



PLATFORM PLAY - THE MOBILE CHALLENGE OF HALO: SPARTAN ASSAULT

Paul Lipson – Microsoft Studios





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SPECIAL THANKS – OUR PARTNERS AND TEAM

- VANGUARD GAMES

- Arthur Houtman, Martin de Ronde, Hans Tasman, Ramon Kerstens, Jelle van der Beek, Edwin van Gessel, and the entire development team in Amsterdam – bravo!

- 343 INDUSTRIES

- Dan Ayoub, Graeme Jennings, Ben Cammarano, Mike Ellis, Greg Hermann, and the entire Halo Pub team
- Bonnie Ross, Frank O'Connor, Kiki Wolfkill, Josh Holmes, Kevin Grace, Ed Kalletta, Matt McCloskey, and everyone on the Halo Council

- CONTENT PARTNERS

- Kristoffer Larson, Brian Fieser, Paul Stoughton, CM Soundlab Team, CM Localization team
- The Sequence Group (Cutscenes)
- Tom Salta, with the talents of Jillian Aversa, NY Film Chorale, Tina Guo, Steve Ouimette, and many more...



HALO

SPARTAN ASSAULT™



KEY TAKEAWAYS

- A close look & listen under the hood of an all new AAA Halo experience, built from the ground up for Windows 8 Tablet, Phone, PC and Xbox One & Xbox 360 – the entire Microsoft device ecosystem
- A breakdown of audio disciplines via challenges, successes, and results
- A view into reverse osmosis: moving from mobile stereo to console multi-channel (instead of the other way around)
- Inspiration and ideas for supporting platform ecosystems of all shapes and sizes

SOUND DESIGN

From Stereo on a phone to
7.1 on Xbox One



THE STEREO CHALLENGE

- Designed from the ground up for Windows 8 PC, Tablet, Phone
- New and legacy assets originally built for console Halo needed to be attenuated and updated for a **stereo** experience
- Top down perspective means listener shift – and FPS assets need tweaking
- New workflow for cutscenes and in-game assets



SFX

- Ambiances



- All new, and redesigned with a wider stereo field for Windows 8, in 5.1 for Xbox One & Xbox 360
- New customized environments for Dratheus V
- Mono Positional one-off sounds and environmental stingers for all platforms

- Vehicles



- New customized assets for Wolverines, Elephants, Hornets, Pelicans
- Baked Doppler for flybys – Banshees, Hornets
- Updated positional flybys for Xbox One and Xbox 360

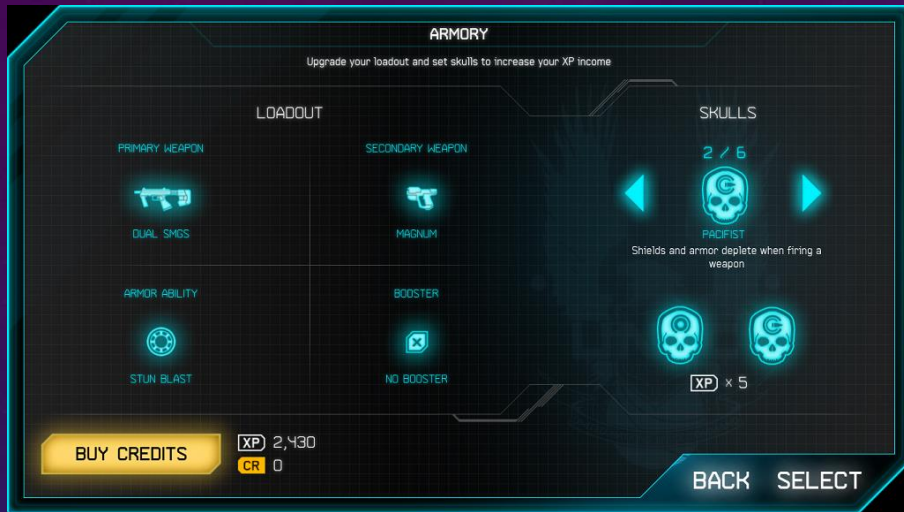
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- Weapons

- Every weapon customized in the game – attenuated for top down perspective shift
- Rebuilt impacts for every surface; tuned to proximity
- Rate of fire – huge challenge! Solved by using a customized version of the sentencing system in customized FMOD EX, and making new loops

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- UI

- New UI assets to match various control schemes for Phone/Tablet touch schemes as well as PC/Xbox controller options
- Touch specific additions on mission start screens
- Xbox Live Achievements
- End of match scheme tied to credits earned/XP

SFX

- Surfaces and PC/NPC Foley
 - New surface foley tuned to location – careful scaling with core sound optimization
 - Updated melee assets to account for **perspective shift**
 - Customized turret and vehicle hijacking sequences
- Physics
 - New Object breaks, impacts, location-specific items
 - Impacts tuned to proximity
 - Full set attenuation for Covenant/UNSC



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- Co-Op Multiplayer

- Xbox Live enabled for Xbox One, Xbox 360
- Another major mixing challenge – two Spartans!
- All new environments, weapons, co-op specific mechanics

SFX WINS AND LESSONS LEARNED



SFX WINS AND LESSONS LEARNED

- Be prepared to touch and attenuate every asset – **perspective shift!**
- Mix is a AAA process – compounded by balance needs for each platform. Mix on earbuds, headphones, and full bandwidth monitors
- Adhere to -18 LUFS mobile loudness recommendation on Win8 tablet/phone
- Be prepared for unexpected asset playback issues – and find solutions for ROF, voice priority, file size limitation

MUSIC

60+ minute original score
composed by Tom Salta



MUSIC

- Aesthetic Challenge
 - All new original score composed by Tom Salta – Award nominated, OST released day and date with original launch in July
 - Adding new music to the canon by balancing legacy sounds with a new approach
 - Striving for emotional moments within a top down dual stick shooter – difficult! Emotional Juxtaposition
 - Mixed and balanced to compliment level SFX and VO

MUSIC



- Legacy



- Stark

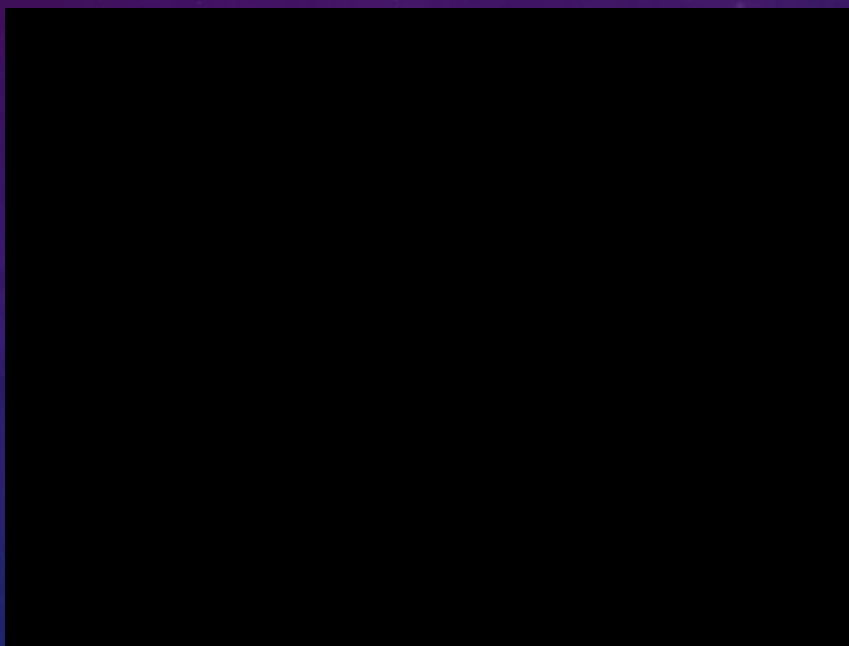


- Epic Evolution



MUSIC

- Production Challenge
 - Custom virtual instruments and live soloists
 - Jillian Aversa – vocal soloist
 - New York Film Chorale - choir
 - Tina Guo - cello
 - Steve Ouimette - guitars



MUSIC WINS AND LESSONS LEARNED



MUSIC WINS AND LESSONS LEARNED

- AAA Music pipeline – same results across all platforms due to good compression scheme and standard stereo spec
- Production budget for big IP the same, no matter with platform requires
- Biggest challenge was adding to the canon with proven capability and consistency
- Tom Salta is a great partner – thank you!

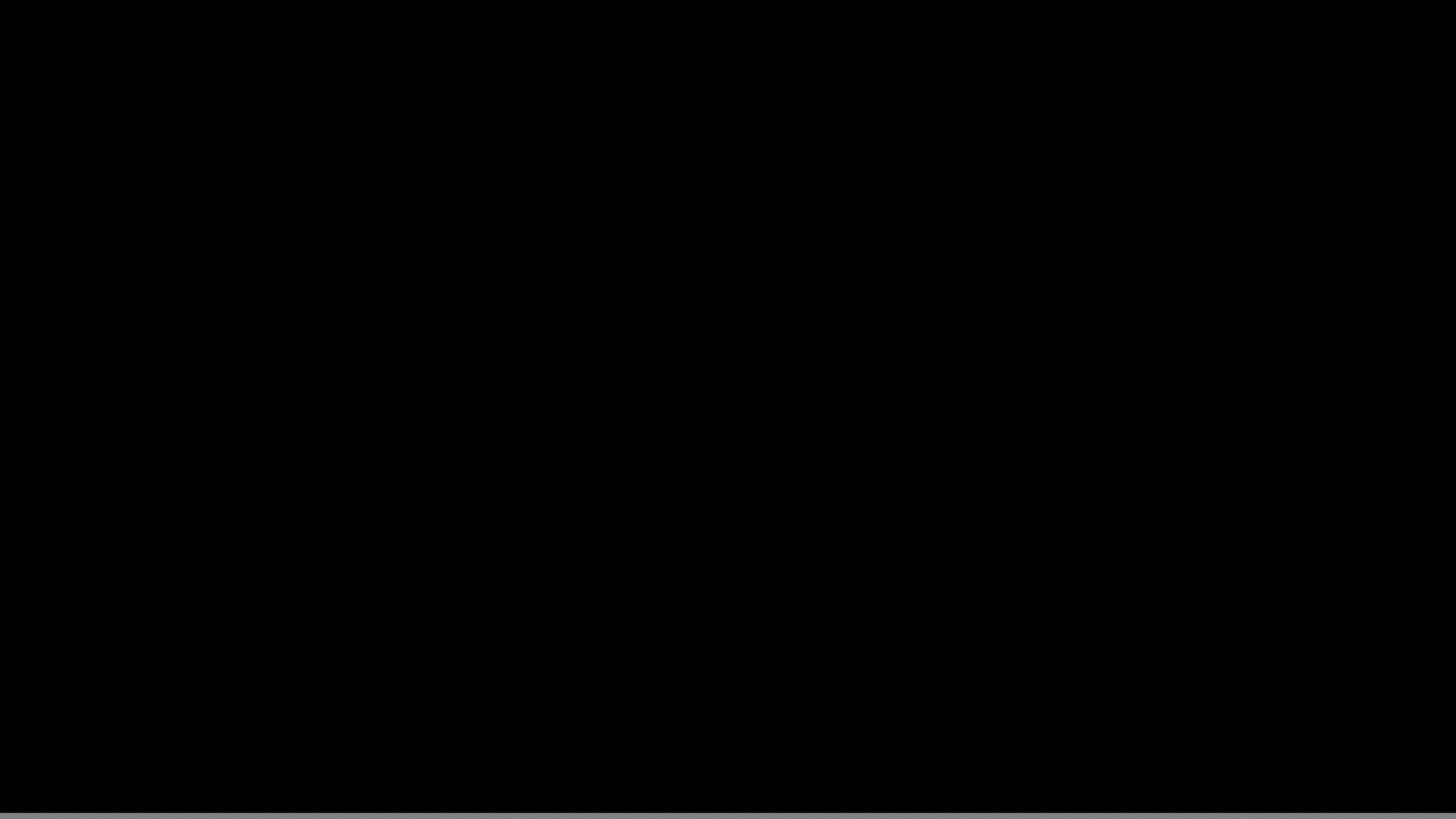
VO, LOC, AND CINEMATICS

New Scripts, Old Marines



CINEMATICS CHALLENGES

- Customized video player needed to be built to support LOC
 - Two stream system: SFX/Music mix combined with VO stream
 - New subtitle system cued in sync with the VO
- Custom video solution scaled for PC/Phone/Tablet
- BINK used for consoles –
 - Two sets of videos: 5.1 for Xbox 360, 7.1 for Xbox One at full res



VO CHALLENGES

- SGA/AFTRA Considerations
 - Paid platform integration fees from Halo 3 and Reach Talent
 - Covenant and UNSC
 - Recorded all new in-game and custscene VO with legacy actors
- Integration Considerations
 - Positional mono PC/NPC player emotes and lines (nice one dawg!)
 - Stereo “futzed” mission updates over comms
 - DSP needs to be shared with LOC!

LOC CHALLENGES

- Full Localization in 12 languages
 - Hit day and date in every market
 - Needed to sync PT session DSP chains with the LOC team
 - Needed to sync Cutscene pacing with LOC team
- Integration Considerations
 - LOC package downloaded to all platforms – same for Win8/Consoles

VO/LOC WINS AND LESSONS LEARNED



VO/LOC WINS AND LESSONS LEARNED

- Remember: SAG/AFTRA fees and signatory considerations
- Track all DSP and production processes with LOC team
- Plan for file package size for all languages
- Plan for playback systems – needs to be solid 30/60 fps on mobile devices (not 24 or 29.97)

THE CONSOLE CHALLENGE

- From Stereo to 7.1
- “reverse osmosis”
- Audio and Art up-res
- 60 frames a second, 1080p, 5.1 and 7.1 surround



XBOX ONE AND XBOX 360

- Xbox 360
 - 5.1 Cinematics - BINK
 - 5.1 positional mono assets
 - “unbaking” baked Doppler flybys, etc
 - New multiplayer co-op mixing considerations

XBOX ONE AND XBOX 360

- Xbox One
 - 7.1 Cinematics - BINK
 - 7.1 positional mono assets
 - Updated positional flybys for Xbox One and Xbox 360
 - Uncompressed assets, improved Art assets
 - “unbaking” baked Doppler flybys, etc
 - New multiplayer co-op mixing considerations



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SUMMARY AND Q&A

