CS213
Creating Great VR: From Ideation to Monetization

Aaron Davies
Intro
Week 1 (April 4)

The Emergence of VR: Past to Present

Goal: Orient students with historical inflection points leading to the emergence of consumer VR including technology advancements/successes/failures. Outline present day state of the industry.
Week 2 (April 11):

*Imminent Advancements and Futurecasting*

Goal: Identify current focal points for research and advancement (both SW, HW). Identify/predict near-term technology advances with reasonable level of confidence. Review thematic and/or conceptual areas of advancement 5+ years out.
Week 3 (April 18):

*Identifying Technology Strengths and Opportunities*

Goal: Discuss the role of content in advancing new mediums. Review practical case studies drawn from various technology platforms. Identify new technology value propositions, expectation variables, and adoption factors at industry and consumer levels.
Week 4 (April 25):
Project Commitment Strategy

Goal: Learn how to identify the right opportunities, perform competitive analysis, and ultimately make the best project commitment. Assessment of market strategies including first to market vs. fast follower. Navigate potential pitfalls of overlapping core platform value propositions. Factor for evolving marketplaces and anticipate unexpected factors/competitors.
Week 5 (May 2):

[Guest Lecturer] A Real World Vignette: Developing successful VR content

Goal: In this guest lecture, hear directly from an early VR developer about their ventures into being a first mover on a new technology platform. Historical background on the DNA and inclination of the studio towards new technology experimentation, explanation of success factors and how they evolve as VR matures, hindsight assessment with best practices for new entrants into the developer ecosystem.
Week 6 (May 9):

*Design -> Prototype -> Feedback Loops*

Goal: Discuss best-known methods for effective conceptual design and documentation. Identify core internal and external documentation needs. Proving and refining concepts through rapid prototyping process. Effective and timely feedback practices. Exit indicators and criteria for moving into dedicated development.
Week 7 (May 16):

*Pitching, demoing, and funding*

Goal: Identification and concise dissemination of core value propositions. Learn ins and outs of evangelizing projects to effect external adoption or endorsement. Instruction on typical development and business models for VR experiences. Team makeup and partner terms overview.
Week 8 (May 23):
*Building the Right Team and Adaptive Development Processes*

Goal: Identify project demands for various development disciplines. Learn how to identify, engage, partner, and collaborate with complementary teams and agencies. Instruction on best practices for active development. Overview of IP protection. Learn how to identify, consider and adopt/stockpile innovations which surface through the development process.
Week 9 (May 30):

*Launching product*

Goal: Discuss product lifecycle planning. Review breadth of options for delivering product to consumers including pricing models, promotional programs, and distribution.
Week 10 (June 6):

*Product evolution & sustaining growth*

Goal: Products are not “done” once they’re launched. This unit will focus on behaviors and tools to sustain success (or recover from sub-par release). Learn how to weigh cost/benefits of iterative product releases vs. product updates. Evaluate and react to consumer feedback.
Week 1:  
*The Emergence of VR: Past to Present*

Goal: Orient students with historical inflection points leading to the emergence of consumer VR including technology advancements/successes/failures. Outline present day state of the industry.
1838 – Wheatstone Mirror Stereoscope
1851 – Brewster Stereoscope
1929: Link Trainer
1929: Link Trainer
1935: “Pygmalias Spectacles” by Stanley G. Weinbaum
1945: McCollum Patent for Stereoscopic TV Apparatus
1962: Sensorama (Morton Heilig)
1962: Sensorama (Morton Heilig)
1962: Sensorama (Morton Heilig)
1960: Heilig’s Stereoscopic TV HMD
1961: Philco Headsight
1960’s – Electromechanical Simulators
1960’s – Electromechanical Simulators
1962 Bell Helicopter

“[In] one of the experiments, the observer sat in a comfortable office chair inside the building. A camera was mounted on the roof, and two people were playing catch on the roof. And the observer could watch the ball going back and forth.

And then suddenly one of the players threw the ball at the camera, and the observer ducked. It was clear that the observer thought that he was at the camera and not comfortably safe inside the building. My little contribution to virtual reality was to realize that we didn't need a camera. We could substitute a computer.”

-Ivan Sutherland, Proto Awards Oct 2015
1963 Ivan Sutherland “Sketchpad”
1965 – Ivan Sutherland “Sword of Damocles”
1965 – Ivan Sutherland “Sword of Damocles”
Steve Mann's "wearable computer" and "reality mediator" inventions of the 1970s have evolved into what looks like ordinary eyeglasses.
1982 – VCASS
1984 – VPL Research
1985 – NASA Virtual Environment Display System
1987 SegaScope 3-D Glasses
1989 NES Power Glove
1989 NES Power Glove
1989 NES Power Glove
1991 – Virtuality 1000 Series
1991 – Sega VR
1991 – Sega VR
1991 – ABC Primetime VR Feature
1995 – Nintendo Virtual Boy
1995 – Nintendo Virtual Boy
1995 – Nintendo Virtual Boy
1995 – Forte VFX1
2013 – Google Glass
2012 – Oculus Rift Prototype (E3)
2012 – Oculus Rift Kickstarter

Developer kit for the Oculus Rift - the first truly immersive virtual reality headset for video games.
2013 – Oculus DK1
2013 – Oculus Rift HD Prototype
2014 (January) – Crystal Cove Prototype
2014 (June) – Oculus DK2
2014 (June) - Google Cardboard
2014 (September) – Crescent Bay Prototype
2014 (December) – Gear VR
2016 (March) – Oculus Rift (CV1)
2016 (April) – HTC Vive
2016 (November) – Google DayDream
2016 (December) – Oculus Touch
2017 (April) – Gear VR Controller
End
Sources

• HMD – History and objectives of inventions
• SegaRetro