

The current state of VR and AR

Phil Lelyveld

VR/AR program lead

University of Southern California

Entertainment Technology Center

8/30/16



Basic concepts

Commercial Definition

VR – Blocks out world

AR – see-thru overlay

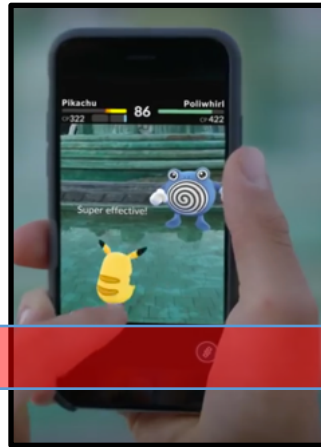




The AR – Reality – VR Continuum

Augmented Reality

Virtual Reality



Transitional
Mixed Reality
Blended Reality

VR platforms and markets



Magic Window

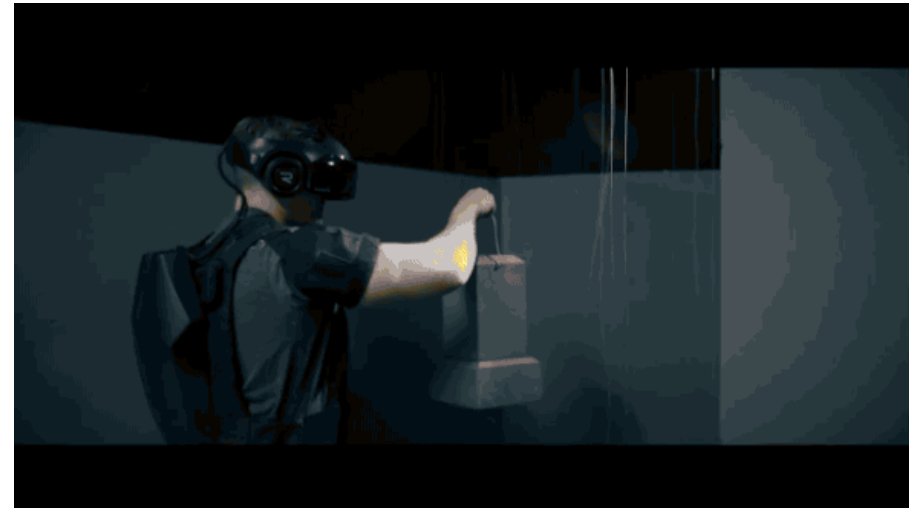


**Niche
\$\$\$**

HMD – Head Mounted Display



etcSM | Cellphone-based VR



Group or Location-based VR

Strengths of VR



Sense of 'Presence'



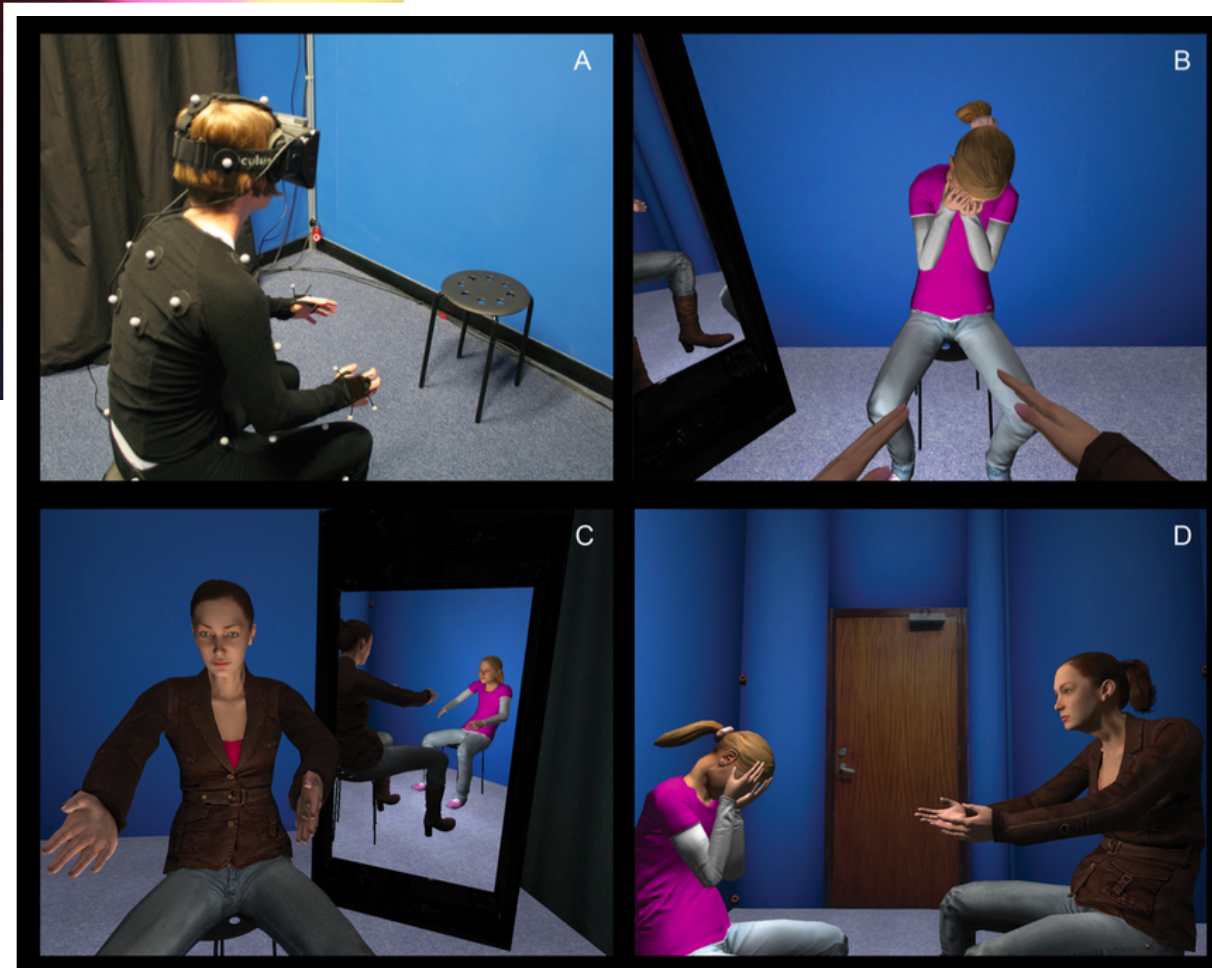
Heightened Sense of Empathy



Henry

Oculus Story Studio

Role Reversal



Agency



“Hunger” (Virtual Food Bank) by Nonny de la Pena

Ascendance of Sound Spatial Audio



NY Philharmonic – Concerts in the Park

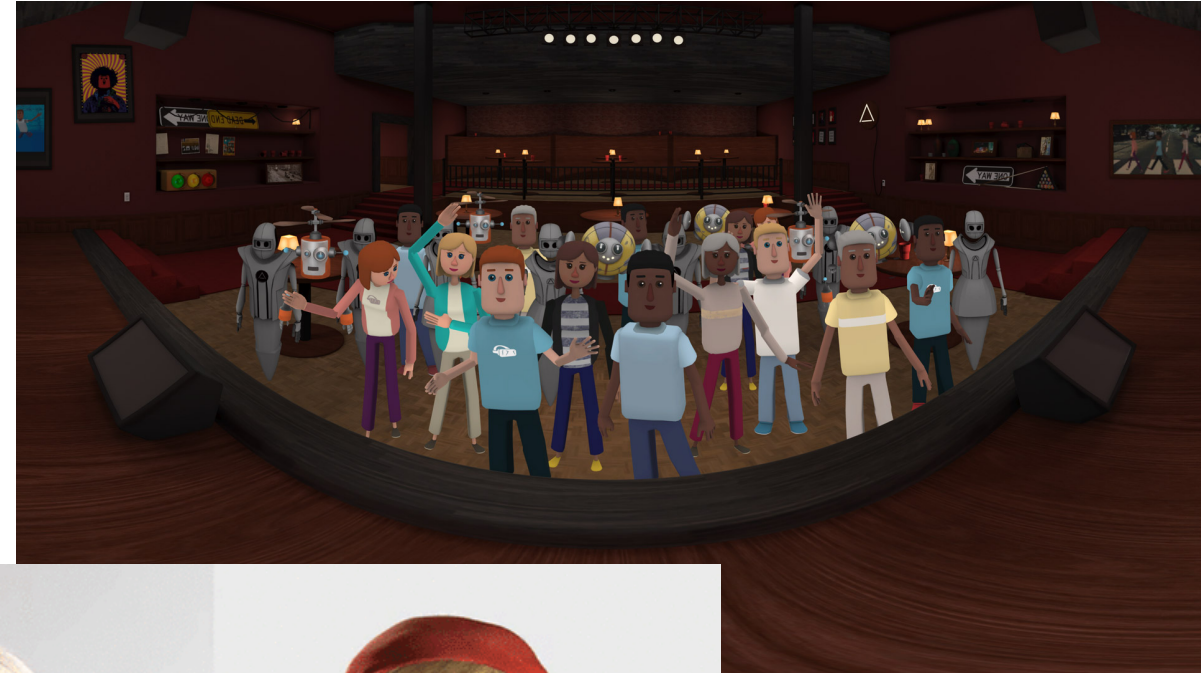
Microphone



VR is transforming industries



Social VR as killer app



World Building

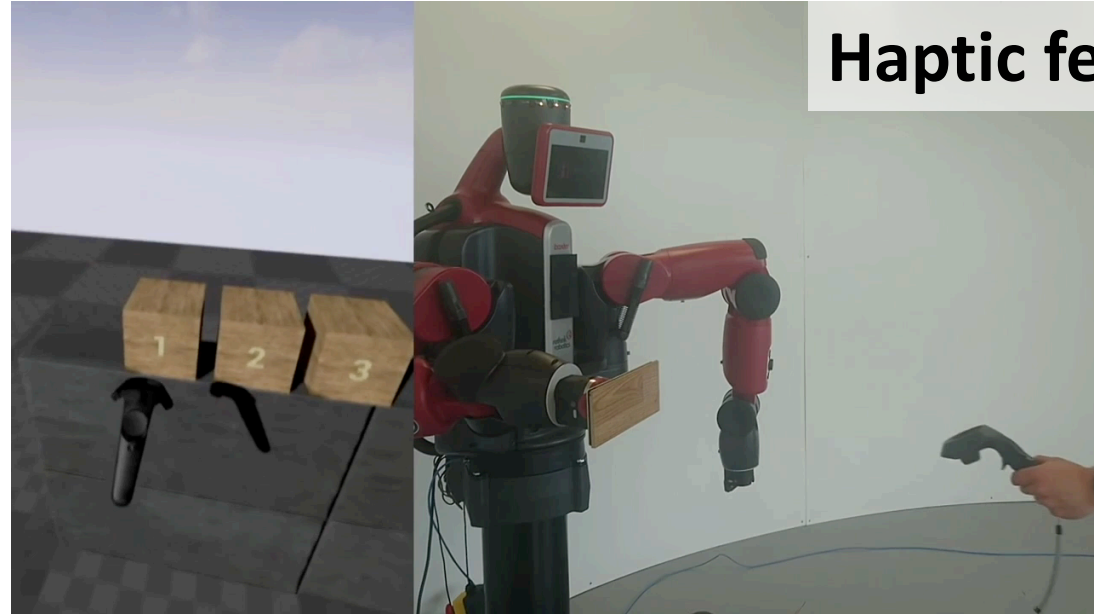
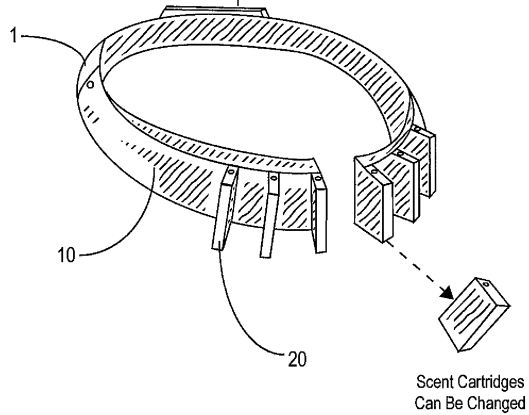
Storymaking

Engagement + storytelling



In Development

Scent necklace / collar



Haptic feedback



Galvanic
Vestibular
Stimulation

17 subjects



Synchronized heartbeats
Out-of-body experience

Pokemon

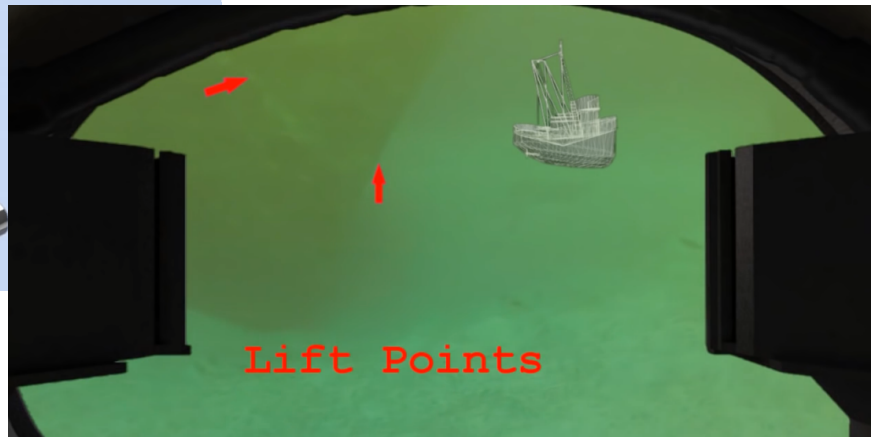


Big Bang Market Adoption

AR will dominate



Workplace efficiencies



Huge issues
currently being ceded to
'the market'

Ethics / Psychology

Trauma

Presence, Empathy, Proximity, and
Children

‘Emotional intensity’ controls or ratings?



Reinforce the
echo-chamber of
curated ideas?

Revisit the click-license?

Back-channel data

- Every move and response is tracked
- Ownership, monetization, ethics,...

Social Norms and Responsibilities (+ Legal issues)

ions ≡

The Washington Post

Sign In

The Switch

Holocaust Museum to visitors: Please stop catching Pokémon here

By [Andrea Peterson](#) July 12 

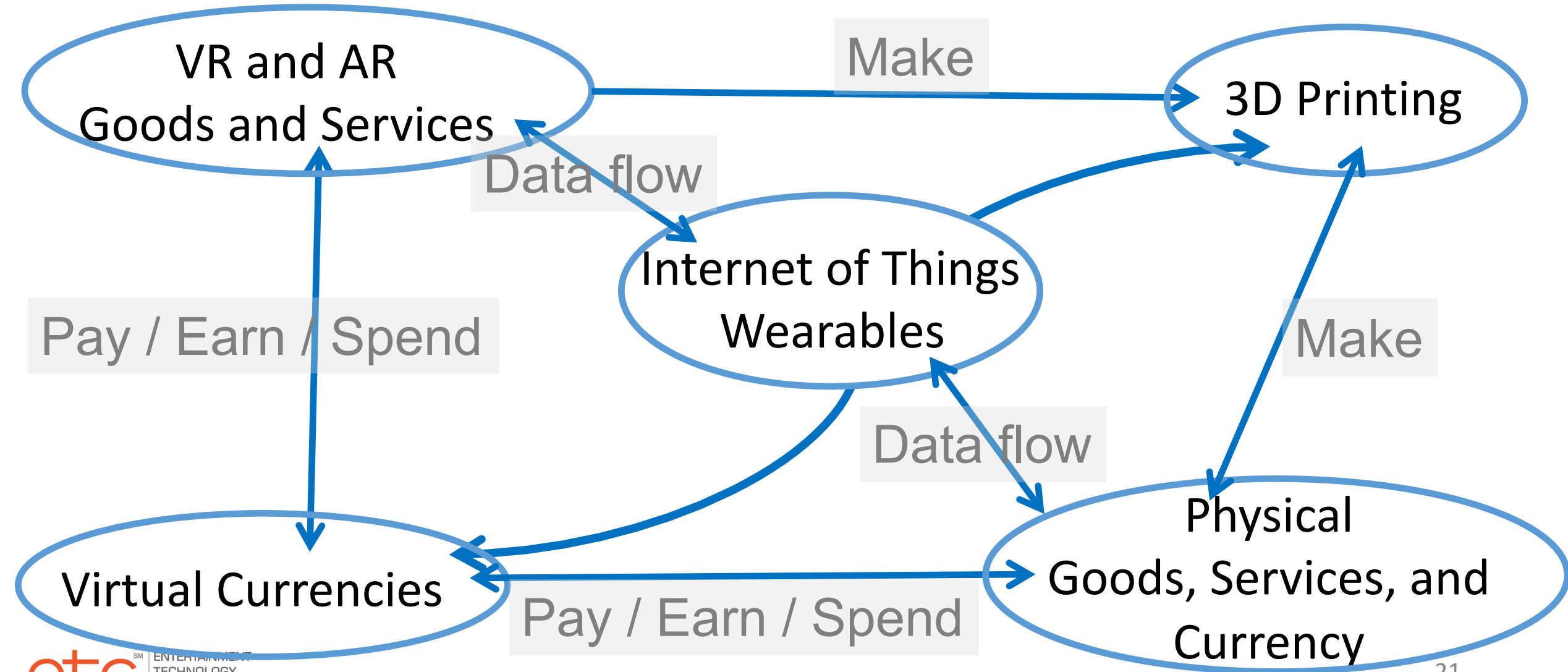
“Pokémon Go is just some markers on a map.
The politics is **someone else's problem**,...”

Brendan Keogh, Australian Journalist

Online gamer died on Poolbeg Pier ‘capture’ mission

5/12/16 Irish Times

Erasing the boundaries between real and virtual work and play





“The culture is ready for [VR+AR] now,
given the amount of tech that we touch right now
and the devices that we use daily.”

Ted Schilowitz, Futurist, Fox Studio

Consumers don't buy technologies,
they buy the experiences that the
technologies deliver



A large crowd of people at a tech event, many wearing VR headsets, with Mark Zuckerberg walking through the crowd.

Technology is morally neutral

Thank you

Phil Lelyveld

University of Southern California
Entertainment Technology Center



Jacki Morie

Owner/CEO
All These Worlds, LLC

Brent Bushnell

CEO, Two Bit Circus











Ascendance of Sound Spatial Audio



Microphone



