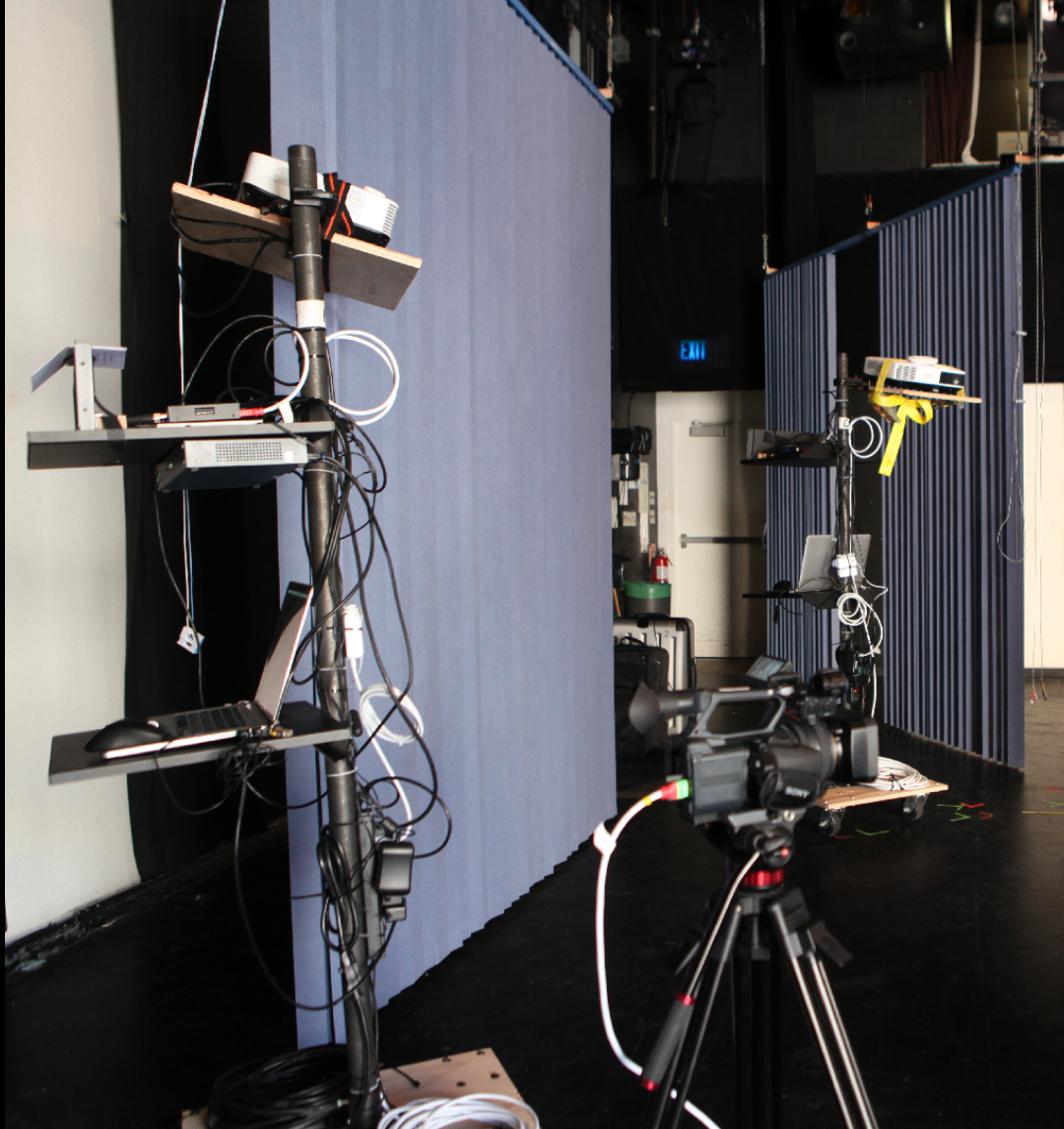
**How to best enable just-in-time client-side  
composability of streaming media elements?**



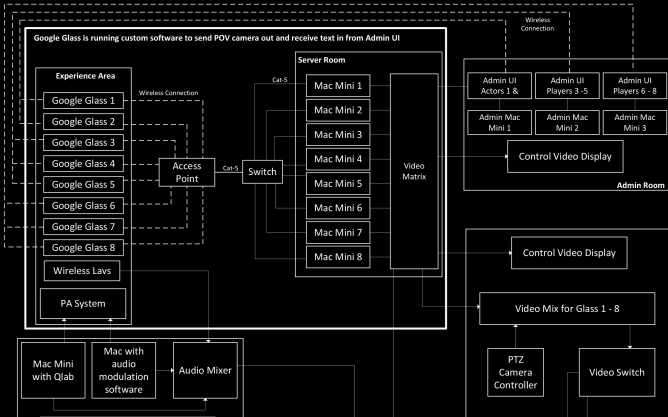
**“Expeditionary Networks”  
are more common than you think**

# 4 x Mobile Projector Tower

3-16Mbit/s down, 6+Mbit/s up ea.  
NDN control



# Grace Plains: Live-action Role Playing with Google Glass (2014)



	<b>3</b> Fredriksson	<b>4</b> Moser	<b>5</b> Sauvage	<b>6</b> Smyt
ion.	This doesn't have to be a conversation. You are a captain of industry. make a decision and make it so.	This doesn't have to be a conversation. You are a US Senator. LEAD. Make a decision, and make it happen!!!!	Do you know how to get back to the Lab?	Push for a group MPE and Sullick soon!
	SMYTHB	MOSER	SAUVAGE	SMYTH
		6:15:07PM	6:15:07PM	



NDN Thought Experiment:

Is IP-related brittleness holding us back  
from making more *expeditionary* networks?

## Going forward: What does this mean for NDN?

On NDN, app reformulation starts with the design of its namespace.

Storytelling apps from this year already using hierarchical data:

- Scene graphs for streaming 3D (Game engines)
- Processing networks for streaming 2D (Touchdesigner)
- App-level protocols in experimental multimedia (Open Sound Control)
- Message bus protocols (Robot Operating System)

But, mapping namespaces directly may not provide all the benefits it could...

- => Tussle between app, security, network requirements for naming is really challenging.
- => Efficient mechanisms for exchanging named data motivate more work on namespace synchronization as a higher level transport.

“It is widely accepted that creative design is not a matter of first fixing the problem and then searching for a satisfactory solution concept; instead it seems more to be a matter of **developing and refining together both the formulation of the problem and ideas for its solution...**”

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