

# The Business of VR



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**&**  
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# The Business of VR

## Workshop report written by Philip Lelyveld<sup>1</sup>

One hundred and four business people with direct involvement in Virtual Reality attended The Business of VR workshop co-produced by the Entertainment Technology Center at USC and the Advanced Imaging Society. Over the course of the afternoon the attendees heard seven 10-minute presentations, participated in one of four moderated discussion groups, and had the opportunity to experience seven VR demos while networking. The event was held at the Skirball Center, Los Angeles, on November 17, 2015.

What follows is a summary of each of the seven 10-minute presentations, a roll-up of the notes from the four discussion groups (Four moderated discussion workgroups – composite summary), and a compilation of the post-event responses to questions emailed to the attendees the day after the workshop (*Business of VR - Your Take-aways Please*).

The list of companies who RSVP'd 'yes' for the workshop, a list of questions that the attendees wanted addressed during the workshop, and the workshop program are in appendices.

## Seven 10-minute presentations - summaries

**Jeffrey Greller**, Digital Agent with a Focus on VR at WME|IMG spoke first. The role of an agent is to empower artists to create. \$3.5B has been invested in VR since 2014, with 95% of it going toward hardware. For that hardware market to develop, people are going to need something to watch. Once you have an idea, find others to collaborate with. This is a new medium. Drawing on the skills, knowledge, and perspective of others will produce a better VR experience and advance everyone's understanding of the medium. The two most urgent shortcomings with the current VR ecosystem most often mentioned by writers, directors, and other creatives are a lack of available equipment (from cameras to headsets) and a need for better toolsets for creating the VR experiences. It is currently common for companies who finance VR creation to also want to distribute it. The best way to get your project financed is to have a track record of prior success in VR or other media. Many believe that funding will come as VR enters the consumer space. Deutsche Bank projects a \$7B capitalization for VR-related companies by 2020, with \$4B of that going to organizations involved in content creation. For Jeffrey, the most interesting VR will be in the creative space in-between live-captured spherical VR and CGI interactive VR.

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<sup>1</sup> Philip Lelyveld, ETC@USC VR/AR Initiative program manager, PLelyveld@etcenter.org

**Seth Shapiro**, Principal, New Amsterdam Media, Adjunct Prof., USC School of Cinematic Arts, and Governor, Interactive Media Peer Group, the Television Academy, discussed a 3-pronged business framework for VR. VR extends the existing entertainment-related tech sector of cameras, mobile devices, tools, etc. Entrenched companies like chip manufacturers AMD, Nvidia, and Intel are making strategic investments to move into this potentially huge new source of revenue. And new companies are developing to facilitate the distribution of VR experiences through apps, storefronts, and the like. He posited that Google's purchase of YouTube is a good analogy for Facebook's purchase of Oculus. At the time YouTube was a known brand with no revenue. It was the home of trivial consumer-generated content. And it had little proprietary technology. In retrospect, Google captured YouTube at the beginning of the life cycle of that media type. It is an example of an incumbent betting on the future. Oculus may play the same role for Facebook.

**Brian Furano**, Director of River Studios, Venture Advisor for Rothenberg Ventures reported that Rothenberg Ventures, the first VC group focused specifically on VR and AR, has vetted over 600 startups and invested in over 40. Their investments cover all verticals – health, education, gaming, etc. – and advance their goal of using VR 'for the betterment of the planet.' Brian used his music industry background as the springboard for his discussion of VR concepts. He reported that, for \$2,000, a Justin Bieber fan can buy a front row seat and a back-stage selfie with Justin. Brian speculated on ways that VR can complement the concert-going experience, and how it could reinvent the music video and resurrect the album. He is talking to TV producers about developing VR complements to shows. While VR is often thought of as an isolated, solo experience, he noted that Rothenberg Ventures has invested in VRChat, one of the many social VR startups. In VRChat you are in a virtual space with other people/avatars enjoying a shared experience. The immersive nature of VR, with its powerful ability to establish presence and empathy, can be used to divert pain in burn victims, or engage students in an exploration of ancient Rome. The power of VR must be used carefully, he noted, so that we don't inadvertently cause psychological damage.

**Eunice Shin**, who heads up Manatt's consulting practice as Director, Manatt Digital Media, shared recent statistics from Venture Beat. They tallied 234 companies involved in VR, 40,000 people working in VR, \$3.8B in funding tied to VR, and a \$13B current valuation for the sector. As was said by previous speakers, Eunice stressed the importance of VR content for an attractive consumer value proposition. For VR to succeed it must provide a seamless, ongoing experience. It must scale to a mass market. And it must redefine premium content. Five years ago no one thought user generate content had value. Today, Pewdiepie produces micro-budget content that commands high CPMs. Ms Shin stressed that content creators and owners need to take control of their fate and consciously navigate this new medium and revenue

opportunity. She recommends that they become investor/producers, that they actively reach out to their audiences and engage with device manufactures and distribution platforms, and that they recalibrate their approaches to exclusivity and IP ownership for this new environment. Finally, the Hollywood and Tech sectors need to figure out how to work together - to align their approaches to culture, IP rights, monetization, the value of various skill sets, etc. – as they build a new, converged sector.

**Clifton Dawson**, CEO, Greenlight VR, a VR-focused market research company, reported three findings from their most recent market study. Greenlight VR gathered data from 2282 respondents equally distributed among kids 10-17, parents, and adults 18 and older. 1) Is VR just about Oculus? 80% of respondents could not name a brand or were not interested in any particular brand. Those who did name a brand mentioned Samsung Gear VR and Sony Playstation VR slightly more often than Oculus. 2) What are the barriers to adoption for consumers? Perceptions about the price for the equipment are by far the main barrier. Of those who would pay more than \$0, the average price for a full VR setup that people are willing to pay is slightly under \$500. 3) Should marketers add VR to their marketing mix? For all respondents, 54% said that they are interested and 48% said that they are excited about VR. 51% of Gen Z say that they “love” VR, which bodes well for future adoption of VR.

**Anthony Borquez**, Founder and CEO of Grab, described his 2-year journey expanding Grab Games into VR. There was no Oculus when he sought \$1M to start a VR innovation lab. He met with many companies interested in using VR to solve problems before partnering with HubZero, a Dubai-based company interested in VR theme park development. Grab has taken on various work-for-hire VR projects to both meet payroll and fund their VR learning and experimentation. They are finishing up a *John Wick* VR first person shooter experience. This will be a premium paid experience rather than a promotional VR. Anthony plans to use Grab’s proprietary analytics tools to monitor user behavior and evolve the experience over the course of its 3-year planned lifespan. He announced that Grab has just closed funding to develop *Animetropolis*; an anime- and manga-themed VR theme park concept with planned locations in China, Japan, India, and Dubai. The experience will include physical and virtual components, single- and multi-player activities, and both VR and AR attractions. He plans to build, own, and license the underlying multipurpose tech for the VR experience, so Grab and others can then create story-specific VR experience overlays for clients.

**Schuyler Moore**, Partner, Stroock & Stroock & Lavan, gave an overview of the VR legal landscape of the future. His main point was that actions taken in the virtual world will have real world consequences; especially as the virtual and the real worlds converge (e.g. mixed reality). He gave a variety of examples. Copyright:

when a community creates a virtual world, who owns the copyright when someone wants to license elements of it? Trademark: if you create a virtual brand and someone uses it to create a real world brand, do you have a claim? Tort Law: if you buy a virtual Ferrari and the driver of another virtual car crashes into it, are they liable for damages? Licensing: licensing is usually done by modality (ex. theatrical, TV, DVD), but the modality of VR hasn't begun to be defined yet. His closing comment was 'to be sued is to lose.' It costs \$500,000 just to get to the courtroom steps. That amount can sink a startup.



# Four moderated discussion workgroups – composite summary

## Location-based entertainment (LBE)

Location-based entertainment is more likely to be a near-term source of revenue directly from VR than the mass consumer market. Entertainment centers like The Void, where the virtual experience is mapped onto a physical space with physical objects, have the potential of redefining the out-of-home entertainment business. Disney and other companies with theme park experience are expected to develop experiences for this space. But there are also a rapidly growing number of well-funded start-ups with VR, VFX, coding, and storytelling talent who want to be serious competitors.

Cinema multiplexes could develop infrastructure for small-footprint premium VR experiences. These experiences could be secondary value propositions tied to theatrical releases, or independent experiences that replace or complement video arcades. The 15-25 minute The Martian VR experience, currently being developed by director Robert Stromberg as a compliment to the Ridley Scott movie, was mentioned as a test of the idea. There should be a separate charge to accustom consumers to paying for VR experiences.

Budgets for any LBE VR facility must include funds to train and pay for staff. Especially early in the deployment, consumers will need help putting on and taking off the equipment, and the equipment must be regularly cleaned and maintained.

(Sidenote: The military's Interservice/Industry Training, Simulation and Educational Conference ( <http://www.iitsec.org> ) was mentioned as a potential source for ideas and information.)

## Platforms and money

At the moment there are 'no products, no users, and therefore CPM=\$0.' The platform, and the reach of that platform, helps establish the justification for budgeting a VR experience.

VR is happening first on mobile devices; mainly Google Cardboard and similar low-end low-cost devices. The New York Times and Google recently distributed 1M Cardboards, with links to immersive journalism VR experiences, inside the physical Sunday Times. The Samsung Gear VR is just now coming to market. Much of the content currently available for these devices is being funded by marketing departments and is being given away for free to consumers. VR content being sold

through aggregation sites faces the same 'distribution charge' model as other content types. (A 30% distribution charge in both Samsung's Milk VR and Apple iTunes was mentioned.)

One to four higher-end HMD-based platforms are expected to dominate the consumer-market experience in the near future. Oculus, HTC Vive, and Sony PlaystationVR are leading candidates, but there are dozens of other funded HMD companies hoping to build out an ecosystem and capture market share.

A hotly debated topic was whether there would be a tiered market for VR experiences? Will the mass market gravitate toward sitting, standing, or walk-around experiences? Will it be satisfied with look-around and interactive experiences that follow the current game-controller model, or will it prefer hand-and body-tracking interactions? A related topic is interoperability and standardization among platforms. Because of each platform's unique feature set and proprietary or unique interface structure, content developed for one platform may not play on another platform. Creating versions of content for each platform can add a significant cost to the production budget. These issues will shape the size, demographics, and other parameters of multiple markets for VR.

The Sony PlaystationVR is the potential leader and game-changer, since it is designed to work with and leverage the Sony Playstation's global domination of the gaming console market.<sup>2</sup>

In the background, AMD, Intel, and Nvidia are looking to VR to replace the revenue decline from the shrinking PC market.

## **Content and money**

Many in the industry would like to avoid seeing the VR marketplace develop without any money going toward compensating VR experience creators beyond a 'work for hire' scenario. Large file sizes and interactive features make VR difficult to copy and pirate today, but as the technology evolves these barriers will fall. It is critical to the survival of a professional VR creative community that a marketplace for VR content be established as the ecosystem rolls out to consumers.

The established Hollywood studios are working with subcontractors, Google/YouTube, and other OTT partners to create VR content. Some Studios have not committed to VR as a business because there is no proven business model. This hesitancy is opening the door to Google/YouTube and others to define and capture the nascent VR content market. They are directly funding content creators - or at

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<sup>2</sup> 30.4 million PS4 console units have been sold as of 11/22/15 Analysis: Sony pushes past 50 percent of the worldwide console market, ArsTechnical, July 30, 2015 <http://arstechnica.com/gaming/2015/07/analysis-sony-pushes-past-50-percent-of-the-worldwide-console-market/>



least supporting them by building out production and distribution resources. These tech companies can connect creators directly to consumers. It is in the Studios' best interest to find ways to work with technology partners and participate in this build-out.

At the moment, advertisers are viewing VR cautiously because there are no metrics for success for ads in or associated with VR experiences. Academic research into VR and memory retention would be hugely important to this industry. In the meantime, VR creators should develop experiences that can update and evolve, so they can define their own metrics for life cycle cost-recovery and profit.

One discussion group addressed 'who are you focusing on, audience-wise?' 6- and 10-year old kids are great focus group subjects. Neither of these age groups has ever worn a watch. They associate the word with the Apple Watch. This demographic will grow up placing an entirely new demand on technology and media. "But where's the stuff that I want?"

Boomers 50 and older are another target demographic. Sentimental experiences will be powerful, as will educational and health experiences. Social VR experiences that help people stay connected as their mobility and real-world social interactions decrease will have significant societal benefits and could develop into huge markets.

## **Miscellaneous**

When asked to name the best VR or AR experience they've had to date, people named Bullet Train from Oculus which uses the Unreal game engine, Tilt Brush for the HTC Vive, The Void location-based experience in Utah, Project Tango – Google's tablet AR experience, and Magic Leap – the secretive startup's AR experience.

We can look to the Nintendo Wii for preliminary data on how much consumers are willing to wave their hands and move their bodies in a VR experience.

VR-induced nausea and other health issues are serious concerns. They could develop into significant barriers to consumer adoption. The 3D industry's recent experience provides some guidance. The industry should explore developing a 'nausea score' for VR playtesting, and research both technological and artistic means to minimize the problem.

## **Big picture strategy**

When people look at Google's investment in Magic Leap, or Facebook's purchase of Oculus, or Microsoft's development of HoloLens, they see 5-10 year strategies rather than 1-2 year strategies. Something similar, but at a smaller scale, is underway with investments going toward Jaunt, WEVR, and other VR hardware and experience-



production start-ups. These companies are doubling down on VR and AR with long-term investments, to the potential frustration of their shareholders. The developer and creative communities are working to figure out what will work in the marketplace. What will be the baseline VR experience? What will be the premium VR experiences? What revenue sources and business models will sustain each player and the industry? Some attendees believe that we are in a bubble, and valuations will crumble in 18 months if an exponential-growth market doesn't begin developing. The majority of attendees are cautiously optimistic and just trying to find their place in a highly promising new media.

## Passion for VR

A VR creative said that he is fascinated by VR because he has to relearn everything he knew about storytelling in order to take advantage of the properties and nuances of a new media. We are racing to establish competitive advantage by discovering and using the creative vocabulary that is native to VR.

One group capped off their discussion on a very positive note about the VR community. The real leaders in the technology space, they said, have an altruistic mentality and want VR to effect the world in a positive way.



## Business of VR - your take-aways please

The day after the workshop, the attendees were sent the following questions;

Please take a moment to send me bullets of one or more things brought up in the presentations or in your discussion group at the workshop that you;

1 thought was very important

2 found interesting

3 hadn't thought of before

4 disagreed with

What didn't get discussed that you'd like to see covered at a future ETC event?

Below, in no particular order and separated by dashed lines, are their responses.

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- thought was very important

We collectively acknowledge that we don't know where this is heading yet and what the next right turn is, but also that it will change the game for a number of industries including entertainment. Very important to me to get reinforcement from such a well pedigreed "support group" from time to time as each day in the grind, this amazing phenomenon is so easily dismissed, as "we'll look into it when there are customers and an ROI case".

- found interesting

I loved Eunice's passion and conviction in her beliefs about VR and where the industry is now. I was also fascinated by Anthony and Grab and what he is doing in the amusement space.

- hadn't thought of before

The role that the talent agencies (WME, UTA, etc) are positioning themselves for in the world of VR (it makes sense but had not occurred to me)

- disagreed with

Not sure there was much to disagree with – there was mainly opinion with wide open future potential...hard to say anyone took a position that was not a distinct possibility.

What didn't get discussed that you'd like to see covered at a future ETC event?

Again, I missed the discussion group, but I am very interested in any hypotheses or informed predictions on what people will be willing to pay for what kind of experiences near term in VR – what is the value of the immersive experience outside of gameplay.

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- thought was very important

- The break-out groups. For me, this was the best part of the event. I was able to get some insight and make some great contacts.
- Networking time after the speakers.

- found interesting

- That there is a lot of excitement and passion in this space.
- Are still a lot of open questions – especially regarding monetization.
- Not a lot of new information / updates to share – we appear to be at a standstill until the big launches occur next year.

- hadn't thought of before

- disagreed with

- Many of the lawyer's points. Near-term, I think that there might be a risk of real-life injuries (e.g. vision impact, physical injuries, etc.) before virtual lawsuits.

What didn't get discussed that you'd like to see covered at a future ETC event?

- Potential health impact of youth – Conundrum of wanting to attract users at an early age (especially family friendly content), but caution of doing so due to unknown health risks.
- VR production – Paradigm shift for creating content. More emphasis on engineers / software troubleshooting vs. traditional teams.

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I didn't say much in the group discussion, because I am not as fired up about this stuff in either direction as the rest of the group, I think there is a lot of fleshing out that needs to happen before we can have that strong of opinions about where it is going to go...

- thought was very important

Something important I noticed is that everybody is still trying to figure out how to monetize this medium. It seems like until one of the big companies like Facebook, Apple, or Samsung make it possible for content creators to have a distribution platform that is widely used, it is going to be the wild west with some content making a splash in some way and others sinking. I got into VR because the service that my company provides is something that I know that this industry needs desperately in these early stages... a way to shoot 2D and have 3D content without a lot of the hassle that comes with shooting and posting in 3D. For now, I think we will remain a fee for service company, and let the others figure out how to make money on their content while we bid to do the work based on what makes sense for us financially. We have done a lot on spec that has gained us a nice portfolio that is now

paying off in the way of paid projects.

- found interesting

I found it interesting that so many people had such strong opinions about this. I think you kept us on track during our discussion, but some people were nay saying the whole industry basically underlining a “why try?” mentality. The answer is, if we don’t try, we will never know what it could have been. With all this money being thrown around in this arena, I think most people are not just excited about the *wow factor* of the medium, but also that there is some real opportunity to make some money while the going is good. Potentially, being good in this medium could lead to other things such as augmented reality.

- hadn’t thought of before

The legal aspect of this is fascinating. A lot of people parallel this to 3D, and they aren’t wrong. For a decade the 3D conversion companies have all been suing each other over what is essentially standard VFX processes but used with stereoscopic vision which makes the process novel to the people in charge of granting patents. I see the same thing happening here with VR. Lots of technology will be developed that is basically just altering existing technologies for cameras, visual effects, image processing algorithms, etc... the lawyers are going to make a lot of money off this industry.

- disagreed with

I am not sure how to answer this because there wasn’t a clear stance from the group in any direction. It seemed that everybody is still formulating their opinion and the data isn’t solid yet either since nothing has really come out yet. I forget the name of the Oculus rep that was in our group, but he made a good point that all of the headsets we have seen to date have been developers kits.... if all we have seen so far was generated out of open source tools and developers kits, then this industry has a lot of growing to do.

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- 1) Content is going to invariably define the future and success of the VR industry.
  - 2) Manatt's demographics spreads on consumer interest in VR
  - 3) People will get sued over consequences in the virtual world
  - 4) Live VR is not going to be a successful medium

I’d like to hear more about computer rendered VR and learn about the content creation pipeline. Also it would be cool to go more into depth on opportunities that VR holds for various industries such as health, education, etc. and brainstorm ideas for possible applications.

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It was excellent to hear from the speakers, and great to meet other VR enthusiasts

and devs.

- thought was very important:  
disproportionate amount of funding and energy on hardware, not content  
LA is the beating heart of VR

- found interesting:  
foreign investment in VR theme parks, like Animetropolis

- hadn't thought of before:  
minimum legal costs of \$500K just to defend self in court (YouTube just announced a legal defense fund for YT creators, maybe something similar is needed for VR devs)

-R creators want to be able to use multiple cameras and interchangeable lenses

- disagreed with  
- N/A

potential future topics:

- like mobile-first apps, what will VR-first apps look like?  
- how do we avoid VR falling into the 3D TV trap?

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Suggestion for next one is to truly go into deeper dives around business model – seem as if everyone avoided the topic and grazed over it.

- thought was very important/ found interesting  
Perspectives on VR content creators working with content financiers  
Hearing from VR start-ups and their experience  
The penetration of VR and valuation of the industry

- hadn't thought of before  
The IP issues around VR – very interesting

- disagreed with  
N/A

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In general, I was hoping for more 'answers' but its more like a 'group grope' for the answer to the revenue model.

- thought was very important

- Someone said that going to the home in a "Heathkit" like manner will cause a wide variety of quality and it would be better if the first VR the average person

saw was a very controlled experience (much like digital cinema is very controlled today for theatrical exhibition). That resonated – I think having a more controlled experience will make it more popular with the general masses (not the hobbyists and early adopters).

- Much emphasis has been placed on the experience itself whereas I think the social event may be more important if the experience is somewhat predictable. For instance, sports is about experiencing an event live. Being at a virtual location at a time when your friends are there to witness the story or game may be the more important aspect of success early on. This can be compared to the League of Legends event recently.

- found interesting

- 95% of investment has been on hardware
- Manatt considering that UGC, MCN, Twitch like content may be what goes to VR before any traditional content. Live, social engagement may be the ‘killer-app’

- hadn’t thought of before

- The way the attorney laid it out was not new, but was good to hear in one concise manner (see below for my rough notes)

- disagreed with

- Content jumping onboard with the trailblazers when there isn’t a revenue model quite yet

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I think overall it would be good for the business of VR to bring in platform owners (Oculus, Samsung) and maybe some other business people to talk about models etc. It was slightly touch on but most where folks asking questions.

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the most important information was shared by Schulyer Moore regarding the legal pitfalls and challenges of VR  
the most interesting panel was hosted by MANATT DIGITAL regarding the expansion of VR into all industries  
the Greenlight presentation contained the most information I had not previously considered.

What didn’t get discussed that you’d like to see covered at a future ETC event?  
I can’t think of a single topic that wasn’t covered!

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I liked the broad survey of business issues. Although we weren’t able to really get into depth on anything.

Demo stations are always good and essential with VR.  
Networking and hallway conversations were great.  
I think it's valuable to continue to debate the potential of this medium. We are all still trying to figure out if this is the next big thing or just a passing fad.  
I think that VR and AR/"augmented reality" are actually completely different and only tangentially related things.  
I think that ultimately the business models are really the same as they are for all other digital content. The possibilities are limitless. There is nothing inherent to VR that creates a new business model. And if there is, it would be great to see someone present it.

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—It was interesting that everyone agrees that no one is substantially investing in VR content development right now outside of marketing and promotion. In our breakout it was suggested that a route forward is to do longer form, high production value content but have it funded by a marketing partner ("this content brought to you by Coke"). Then in 2017, there may be enough headsets out there to directly monetize content through consumer purchases.

—Schuyler Moore's comments on legal issues involving digital likeness rights and the potential for tort cases was insightful.

—I liked Seth's Shapiro's analogy comparing Google's 2006 YouTube purchase to Facebook buying Oculus in 2014.

—Eunice Shin's talk reminded me again of how the power of empathy in VR will surprise people, particular in regards to VR journalism.

Later in 2016, after the release of consumer VR platforms, improved 360 video capture solutions, and improved VR content creation tools, it would be interesting to revisit some of the topics covered in the ETC VR events during 2014-2015.

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- There's a need for technical standards for developers if we truly want deep consumer penetration
  - Monetizable content will only come after these standards are clearly defined, thus enabling a glut quality content that consumer will pay for
  - Things are moving very, very quickly but still incredibly fragmented
  - As a content producer there are many resources available to develop content, but the funding models are still emerging.

The main point I made in the discussion session was that producers/developers need to create VR content with the distribution platform in mind, and make a distinction between low-end experiences powered by smart phones and detachable HMD's (Cardboard/Gear), and gaming console/PC tethered experiences with high-



end HMD's (Oculus/Vive). Not all experiences and the intent of those experiences have the same objectives, and the platforms they're developed for should reflect those objectives.

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I thought the quality of attendees and participating speakers was very high (and relevant to business topics), but I was hoping to hear more concrete discussions and learn more about possible content business models -- including examination of case studies, illustrations etc. Also I think the potential power and influence of VR in the interactive video gaming realm was under-represented -- based on the industry moves we are seeing.

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- thought was very important

It's early. The hardware is not even readily available yet.

The approach / and early products for VR will vary widely. There will be some amazing content that changes the way we tell stories. There will also be a lot of bad 360 video camera content that could sour early audiences.

the game industry has this down. the film / video industry is learning.

- found interesting

discussions around how "social VR" will be key for success. from user-generated VR content, to a metaverse type scenario.

the Deluxe VR Vibe demo was great to check out!

- hadn't thought of before

- disagreed with

What didn't get discussed that you'd like to see covered at a future ETC event?

Always enjoy discussing the introduction of Biometrics into the equation... I had a couple of good conversations around this during the networking hour.

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It was an amazing day, one of the best VR day I attended, especially on the attendees expertise and real business position.

- thought was very important

Investment in content creation should start right now

Grand Ma is looking at VR with NYT cardboard

- found interesting

30% of users cannot walk on a virtual wire

Legal issues in VR

## VR consumer report

- hadn't thought of before

SMPTE should start working on standards asap.

Social VR requires developing tools that will be helpful to the whole VR apps

Social is what VR was missing to take ground in the 90's and 2K's

- disagreed with

3D is dead

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- Loved the discussion on expectations from a legal point of view – I hadn't thought of that at all.
- I heard strong grumbling against focusing on promotional VR pieces, but I believe if done right, there is much value in that kind of ancillary IP extension, especially considering viewership and adoption rates into next year.

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- thought was very important

AR will be likely be the bigger market and despite needing the headset problem will probably make the bigger impact on daily life

- found interesting

Legal implications and blurring of lines between virtual and real world. I have had a patent pending for 9 years which essentially provides algorithms to form the relationship between virtual things, scarcity and price and to build supply chains. I've long been fascinated in the space, and when I was talking about these issues 10 years ago they seemed totally disconnected from present day reality. It's amazing to see discussion about the eventuality of metaverse-related bleed through and I was riveted.

- hadn't thought of before

VR is the amphibious child of the Silicon Valley and Hollywood. I hadn't thought through how strongly the Silicon Valley has the grip on the wheel and what this means for Hollywood and the possibility for creative industries to report through a new power elite. If VR hits very big, it could shift the center of the content industry north a few miles.

- disagreed with

Vision without execution is in fact hallucination. But if you were to succeed in hallucination, you will have properly executed VR, so it doesn't apply. :-)

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- a. Besides rothenberg, somebody needs to step up and start funding these companies.
- b. The fact that AR's value is so much higher than VR
- c. Same as #2
- d. Nothing, I found it all very informative.

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I thought the most interesting talks were the ones given by Anthony Borquez and Schuyler Moore. I especially found Schuyler's talk thought provoking. I'm not sure I agree with everything he says, but I think there is something there. (especially the complex IP issues).  
Thanks for the invite to the event.

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- thought was very important  
the open ended question of "will general consumers accept the HMD strapped to the face" is possibly the most important factor facing the success or failure of VR

- found interesting  
The legal aspect brought up by Schuyler Moore

- hadn't thought of before  
The point raised by the gentleman from Oculus made me realize that unlike 3DTV, we do have a highly respected, single-minded visionary who has the capacity to press VR to the point where tech may catch up with market demand even if that means losing billions for years. Zuckerberg has the cash and the reputation to do this. No one like that was on the stage for 3DTV

- disagreed with  
Gaming will not lead VR. This was the same thing everyone said about 3D and it did not pan out. It's the lowest hanging fruit, so people tend to gravitate to it, but I don't think it will happen.

What didn't get discussed that you'd like to see covered at a future ETC event?  
The importance of stereoscopy to the sense of immersion. WAY TOO much "VR" is being shot and presented in 2D.

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Things I found interesting:  
Jeffrey Greller's presentation on business of VR.  
I didn't know 95% of VR funding was for hardware!  
Brian Furan (RIVR) talking about "what will be the first hit show on VR"

Hadn't thought of before:

Seth Shapiro talking about opportunity for peripherals in VR and comparing to the market for iPhone cases and accessories, very compelling

What I would like to see covered at ETC future event:

1. Jeffrey Greller from WME lamented the lack of capital for content for VR. I suspect this is in part because most film investors have gotten burned, and the film distribution model is completely broken, as anyone in the film industry can attest. Platforms like [Slated.com](http://Slated.com) are trying to address this.

I'd love to see a forum where thought leaders discuss how we can build a distribution platform for VR that makes sense for everyone and learns from what works and doesn't work in other media— let's build this from the ground up the right way.

2. Continuing the discussion of the Techweek panel— how can we make VR more human and humanizing? Let's attempt to do this from the early stages.

3. I know it's not a pitching or networking event, but I'd love to see more time for meet-and-greets with other attendees.

Thanks again for the invite— I found the event to be extremely valuable and informative!

# Appendix 1

72 organizations RSVP'd 'yes' for the workshop. Not every attendee registered at the desk. Some of these organizations may not have been represented.

|                                     |                                    |                               |
|-------------------------------------|------------------------------------|-------------------------------|
| 21st Century 3D                     | Grab                               | Stan Lee's POW!               |
| Advanced Imaging Society            | GreenlightVR                       | Entertainment                 |
| Anonymous Content                   | Greycroft                          | Starbreeze                    |
| Autodesk                            | HellowBandwidth                    | Stroock & Stroock & Lavan LLP |
| Bunim-Murray Productions            | Hulu                               | SuperSphere Productions       |
| CAA                                 | IBM                                | Technicolor                   |
| CBS Digital                         | Immersive Media                    | The Virtual Reality Company   |
| Cryworks Inc.                       | IM360                              | The Void                      |
| Daqri                               | InnerspaceVR                       | Threshold Entertainment       |
| Deluxe Entertainment Services Group | Janet Yang Productions             | Two Bit Circus                |
| Digital Domain                      | Jaunt                              | United Talent Agency          |
| DirecTV                             | Legend VR                          | Universal Pictures            |
| Dolby Laboratories, Inc.            | Machine Shop                       | USC School of Cinematic Arts  |
| Dreamworks Animation                | Ventures, companies of Linkin Park | USC Viterbi                   |
| DTS                                 | Manatt Digital Media               | USC VRSC                      |
| Edwon.TV                            | MasterImage3D                      | Verizon                       |
| Endemol Beyond                      | NBC Entertainment                  | Vrideo                        |
| Entertainment Technology Center@USC | Digital                            | Vrstudios                     |
| Epicenter VR                        | NBC Universal Pictures             | Vubiquity                     |
| Felix & Paul                        | New Amsterdam Media                | Walt Disney Studios           |
| Fox Broadcasting                    | Nokia Technologies                 | Warner Bros. Entertainment    |
| Fox Home Entertainment              | Oculus                             | Wemersive                     |
| Fox Sports                          | Paramount Pictures                 | WME IMG                       |
| Gener8                              | Positron                           | xRez Studio                   |
| Google/YouTube                      | Rabbx Inc.                         |                               |
|                                     | Rothenberg Ventures                |                               |
|                                     | Sixsense Entertainment, Inc.       |                               |
|                                     | Sony Pictures Entertainment        |                               |
|                                     | Specular Theory                    |                               |

## Appendix 2

Five days before the workshop the attendees were asked to submit topics that they would like discussed during the moderated discussions. Below is a roll-up of their submissions. There were far more topics than available time. This is a good reference list for future discussions.

-----

### The Business of VR Moderator Questions

How can VR avoid becoming the next 3D? Should we distance ourselves from low-resolution, low-quality VR experiences? Or embrace the spectrum of experiences, from cardboard to Vive?

What is your informed guess for (list on flipchart);

- The size of the VR market in next 2 years?
  - How are you defining the market?
  - How did you approach sizing the market in your guess?
- The demographics of the market in the next 2 years?
- The pattern of adoption of VR? (normal bell curve, multiple niche markets, “big bang disruption” (i.e. suddenly everyone wants it and demand spikes), etc.)
- The industries that are interested in funding and using VR in the next 2 years?
  - How do you think they will use it? (advertising, training, ...)
- The types of VR experiences that will capture the mass market’s imagination

Which business models do you predict will successfully monetize this new medium in 2016?

How soon will there be enough of an installed hardware base to justify the high cost of producing quality VR content?

Media landscape in 5 years

- What’s the balance among immersive VR experiences, interactive games, linear storytelling (movies, TV, webisodes), and other formats
- What’s the balance between produced and unproduced (social VR, social media)

How will VR be sold at retail?

- What price would you guess for various business models? (one VR unit, subscription, VR on demand, bundled with other content, ...)
- What needs to be standardized to support retail sales?
- Who will emerge as aggregators of VR experiences, and what effect will this have on existing networks and vendors?

### Advertising in VR

- How will advertising be integrated into VR?
- What types of advertising revenue models will work well in VR?  
For example, pay-per-click is not good in VR because it takes you out of the experience.

What metrics will be of value to advertisers when determining their spend;

- direct metrics, like eye tracking time on an ad or logo?
- indirect metrics, like research on whether VR enhances memory retention?
- What brands will move (or are moving) marketing or content dollars into this space?

### Talent

How is creative and technical talent covered by rights agreements, guilds/unions, etc.?

- What experiences have you had in this area?
- How is international talent being used in VR?

Who are the VR/AR startups to watch? (create a list)

### Indie VR

- Discuss ways that an independent VR gaming and entertainment studio can forecast the market, develop monetization models, and conceptualize and develop products for a consumer market that does not exist yet?
- What kinds of business models and partnership structures currently exist?
- How do you estimate production costs?
- How do you budget?
- What are thoughts on work for hire versus own the IP?
- What is a reasonable budget for indie-productions?
- How promising is the B2B market for paying for VR production?
- Is it better for developers to design experiences for specific platforms or be platform agnostic?

What services can existing production workflow companies (Deluxe, Technicolor, Sony DADC) offer to integrate VR into their services?

### Technical issues

What infrastructure changes will be necessary to manage and deliver VR content to the consumer?

What are your thoughts on the quality of the various displays?



# Appendix 3

## Workshop Program



### The Business of VR



Produced by  
Entertainment Technology Center @ USC  
&  
The Advanced Imaging Society

November 17, 2015  
Skirball Center  
Los Angeles, CA

## Sponsored by



ADVANCED IMAGING SOCIETY

The **Advanced Imaging society** was formed in 2009 by our industry's creative stakeholders including The Walt Disney Studios Motion Pictures, DreamWorks Animation (DWA), Sony, Paramount Pictures, IMAX, Dolby, Panasonic, MasterImage and others to advanced the creative arts and sciences of stereoscopic 3D.

As new cutting edge technologies including high dynamic range (HDR), virtual reality (VR), high frame rate (HFR), and 4K come to the forefront, the Society has been charged with "informing the content pipeline" of professionals on these emerging innovations.

With chapters in the U.S., China, Japan, Canada, the E. U., India, and the U.K. the organization serves thousands of professionals participants in over 20 countries active in improving the arts and technologies of advanced imaging. The organizations hosts professional education seminars and awards throughout the world.

[www.advancedimagingociety.com](http://www.advancedimagingociety.com)



The **Entertainment Technology Center** at the University of Southern California is a think tank research center that brings together senior executives, innovators, thought leaders, and catalysts from the entertainment, consumer electronics, technology, and services industries along with the academic resources of the University of Souther California to explore and act upon topics and issues related to the creation, distribution, and consumption of entertainment content. As an organization within the USC School of Cinematic Arts, ETC helps drive collaborative projects among its member companies and engages with the next generation consumers to understand the impact of emerging technology on all aspects of the entertainment industry, especially technology development and implementation, the creative process, business models, and future trends. ETC acts as a convener and accelerator for entertainment technology and commerce through Research, Publications, Events, Collaborative Projects, Shared Exploratory Labs and Demonstrations.

Entertainment Technology Center © USC

[www.etccenter.org](http://www.etccenter.org)

# Program

## 1:00 - Introductory Remarks

**Ken Williams**, CEO Entertainment Technology Center @ USC

**Matt Liszt**, Board of Governors, Advanced Imaging Society; VP Marketing, MasterImage

## Agenda review

**Phil Lelyveld**, VR/AR Initiative Manager, Entertainment Technology Center @ USC

## 1:15 - 3:15 - 10 - minute presentations (with brief Q&A)

**Jeffrey Greller**, Digital Agent with a focus in VR, WME|IMG - The Business of VR content; how creators create, finance and distribute VR content - and what is the ROI.

**Eunice Shin**, Director, Mannatt Digital Media - The evolution of the business models; from promo-driven novelty to monetized content and devices/platforms

**Seth Shapiro**, Principal, New Amsterdam Media, Adjunct Prof, USC School of Cinematic Arts, Governor, Interactive Media, The Television Academy - VR/AR Market sectors, deal flow and roll-out schedules

### -----Stand in place Stretch-----

**Brian Furano**, Director of River Studios, Venture Advisor for Rothenberg Ventures - Virtual reality monetization and distribution; when is it coming and what content will be the tipping point?

**Clifton Dawson**, CEO, Greenlight VR - The VR Industry Report: July 2015, a data- driven perspective of the VR industry.

### -----Stand in place Stretch-----

**Anthony Borquez**, Founder & CEO, Grab - Monetizing VR: the promise of the location-based entertainment space

**Schuyler Moore**, Partner, Stroock & Stroock & Lavan - the future of VR and legal issues.

## 3:15 - 4:15 - Discussion Workgroups

**Anthony Borquez**, Founder & CEO, Grab

**Debra Kaufman**, **Phil Lelyveld**, ETC at USC

**Schuyler Moore**, Partner, Stroock & Stroock & Lavan

**Seth Shapiro**, Principal, New Amsterdam Media, Adjunct Prof, USC School of Cinematic Arts, Governor, Interactive Media, The Television Academy

## 4:15 - Demos & Networking

Companies in the demonstration area;

**CryWorks**, **Deluxe**, **Edwon**, **Grab**, **Innerspace VR**, **Rabbx Inc.**, **xRez Studio**



**Thanks to:**

- Our presenters and moderators
- Ken Williams, ETC Executive Director & CEO
- Karen Tobin, SVP Corporate Sponsorships, AIS
- Philip Lelyveld, VR/AR Initiative Manager
- Edie Meadows, Logistical Coordinator
- Eileen Zuniga, Administrative Support

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## "The Business of VR"

November 17, 2015

### Speakers' Bios

#### **Philip Lelyveld**, VR/AR Initiative, Entertainment Technology Center @ USC

Philip Lelyveld runs the VR/AR Initiative at the Entertainment Technology Center @ USC, a center within the USC School of Cinematic Arts. Phil also consults on emerging opportunities and product strategies for companies in the entertainment, consumer electronics, and related spaces. The VR/AR Initiative studies the creative, technical, and business issues that will shape this new, emerging art form. He recently brought communities of hands-on practitioners together to discuss and document the current states of 'the emerging language of VR storytelling' and 'live VR production workflow.' Before starting the VR/AR Initiative he oversaw the Next Gen Display ('UHD TV Plus') Project and managed the Consumer 3D Experience Lab at the ETC@USC. The Lab researched stereoscopic 3D in the home, on personal devices, in public spaces, in advertising, and in theaters. Prior to joining USC, Phil spent 10 years within Disney's corporate New Technology and New Media group coordinating major entertainment technology initiatives.

#### **Jeffrey Greller**, Digital Agent with a focus in Virtual Reality, WME|IMG

Jeffrey Greller is an agent in WME's Digital Department. In his role, he focuses on Virtual Reality (VR), Augmented Reality (AR) and other forms of Interactive Media & Emerging Platforms. Greller represents a variety of native VR production companies & content creators including NEW DEAL STUDIOS ("Interstellar", "The Mission"), TWO BIT CIRCUS ("Olympics VR"), OTOY ("The Curious Case of Benjamin Button," "Batman: The Animated Experience"), VR PLAYHOUSE ("Redbull VR"), MSSNG PECES ("Dos EquisVR", Starbucks Global Campaign, Google Glass), TOTAL CINEMA 360 ("Love & Sex VR"), OVRTURE ("LockUp VR", "Nighwatch VR") & OTHERWORLD INTERACTIVE ("Sisters VR"). In addition to the representation of pure interactive content creators, Greller also works closely with WME talent across all departments as talent look to leverage new technologies to create new forms of interactive content. Some of those clients include TYLER PERRY, BRANDON FLOWERS, ROB McELHENNEY, THE ROCK, JENNY MCCARTHY, ELIJAH WOOD, JON TAFFER, ADAM SAVAGE & NEIL DEGRASSE TYSON. Greller joined WME in June 2010 where he began his career in the WME mailroom. A graduate of the University of Southern California from the Marshall School of Business, he currently resides in Santa Monica, CA.

#### **Eunice Shin**, Director, Manatt Digital Media

Eunice is a seasoned industry executive, passionate in partnering with innovative and transformative companies to accelerate business, creating competitive advantage and growth opportunities. Eunice leads the advisory services team at Manatt Digital Media (MDM), providing unparalleled, multi-disciplined services in business development and acceleration. Eunice has provided strategic consulting services as a trusted advisor to the major studios, new digital media platforms, and other leading media and entertainment and brand companies. Eunice is passionate about the transformative opportunity with customer engagement in the digital media space, and bridges her network of innovators, content creators, and digital media trailblazers to deliver game changing results. Eunice is a thought leader in the latest disruptive innovations in the industry including MCNs, VR/AR, live streaming, and digital-first entertainment. MDM is at the forefront of digital innovation and multi-platform strategies - globally recognized as thought leaders and connectors in the digital media space. MDM's unique perspective is through the lens of seasoned entrepreneurs, strategists, lawyers, venture capitalists, and incubators - working together to connect the growing ecosystem in digital media.

#### **Seth Shapiro**, Principal, New Amsterdam Media, Adjunct Prof, USC School of Cinematic Arts

Two-time Emmy® Award winner Seth Shapiro is a leading advisor in media and technology. His clients include Disney, Comcast, DIRECTV, Intel, IPG, NBC, Showtime, Universal, Slamdance, Goldman Sachs and a range of investors and new ventures. He is currently completing his first book, a comprehensive history of television. Shapiro is an Adjunct Professor at the USC School of Cinematic Arts and a frequent speaker on business innovation. He has served as an expert before the FCC and has been quoted in publications including The Economist, The New York Times, The LA Times, Variety, The Hollywood Reporter, The Associated Press, The Boston Globe, PBS and The Daily Mail. As Head of Production at DIRECTV Advanced Services, he launched over 25 services, including TiVo by DIRECTV, the world's first major DVR platform. Shapiro sits on the Television Academy's Executive Committee, the Annenberg Research Council and the Producer Guild's New Media Council. He is a Magna cum Laude graduate of New York University and was Adelbert Alumni Scholar at Case Western



Reserve University. With deep roots in the music industry, Brian runs River Studios LA based in Santa Monica, CA. Brian is a producer of the annual Global Citizen festival, and co founder of Riot House Productions. River focuses on end to end VR production and distribution and recently distributed 70,000 VR headsets and branded VR apps with Birchbox as part of their September mailer. Brian received his BA at USC school of cinema television in 2000.

### **Brian Furano, Director of River Studios, Venture Advisor for Rothenberg Ventures**

With deep roots in the music industry, Brian runs River Studios LA based in Santa Monica, CA. Brian is a producer of the annual Global Citizen festival, and co founder of Riot House Productions. River focuses on end to end VR production and distribution and recently distributed 70,000 VR headsets and branded VR apps with Birchbox as part of their September mailer. Brian received his BA at USC School of cinema television in 2000.

### **Clifton Dawson, CEO, Greenlight VR**

Clifton Dawson is Founder & CEO of Greenlight VR ([www.greenlightvr.com](http://www.greenlightvr.com)). Clifton specializes in accelerating the growth of early-stage, mission-driven companies. Prior to founding Greenlight VR, Clifton was Head of Business Operations at AddLive, which built and managed APIs for software developers. In 2014, AddLive was acquired by Snapchat, where Clifton then led growth and monetization projects. Clifton received his BA and MBA from Harvard University.

### **Anthony Borquez, Founder & CEO, Grab**

Anthony Borquez is the Founder and CEO of Grab, an entertainment company focused on games and VR experiences. Grab's games have been played more than 10 billion times worldwide and have been featured across all the app stores. In January 2015, Grab launched their VR Innovation Lab and recently announced a partnership with Lionsgate for the development of the John Wick Virtual Reality Game (expected to launch in 2016). Prior to Grab, Anthony was Chairman/CEO of Blue Label Mobile, a mobile game company acquired by Konami in 2006. At Konami, Anthony served as Vice President of Konami Digital Entertainment and was responsible for the online and mobile business. Before starting Blue Label, Anthony co-founded Spacient Technologies, an enterprise mobile software company that was acquired by Trimble, an industry leader in mobile GPS technology. Dr. Borquez has been teaching at the University of Southern California for 20+ years. He has a dual teaching appointment in the Marshall Business School and the Viterbi School of Engineering. Anthony received his BS, MS, MA, and Doctorate degrees all from the University of Southern California.

### **Schuyler Moore, Partner, Stroock & Stroock & Lavan.**

Schuyler M. Moore is a partner in the corporate entertainment department of Stroock, practicing entertainment, corporate, and tax law. Mr. Moore holds his undergraduate degree from UCLA (Phi Beta Kappa, Summa Cum Laude) and his law degree also from UCLA (first in class). Moore has been practicing in the entertainment industry since 1981, and he represents a broad spectrum of clients throughout the entertainment industry, including producers, sales agents, foreign distributors, and financiers. He has handled some of the largest financing transactions in Hollywood, including Reliance's investment in DreamWorks, the Ratpac-Dune slate financing for Warner Brothers, the Hemisphere slate financing for Sony and Paramount, and the Hunan Group slate financing for Lions Gate. He is the author of several books, including The Biz: The Basic Business, legal, and Financial Aspects of the Film Industry, a popular book in its 4th edition, Taxation of the Entertainment Industry, the leading treatise on that topic, and What They Don't Teach You in Law School. He was an adjunct professor at both the UCLA Law School and the UCLA Anderson School of Management, teaching Entertainment Law and Finance for many years, and he is a frequent speaker and writer on a wide variety of entertainment subjects. Mr. Moore has been named (a) one of the top 100 entertainment lawyers by the *Hollywood Reporter*, (b) one of the top 25 entertainment lawyers by *Variety*, (c) one of the top 100 lawyers in California by the *Daily Journal* and (d) one of top 3 "Most Influential Lawyers" in media by the National Law Journal.

### **Debra Kaufman, Entertainment Industry Reporter, ETC**

Debra Kaufman has covered entertainment technology for the last 28 years, for *Variety*, *The Hollywood Reporter*, *American Cinematographer*, *International Cinematographer*, *British Cinematographer*; her work has also appeared in *Wired*, *The New York Times*, and *The Los Angeles Times*. She currently works with the Academy of Motion Picture Arts & Sciences, USC's Entertainment Technology Center and SMPTE. She has moderated panels and appeared as a speaker on panels at NAB, CES, HPA Tech Retreat, NATPE, Produced By and many other trade shows, consulted on post production, mobile entertainment and other industry issues. She holds a Master's degree from UCLA and a Bachelor's from UC Berkeley. She has also worked as a writer/editor at UNESCO in Paris and the United Nations in New York.

# Thanks

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