

Virtual Reality Hollywood, Airline Passengers, and beyond!

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Founded 1993 by George Lucas to
bring together technology and
entertainment visionaries to collaborate on
the future of entertainment technology



Adamantly neutral

- Discussions
- Research
- Collaborations
- Coverage

CURRENT MEMBER COMPANIES



Agenda

Intro Information – setting the stage

What makes VR new and different – the language of VR

Creating VR content

Social VR

VR on planes – tech and behavior

VR on planes – VR sickness

VR on planes – what can be done now

Looking forward

Close

Intro Information – setting the stage



In **Augmented Reality**, the world that you would normally see if you walked down the aisle without the screen is being **augmented – enhanced, supplemented, added to** - with additional data and experiences.

In **Virtual Reality** you are **virtually – nearly, almost** – but not really there in the grocery store aisle.

The AR – Reality – VR Continuum

Augmented
Reality

Real
Environment

Virtual
Reality



Transitional
Mixed Reality
Blended
Reality

Commercial Definition

VR – Blocks out world



AR – see-thru overlay



Different ways to have a VR experience

Magic Window

Cellphone-based viewer

Head Mounted Display (HMD)

Group VR

Virtual Reality on Cellphone or Tablet “Magic Window”

Swipe

Tilt and wave



Near \$0 cost of entry

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Cellphone-Based Viewer with Headphones



Near \$0 cost of entry
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Head Mounted Displays with Peripherals



Oculus Rift with Oculus Touch

Location Based Entertainment



The Void opens Times Square VR Center

First attraction: “Ghostbusters: Dimensions”

Opens July 1, 2016, developed in cooperation with the movie

Location Based Entertainment

**Asia Amusement & Attraction Expo (AAA)
Guangzhou, China (3/9-11/16)
9D VR Experiences
See The Stinger Report, April 2016**

9D VR EXPERIENCE

See The Stinger Report, April 2016

What makes VR new and different – the language of VR

Sense of 'Presence'



Place Presence



Into the Storm
VR Experience



Mark Bolas, Director for Mixed Reality Research,
USC Institute for Creative Technologies

Plausibility Presence



Mark Bolas, Director for Mixed Reality Research,
USC Institute for Creative Technologies


Heightened Sense of Empathy



Henry

Oculus Story Studio

PLelyveld@ETCenter.Org 7/28/15

The background image shows three main characters from Grand Theft Auto V: Michael, Franklin, and Trevor. They are standing in a city environment with power lines and a bridge in the background. Michael is on the left, Franklin in the center, and Trevor on the right. They are all wearing casual clothing and have serious expressions. A semi-transparent text box is overlaid on the image.

Grand Theft Auto video-game designer Joseph Delgado, upon experiencing the VR version of GTA:V

“I feel horrible about making this,” ... “You actually feel guilty. My mouth dropped the first time I shot someone in my GTA:V VR setup.”

5/13/16

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New ratings for 'emotional intensity'?
Personal space violation controls?

VR, Presence, Empathy, Proximity, and
Children

Agency



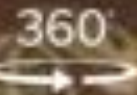
“Hunger” (Virtual Food Bank) by Nonny de la Pena

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Agency Immersive Journalism



“My Mother’s Wing”
By VRSE for UN



Creating VR content

Fundamental Design Choice

Camera-captured VR



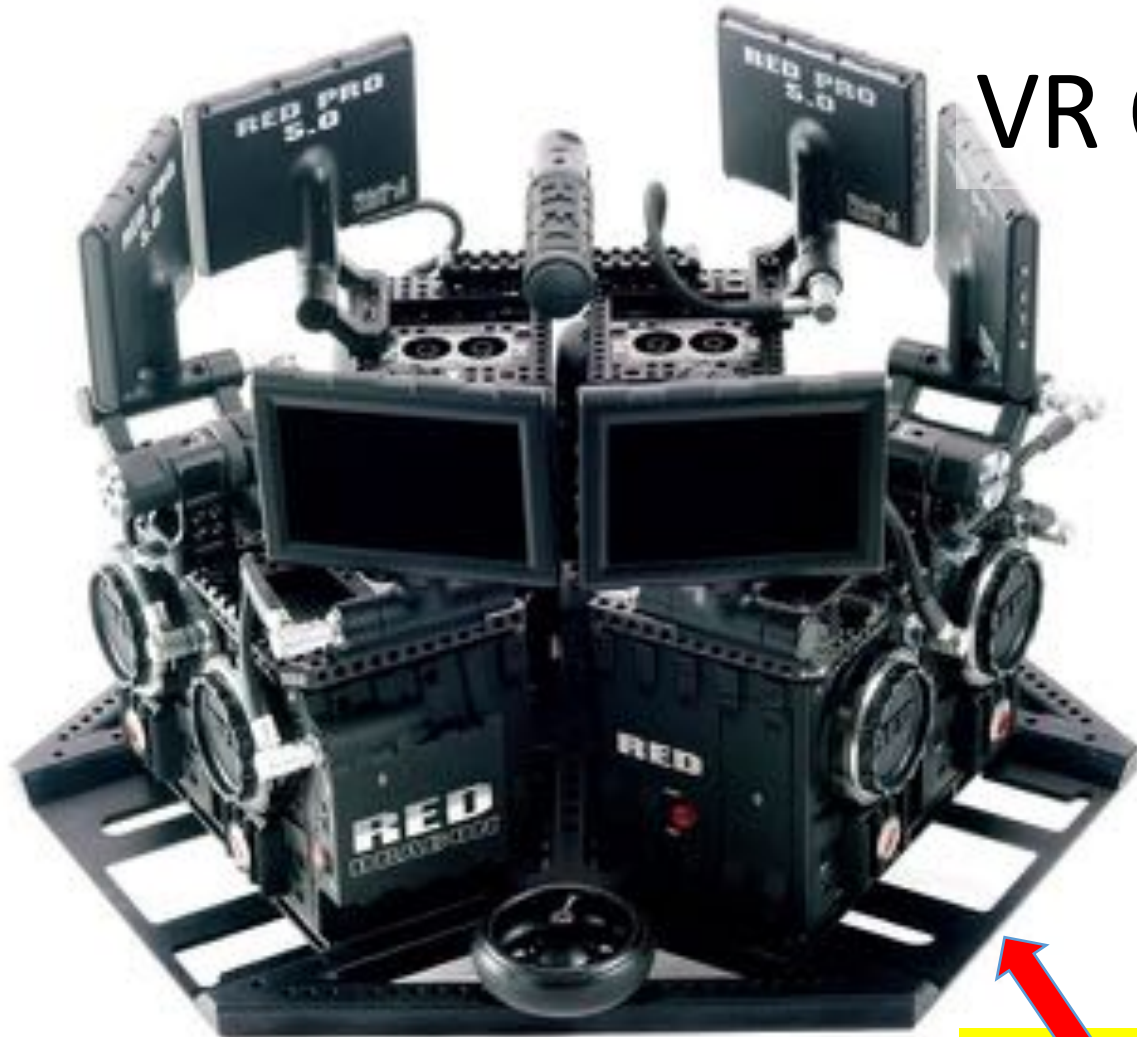
The Mission, New Deal Studios

Computer Rendered VR



The Blu, WEVR

VR Cameras



NextVR 360 3D Rig
6 Red Pro 6K cameras
60 fps
Spatial audio capture



Jaunt J1-24R
Early 2016
32K (16K per eye)
120 fps

Captured 3D

Algorithmic 3D

Playweld@ETCenter.Org

Nokia OZO

Mic



Captures 360 stereoscopic 3D through:

- 8 synchronized global shutter sensors
- 8 integrated mikes for spatial audio

Jaunt committed to support Ozo for camera & production workflow

Sound



Wild – The Experience, VR short from Fox (Reese Witherspoon, Laura Dern)

Spatial Audio

PhillyWebb@EnCenter.Org

Stitching



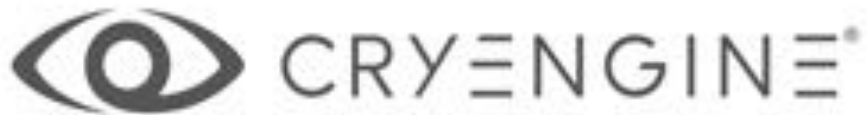
Editing



User Interface



Game Engines



UI design should maintain presence

Digital Distribution of VR

- YouTube 360
- Apple TV 360
- Hulu 360
- Amazon 360
- Netflix 360
- Littlestar
- Vrideo
- **WearVR**
-

The YouTube logo, consisting of the word "You" in black and "Tube" in white inside a red rounded rectangle.

YouTube Help

[Upload videos](#) > [Upload instructions and settings](#)

[Upload 360 degree videos](#)

The latest and greatest VR content to your device

Distribution is defining the production strategy
Potential eyeballs and ROI

- OCULUS RIFT ▾
- HTC VIVE
- OSVR
- SAMSUNG GEAR VR
- ANDROID ▾
- iOS ▾
- WINDOWS PHONE ▾

VR Cameras (consumer mkt.)



Ricoh Theta (\$350)



LG 360 Cam
(\$200)



Samsung Gear 360
(\$360)



Nikon KeyMission 360 (\$?)
Waterproof to 100'



Bublcam from Bubl (\$799)



Kodak SP360 (2X\$290)



Giroptic (\$499)

Social VR

Social VR



Altspace
Project Sansar
High Fidelity

Social VR may be VR's killer App
...people want to share experiences with others...

Business Insider, 7/20/15

Social VR

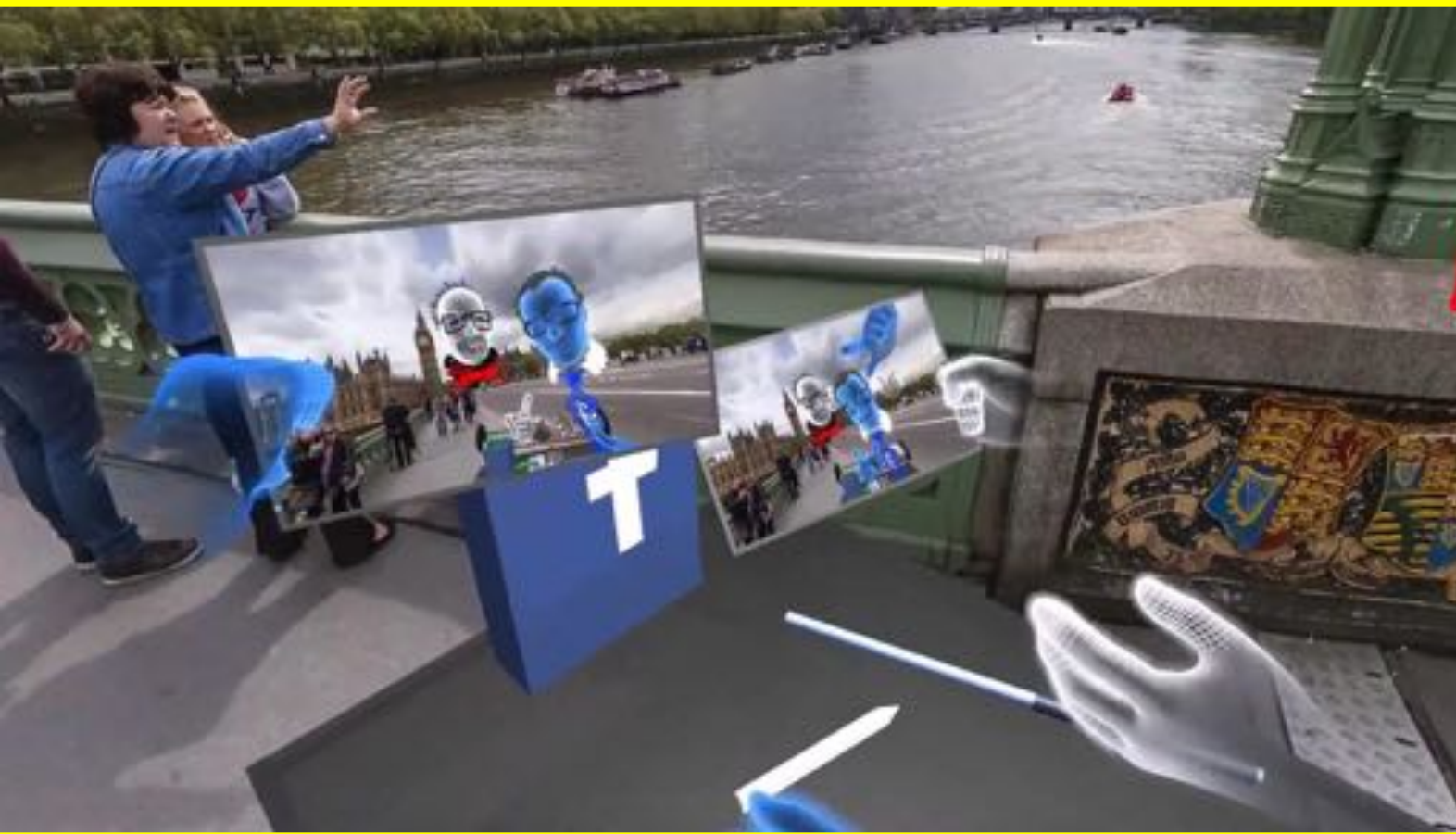


Altspace FrontRow

Mirrors avatars to enable up to 40,000 avatars to share an experience


Social VR

Altspace apex **TECH**
High Fidelity
IMVU
Project Sansar
...



Facebook's Social VR Could Be The Killer App For Virtual Reality

VR on planes – tech and behavior



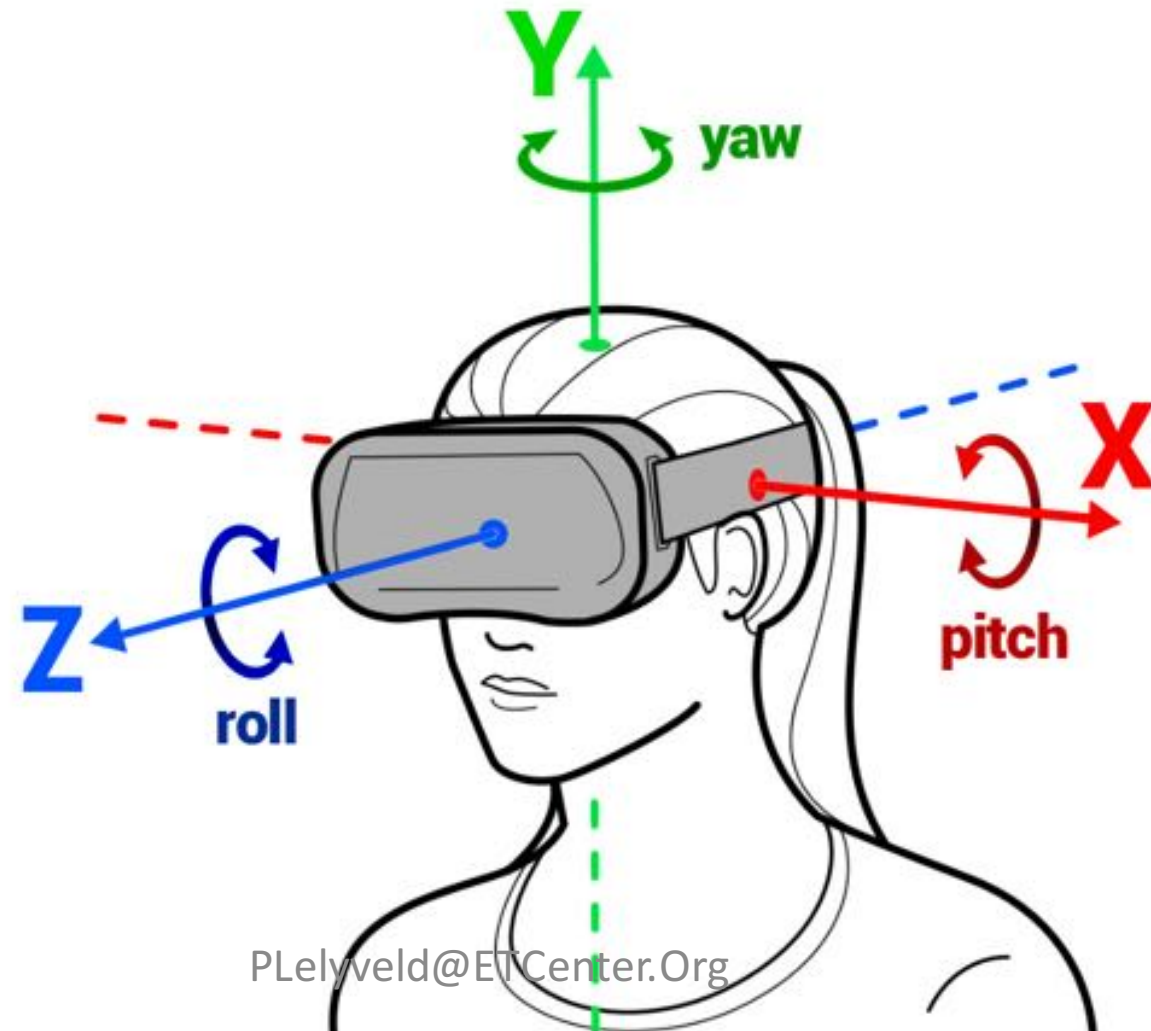
Cars are rolling entertainment centers
Planes are flying entertainment centers
with restricted passenger motion



Develop or modify VR content for primarily forward-looking, limited motion experiences

User Interface Design

Head Position Tracking



User Interface Design

Head Position Tracking

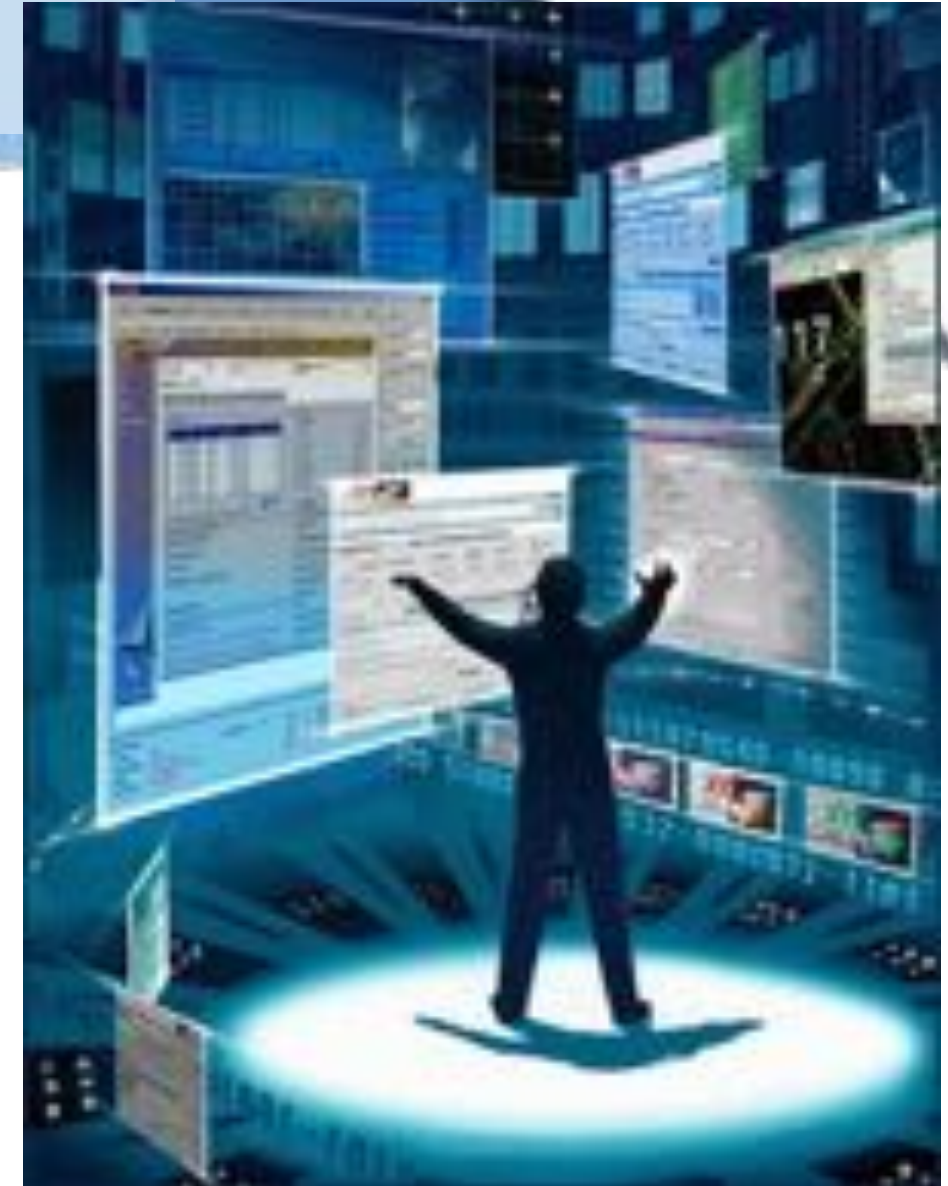


User Interface Design

Hand Tracking



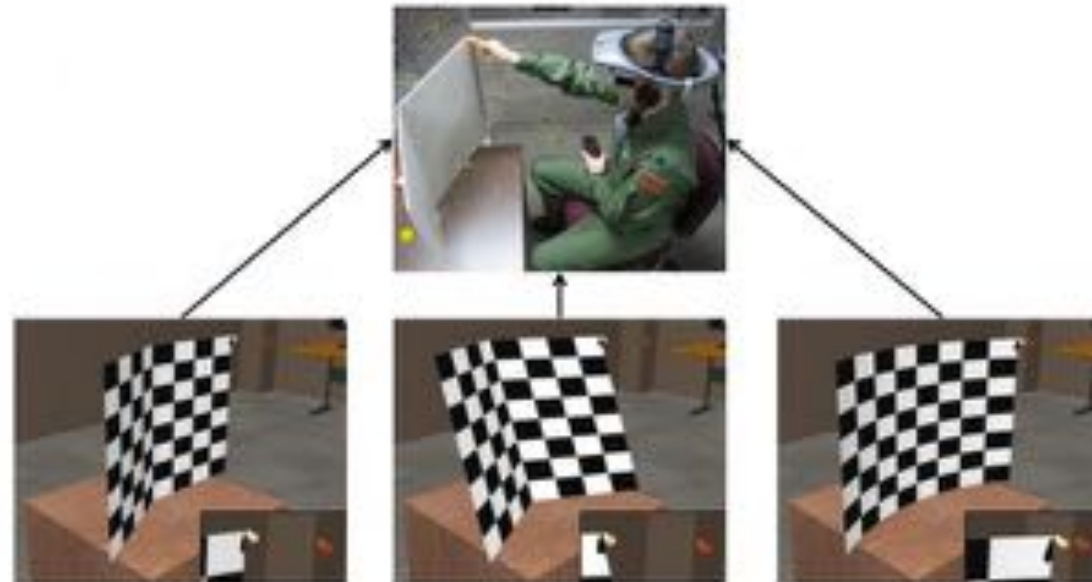
Intel RealSense



User Interface Design

Hand Tracking

Redirected Touching



Need instructional videos / role-models for
in-seat passenger etiquette
and social norms



Produce videos and articles

Playweld@ETCenter.Org

Hygiene



About Face

Washable, hygienic, comfortable Oculus Rift liners

VR on planes – VR sickness

VR Sickness

- Technical factors
- VR language factors
- Human population factors (3D, sensory mismatch)



The end of air sickness? Virtual reality headsets could prevent nausea on bumpy flights and tackle jet lag

A new device that

**Shifts horizon to match plane roll
Mimics day/night lighting at destination**

- Device may help with balance
- The headset can also display realistic night and day scenes at destination to help them acclimatise to new time zones

By RICHARD GRAY FOR MAILONLINE

PUBLISHED: 05:15 EST, 21 April 2015 | UPDATED: 05:59 EST, 22 April 2015



Banking

As the plane turns or banks the brain senses the movement but the view remains static. It's this conflict that causes motion sickness



As the plane turns or banks the artificial horizon moves, giving the brain the visual sense of movement it would otherwise lack



Samsung Entrim 4D Headphones Galvanic Vestibular Stimulation (GVS)

GVS uses tiny electrical impulses to stimulate your vestibular system into **thinking you're moving when you're not.**

Entrim 4D has been declared “safe”,

- 1500 human guinea pigs,
- 30 ‘movement patterns’



3/24/16 Demo at SXSW

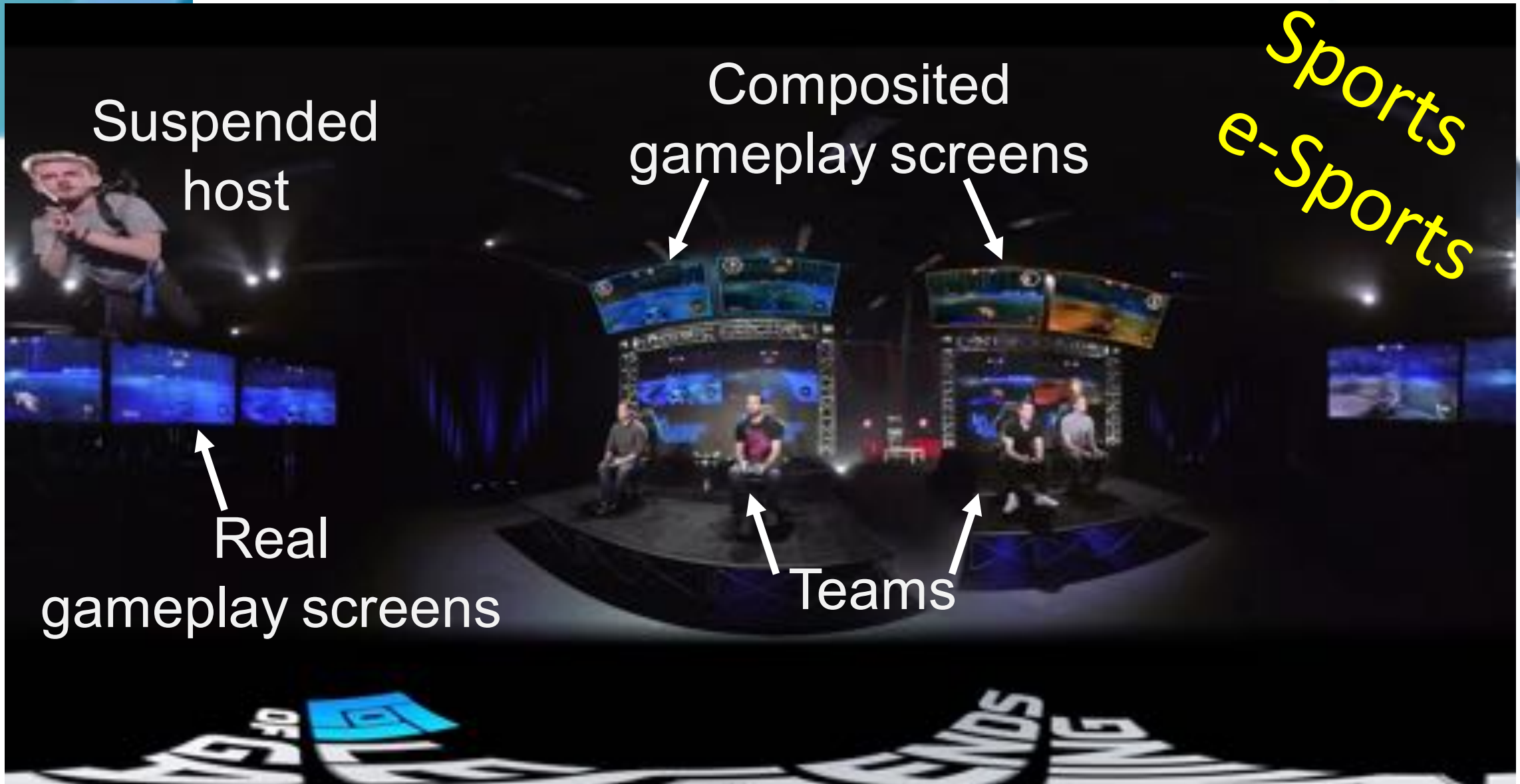
VR on planes – what can be done now

Concerts and events



Vantage.TV VR live-casting from Coachella 2016

Rocket League – Legends of Gaming



Next Gen Music Videos



[6 VR pieces](#) created for Paul McCartney's June 10 release of "Pure McCartney"

Enhanced movie, sports, and other viewing



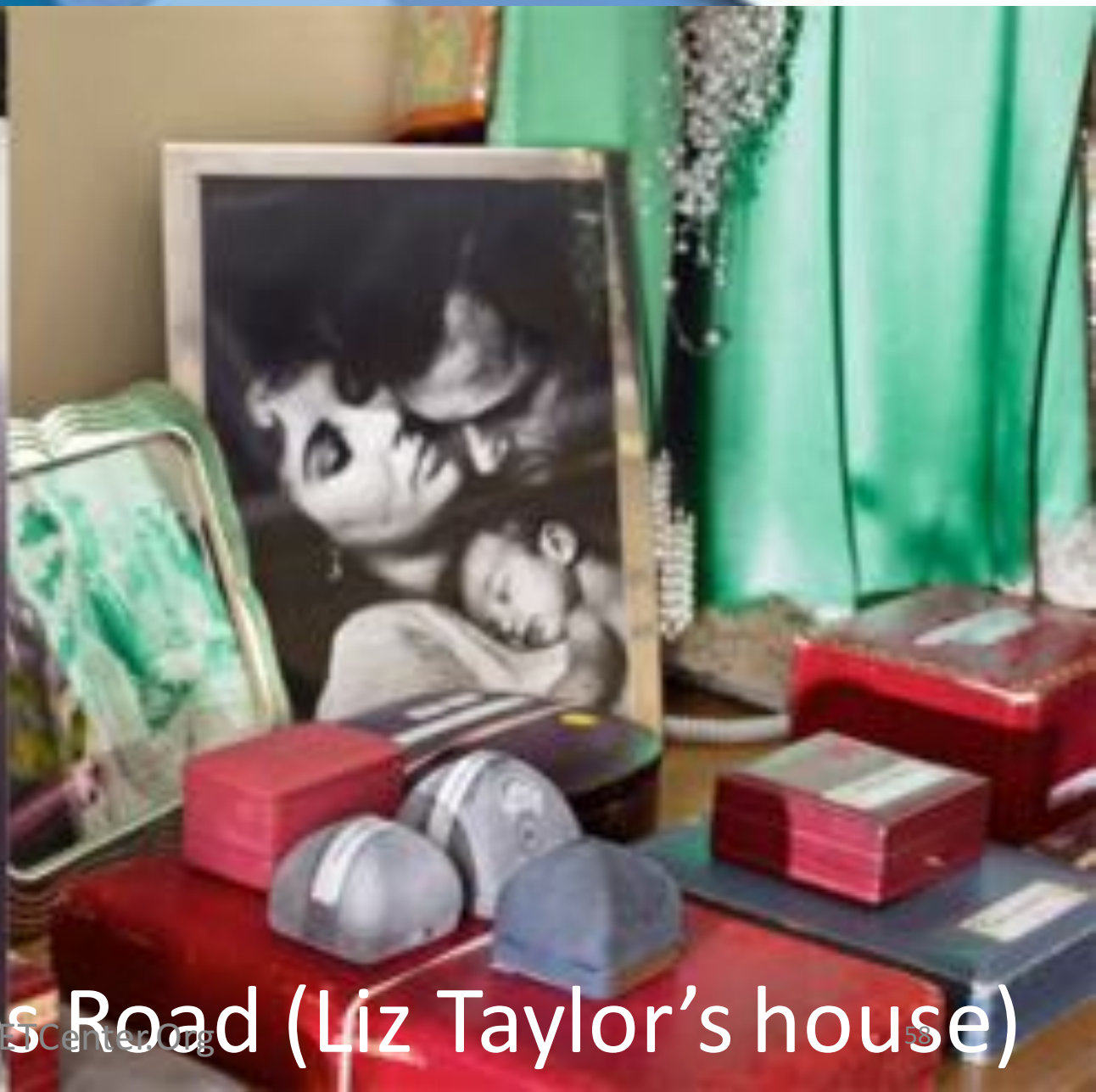
Prerecorded commentary
placed to your left and right
(Spatial audio)

Tours

Whitehouse Christmas Tour



There is a market for VR 'tours of the stars' closets



Catherine Opie, 700 Nimes Road (Liz Taylor's house)

Immersive Journalism



The Displaced
(New York Times and Chris Milk, VRSE)

Waves of Grace
(Chris Milk, VRSE)



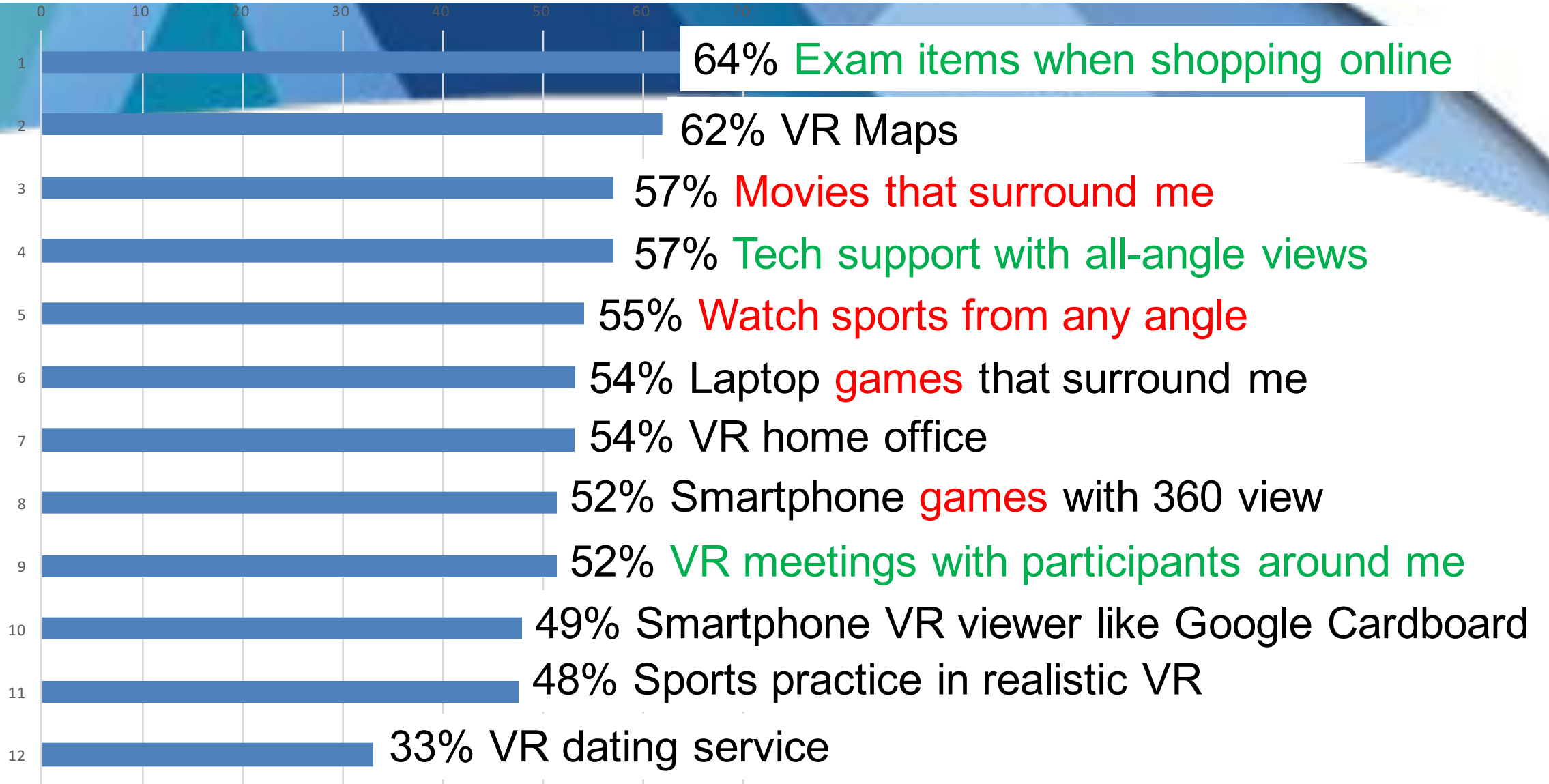
Social VR



CASINO VR
POKER



VR activities that interest smartphone users worldwide ECH



Source: Ericsson ConsumerLabs, "10 Hot Consumer Trends 2016," Dec. 8, 2016 (n=6,649, ages 15-69)

Retail

Myer, eBay Australia Launch World First VR Department Store



Up-sell opportunities

An aerial photograph of Sydney, Australia, showing the city skyline, the harbor, and the Sydney Opera House. The text "Destination previews" is overlaid in white.

Destination previews

Destination tour/event info (**and booking**)

In-VR Advertising

LA-based
Immersv
Launches
Video
Advertising
Platform for
Virtual Reality
Apps



Stare at an ad to unlock bonus features

Time Warner and Nielsen Will Study How Virtual Reality Affects the Subconscious



By measuring eye-tracking, facial movement, heart rate and brain activity to better understand how consumers think and feel at a deeper level



VR Quiz: What info to capture after an accident.

Business Productivity Infinite Desktop



EnvelopVR

Anticipates AR infinite desktop

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Federated Security – to allow secured organic team formation in flight

Shared Infinite Desktop

Network and shared experience with
family and other passengers
– not just gaming,
but notes for shared explorations

Vendors
Bluescape
Oblong

Standards Security!

Not just content security....

Could someone hijack your VR experience?

Could someone monitor your activity?



Looking forward

A man with a beard is wearing a white and black VR headset. He is holding the front of the headset with his right hand. The background shows a Best Buy store with shelves of electronics and a person in a blue shirt in the distance.

Best Buy

“2016 is the year of mass market demos”
Bob Vickery, Stage Venture Partners

“Never before has a technology gotten so much attention before actually getting to consumers.”

Alexander Taussig, VC partner at Highland Capital, Forbes, 6/11/15



Augmented Reality will overtake Virtual Reality in 2-5 yrs



Augmented Reality Services

Extend the effectiveness of physical media through AR



Daqri animates LEGO designs



Aurasma brings Despicable Me movie posters alive with AR bonus material

The Zoo!

New western Sydney Australian Zoo to use
drones, robots, and augmented reality



The \$36 million zoo is scheduled to open in September 2017

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Augmented Reality Glasses



Source: AugmentedReality.org Smart Glasses Market 2015 Rpt.

AR on a fixed base



Perceptoscope
Historic recreations &
reenactments

Close



Consumers buy the experiences technology delivers, not the technology itself

Storymaking

Social

Business

Gaming

Education





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

Ted Schilowitz, Futurist, Fox Studio

Thank You

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