

A MESSAGE FROM THE EXECUTIVE DIRECTOR



This Summer, ETC@USC activities focused on the latest developments in Project Cloud and growing momentum around Virtual Reality. ETC was also pleased to have new member Verizon present their annual digital security

briefing in our offices. We look forward to more such events from Verizon and other members.

As Project Cloud continues to grow in size and scope, so too has the size of its quarterly meetings. Google's Venice office provided an ideal location to accommodate all of our working group members. We are grateful for the support, as we are to all of the member companies that host our off-campus meetings.

In August, at the School of Cinematic Arts, we explored the state of the art in live VR production. The afternoon event attracted a stellar group of creators and inventors. Participants shared, learned, experienced and explored the current realities and visions for the future.

—Ken Williams

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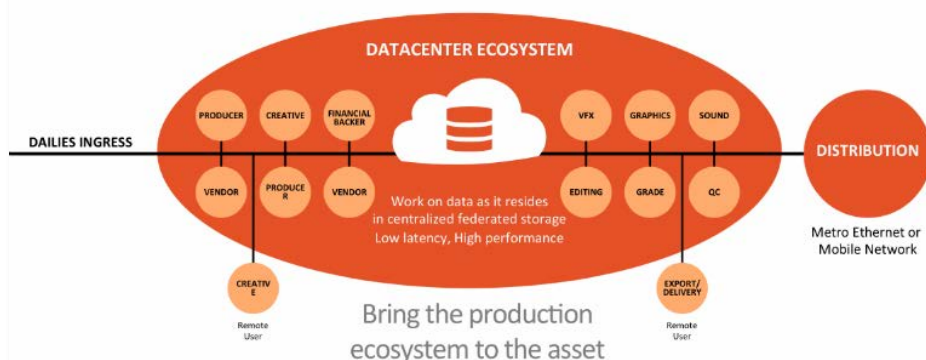
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WORKFLOWS AND SECURITY AT CLOUD QUARTERLY UPDATE

Google welcomed members of the ETC Project Cloud working groups to their Venice office location for this summer's quarterly update. The agenda represented the considerable progress made since the project's inception in 2013, including the introduction of the MPAA's new security guidelines. This is a fundamental milestone in moving studios toward the cloud.

Formulation of these security requirements evolved through a team of leading security experts from the Hollywood studios and the Cloud Security Alliance, working with the Entertainment Technology Center's Project Cloud. They helped shape the methodology for security guidelines related to cloud-distributed media content. These recommendations were handed off to CSA and the MPAA in September 2014 — and on March 17 of this year, the MPAA released the "Content Security Best Practices" report to the public. The MPAA's guidelines were presented at the quarterly update by MPAA's

former Chief Security Officer Wendy Frank.

ETC's Erik Weaver captured the key elements of the entertainment industry's migration to the Cloud in his opening presentation, *Exabytes & Beyond: Key Changes in the Life Cycle*. Guillaume Aubuchon, of Digital Film Tree, addressed security matters in his discussion, *Security: Federation & Identity Management in the Digital Workflow*. Another product of the working groups is String, a robust, open-source asset identification system, presented in practical application by Chris Chen of Prime Focus Technologies in his talk, *String: Asset IDs and Parent-Child Relations*. USC graduate student filmmaker, Abi Corbin, revealed production details for *The Suitcase*, the next test flight project following last year's *Luna*.

The sessions were recorded and are available for viewing on ETC's YouTube channel at <https://goo.gl/I4Ovbx>

CONVENE

ETC enjoys a long-standing history as a neutral think tank and research center within USC's School of Cinematic Arts that convenes executives, innovators, thought leaders and catalysts. Part of the ETC mission is to convene industry peer groups and partners to share knowledge and experience.

CAMERA-CAPTURE VR FORUM CAPTURES STATE OF THE ART

Camera-capture VR Production Workflow was the topic of the August 4, 2015 USC's Entertainment Technology Center event held at the USC School of Cinematic Arts. The goals of the event organized by ETC's Project Manager Philip Lelyveld, were 3-fold: develop a sense for the current state of the art in camera-capture Virtual Reality production, share ideas among peers, and build community.

Over eighty working professionals with hands-on involvement in live-action VR production from over forty organizations participated in the presentations and discussions.

STUDIO TECHNOLOGY LEADERS DINNER

Disney/ABC Television Group Executive VP of Global Operations and Chief Technology Officer Vince Roberts received the Bob Lambert Technology Leadership Award from the Entertainment Technology Center@USC on June 11. ETC's Studio Technology Leaders Dinner, held at USC's Town and Gown, brought together influential media, entertainment and technology executives from major studios and leading tech companies. The evening also featured a panel of top studio tech leaders including Wendy Aylsworth, former senior VP of Tech Ops, Warner Bros.; Craig German, executive VP of worldwide technical operations, Paramount; Arjun Ramamurthy, VP of technology, Fox; Spencer Stephens, CTO, Sony Pictures; Jamie Voris, CTO, Disney; and Michael Wise, CTO, Universal Pictures, discussing the most pressing trends, challenges and opportunities facing the entertainment industry.

CHINESE DELEGATION BRIEFED AT ETC



60 students and business professionals from Cheung Kong Graduate School of Business heard presentations by ETC Executive Director and

CEO Ken Williams and Program Manager, Philip Lelyveld. ETC also convened a panel of student participants to share their views on entertainment and their access to it today.



After eight 10-minute presentations of case studies by Jaunt, Supersphere Productions, Disney/ABC Television Group, Two Bit Circus (2BVR), HeadcaseVR/Miranda Studios, Google Jump, New Deal Studios and IM360 (Immersive Media) the attendees broke into three moderated discussion groups. Using the case studies as the jumping off point, each group had a wide-ranging discussion of the current state of the live-action VR production scene. They shared their own experiences and gave feedback to others. Following the breakout discussions all of the attendees gathered together to network and to experience eight VR content demos.

In a summary report distilled from the presentations and discussions, the consensus on what VR makes uniquely possible suggests, "The goal of all art is to make an emotional connection. People crave intimacy. VR offers a more direct way of achieving those goals than other media types."

As the industry begins to understand the "language" of VR, attendees see VR as a "blend of cinematic language, game mechanics, and interactive theatre." Choreographers and theatre directors will inform the development of VR as much as, if not more than, movie/TV directors and game developers.

KATHLEEN ALLEN: NARRATIVE INTELLIGENCE & WICKED SOLUTIONS



Kathleen Allen, PhD, professor of Clinical Entrepreneurship at the USC Marshall School of Business, author of more than 15 books, and an expert in commercializing patented technologies, told her June 4th ETC Mega Session audience that

"'Wicked Problems' demand wicked solutions." "Wicked Problems," an expression coined in the 1970s by public policy scholars, Horst W.J. Rittel and Melvin M. Webber, describes not a degree of difficulty but problems that defy solution by traditional means.

As she focused on the current state of the entertainment industry, she noted a myriad of issues from market fragmentation and migration to The Cloud to securing and monetizing digital content and predicting returns on innovation. Faced with uncertainty, most organizations "stuck in the sandtrap of prior knowledge," approach problems with traditional analysis, respond to a symptom and tame only parts of the problem.

Wicked Problems require different thinking and new levels of collaboration. Time-worn thinking and silos don't work. Instead, solutions come from "diverse perspectives, leverage interactions that can't always be seen and are always changing."

Allen proposes that Wicked Problems present a wicked opportunity to turn a problem into a phenomenon. The secret is the use of narrative intelligence to solve business problems. "Step into the customer's shoes. How do our customers want to be entertained?"

"The idea is to spend enough time in dramatic conflict (the problem) to ensure a transformational pivot point and satisfying resolution."



VERIZON REPORTS ON DATA SECURITY

Verizon executives shared their 2015 Data Breach Investigations Report at the ETC in July. The report's findings reveal not only the massive threat every enterprise faces but detailed the average costs associated with a data breach. The presentations identified many of the most common threats, found that 96% of them in 11 categories and noted that more than 70% of attacks could be prevented. A key finding is that systems inherit legacy vulnerabilities, some of which date back to the late 1990s. ETC members have access to the complete report through ETCCentric.org.

The Suitcase: 2nd Short to Push Boundaries of Cloud Production

The Suitcase, a new short film and technical test, is designed to further evaluate network-based workflows with a focus on Metadata, High Dynamic Range and 360 solutions. A key aspect of the project includes implementation of the C4 framework, API interoperability and onset metadata "objects" that can be carried to online monetization. The mission of the project is to explore changing technology in narrative form on a studio-driven project.

Production partners for The Suitcase, which tells the story of an ordinary baggage handler whose life is turned upside down when he harmlessly steals a suitcase that contains terrorist plans, is sponsored by Disney, Amazon, Universal, Google, Sony, HBO, Equinix, Digital Film Tree and Prime Focus.

TALKING POINTS: ETC SPEAKERS ACTIVE @ INDUSTRY EVENTS

Executive Director and CEO Kenneth Williams; Program Managers Erik Weaver and Phil Lelyveld all represented ETC@USC at important industry events this quarter, sharing both their professional expertise and ETC perspective.

VRLA

VRLA continues to reflect the growth of VR in LA and elsewhere. Its August 29th gathering at the Los Angeles Convention Center Concourse was 9 hours of demonstrations, exhibits, talks and ETC@USC VR Project Manager Phil Lelyveld participated in sessions throughout the day, represented ETC and reported on the latest trends and discussions from the event.

2015 Creative Storage Conference

Project Cloud Manager Erik Weaver delivered the opening keynote at the 2015 Creative Storage Conference in Culver City. The one-day conference organized by the Entertainment Storage Alliance and Coughlin Associates, brought together influential digital storage providers, equipment and software manufacturers and professional media and entertainment end users to explore the conference theme of "Exabytes for Video".

Weaver's keynote, *Exabyte & Beyond: Preparing Yourself for the Upcoming*

"Network-Based" Revolution, presents a solid foundational overview and perspective on the tectonic shift underway as the media & entertainment industry migrates to the Cloud. Unlike the move from film to tape to file, M&E companies do not have lengthy transition times in the shift from file-to network-based life cycles. His talk bolstered the logic behind this aggressive change, suggested 4 strategies to master and cited 4 technologies that will change the near future.

SIGGRAPH

Publishing manager and consultant Don Levy attended SIGGRAPH, the annual conference for computer graphics, animation, visual effects and interactive media. To no surprise, VR was a major attraction. ETC reported from the show and continues with reports and follow-up on the latest technologies.

In addition, Don also spoke at software company Unity3D's Educators Breakfast. Levy addressed the growth of non-traditional and visual methods for learning and expression.

Coming up this Fall...

AMI

Erik Weaver, Project Cloud lead, is the opening keynote speaker at AMIA 2015. AMIA is a nonprofit international association dedicated to the preservation and use of moving image media. The annual AMIA Conference is the largest gathering of motion picture and recorded sound archivists and interested professionals.

Digital Hollywood

Phil Lelyveld hosts and moderates *The Interface: An Object of Beauty: The Doorway to Everything* with John Underkoffler, the designer of computer interfaces for Steven Spielberg's *Minority Report*, who is now CEO & Chief Scientist, Oblong Industries. The session is part of Digital Hollywood's Immersive Entertainment and Technology track.

Don Levy reprises his role as moderator for *Hollywood and the Digital Consumer: How Technology, Content and Services Establish the Next Level of Consumer Entertainment Experience*.



The Entertainment Technology Center @ the University of Southern California (ETC) is a think tank and 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 University of Southern California to explore and to 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 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.

For membership information, contact Edie Meadows at emeadows@etcenter.org

Sign up for the ETC's **Daily News Brief**, especially compiled for the media, entertainment and technology professional: <http://eepurl.com/tBFDf>

UPCOMING EVENTS

- Oct. 19-22** Digital Hollywood, Marina del Rey
- Oct. 26-29** SMPTE Tech. Conf., Hollywood
- Nov. 1-3** NAB Futures, Laguna Beach
- Nov. 11** Project Cloud Meeting @ Disney
- Nov. 18-21** AMIA Conference, Portland, OR
- Nov. TBD** VR - The Business Landscape
- Dec. 11** All Members Meeting @ FOX