

SONY VIRTUAL REALITY INNOVATION PROGRAM

Program Overview and 2016 Highlights

SONY



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PICTURES**



SONY MUSIC

etc SM ENTERTAINMENT
TECHNOLOGY
CENTER

VR Innovation Program at Sony

Overview

- Sony Pictures Entertainment (SPE) and Sony Music Entertainment (SME) recognized the emerging opportunity in VR and launched the Sony VR Innovation Program in the summer of 2016 to develop VR storytelling techniques and prototype VR experiences
- SPE and SME formed a partnership with the University of Southern California's Entertainment Technology Center (USC's ETC) to tap into the talent pool and faculty of the institution at the intersection of technology and content
- The program is a unique corporate innovation model for Sony and serves as a content lab where new VR concepts based on SPE and SME IP are prototyped by utilizing the latest technology and development methods
- A select group of students ("associates") with diverse backgrounds in areas such as computer science, game design, filmmaking, and 3D art/modeling are recruited and tasked with creating innovative and functional prototypes of VR experiences over a condensed time frame
- The program is spearheaded by SPE and SME with executive sponsorship by Sony Music Global Digital Business, Sony Pictures Home Entertainment and Sony Entertainment; divisional participation spans multiple groups, including the Music labels, Home Entertainment, Theatrical, Animation, Television, and People & Organization
- The 2016 program generated significant tangible output and learnings for the sponsoring divisions and is returning for a second summer in 2017; this year, the program scope is expanding to AR (augmented reality) and live action narrative VR

2016 VR Innovation Program at Sony

Highlights of inaugural summer program

- For the 2016 program, 14 associates were divided into 7 teams and developed advanced prototypes of original VR experiences in just 10 weeks
- Project teams were carefully constructed to ensure that each team was equipped with a balanced skillset between technical/ programming and creative/ design (Appendix A)
- The condensed timeframe was achieved by utilizing agile methods, such as rapid prototyping/ iterative design, and drawing upon key principles from software development, game design, and production (Appendix B, C)
- Projects with commercial potential were selected for the program, and were either new concepts for prototyping or discrete work streams of existing VR experiences already in production; specific projects included a virtual music listening room, VR music experience for a new single, VR game based on a TV franchise, and VR experiences based on theatrical titles
- In addition, experiments were conducted to understand the use of volumetric capture technology (3i), 3D audio, and AR platforms
- A robust white paper was developed that detailed key learnings and best practices, including the hybrid development approach to VR content creation utilized during the program
- A final 'demo day' allowed the associates present their work to the broader Sony community; executives and employees of all levels were invited to demo the projects and provide feedback

2016 VR Innovation Program at Sony (cont'd)

Highlights of inaugural summer program

- The program generated numerous benefits, including:
 - Tangible progress creating new VR experiences with commercial potential for the studio and music labels, one of which laid the foundation for a priority VR initiative currently in early development
 - Meaningful creative and technical contributions by Associates for VR experiences in production that improved the creative output and resulted in direct cost savings
 - Shared learnings for associates and executives around an innovative, hybrid approach for VR development, with best practices captured in a detailed white paper that was shared internally across Sony
 - A new pipeline of talent for Sony, many of whom have already pursued and secured additional opportunities at SPE, SME, and Sony
 - Validated a new model of corporate innovation for Sony Pictures, Sony Music, and Sony Entertainment in partnership with USC's ETC

Assigning the ideal team for projects

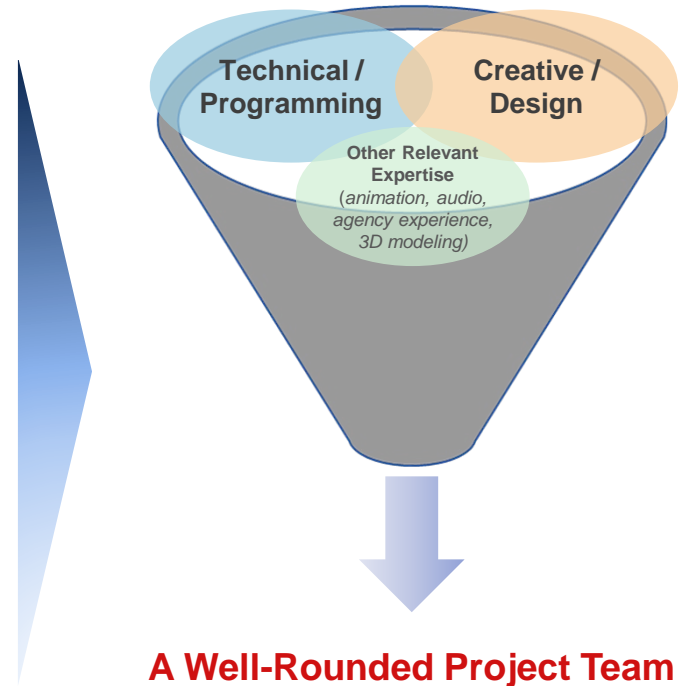
A two-step process

Rapid Pitch Team Exercise

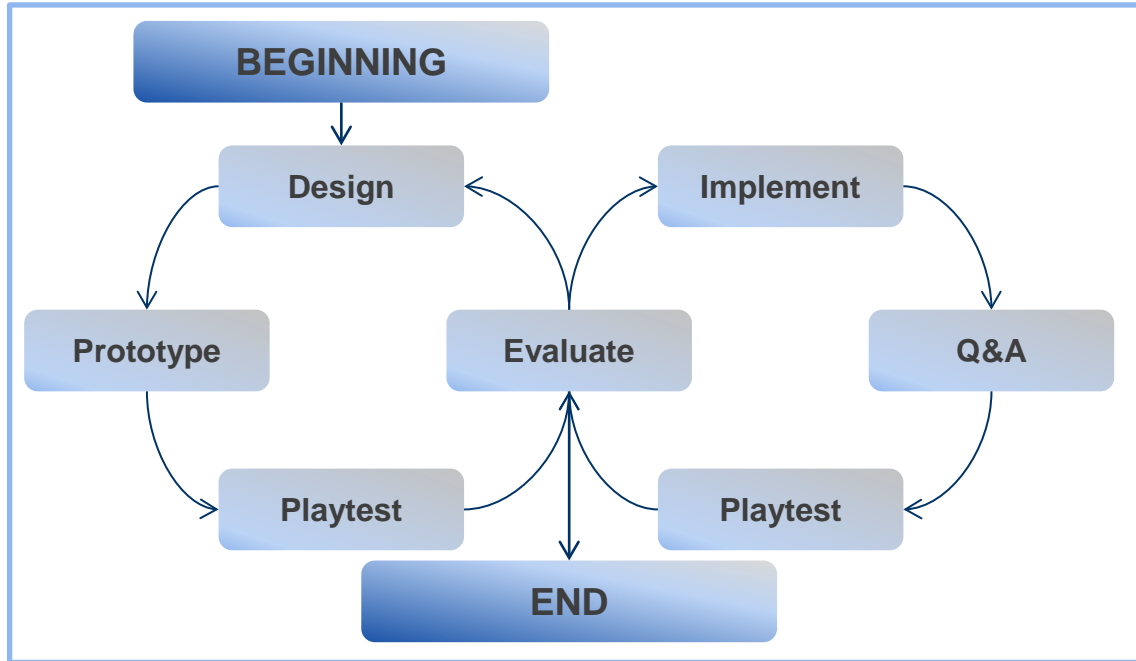
- All associates were matched randomly over the first two days and challenged to brainstorm and pitch for each of 7 projects
- As a result of this exercise, every Associate was able to provide creative input to all 7 projects

Team & Project Assignment

- Based on individual Associate's skills/background and the dynamics and styles observed from the rapid pitches, Faculty Advisors assigned teams to the 7 projects as the next step
- The main consideration was to ensure that each team be equipped with a balanced skillset between technical/programming and creative/design
- Specific expertise from certain individual Associates, such as 3D modeling proficiency, audio design, animation background and experience working with agencies, was also taken into account to maximize the productivity

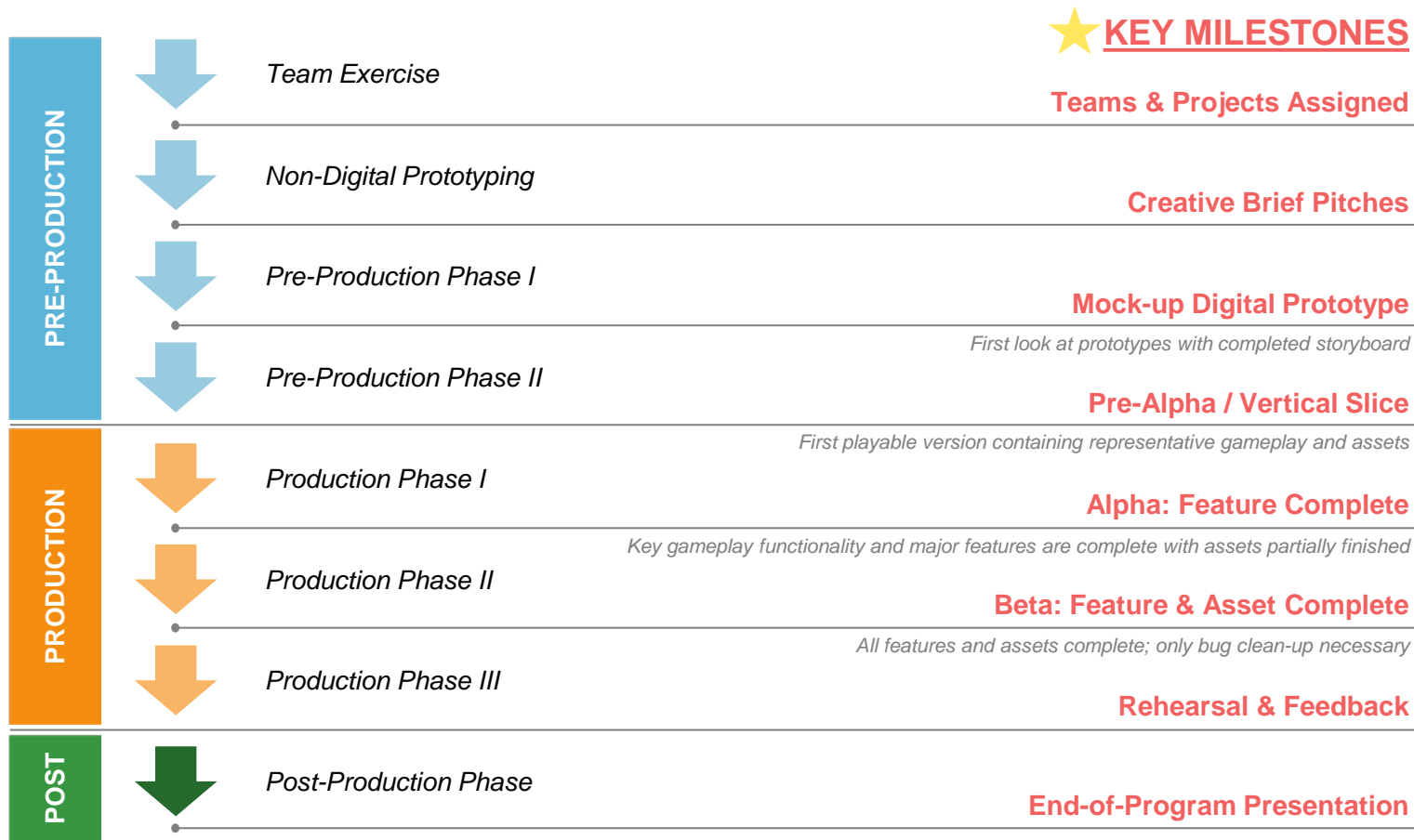


A rapid prototyping / iterative design approach enabled timely feedback through frequent iterations



- The **more iterations** a project goes through, the better the project will be
- The goal is to **minimize** expenses in the **prototyping stage** to create the best user experiences in the most efficient manner
- Teams were encouraged to **constantly test** the prototypes among faculty and executive advisors, as well as peer associates

High-level summary of 10 week approach



MAXIMIZE ITERATIONS THROUGH EACH PHASE

2016 and 2017 USC VR Participants

2016 VR Associates

Christine Barron
 Tonia Beglari
 Yiwen Dai
 Fred Fernandez
 Gabriela Gomes
 Eric Hsieh
 Jason Hwang
 Thomas Kelleher
 Valerie Lin
 Maxwell Maynard
 Bharath Sn
 Matt Stern
 Liam Vickers
 Bartow Weiss

2016 VR Associates

Aaron Ashby
 Allison Comrie
 David Nessler
 Deena Baum
 Drew Perlman
 Jiadi Deng
 Joe Wise
 Jung-Ho Sohn
 Mari Kyle
 Priyam Parikh
 Sikandar Sidhu
 Xian Lu

USC Faculty Advisors (2016 and 2017)

David Nelson, *Project Manager for MxR, the seminal virtual reality research lab at the Institute for Creative Technologies, USC*

Chanel Summers, *Adjunct Professor / Director of Experimental Audio Design Lab (EADL), USC School of Cinematic Arts, Interactive Media & Games*

Program Contacts

Program Founders and Managers:

Sonya Joo, *Sony Pictures Entertainment (sonya_joo@spe.sony.com)*

Brad Spahr, *Sony Music Entertainment (brad.spahr@sonymusic.com)*

USC Entertainment and Technology Center:

Kenneth Williams, *Executive Director & CEO, ETC*

Phil Lelyveld, *Program Manager for ETC*
