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Game Audio Technical Reference Manual

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Part I: Function Before Form

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Sound in “Traditional” Games

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Do games need sound?

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What roles can audio play in games?

» Turn-based indicators

What roles can audio play in games?

» Rewards/Penalties

What roles can audio play in games?

- » Mnemonic devices and reactive aids



Storytelling and Audio

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What does sound bring to storytelling?

- » Traditional oral storytelling depends on vocal performance
 - Visuals are often secondary or not present
 - Other senses often aren't practical to engage

What does sound bring to storytelling?

- » Audio can play primary or supporting role

Emotional connection to story events and characters

Inform/enhance visuals

Fill in what isn't seen

What does sound bring to storytelling?

» Music

“Silent” films still had musical accompaniment

Gives voice to inner feelings/emotions

Unifies overall story arc – themes, motifs, etc.

So why do video games need audio?

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So why do video games need audio?

- » Immersion – envelop player in virtual world
 - Tell the story
 - Provide feedback (UI, situational)
 - Support/supplement the visuals
- » Emotion – cue player how to feel
- » Familiarity – Casual and/or long-term investment
 - Rewards
 - 'Signature sounds' – something to look forward to (and come back to)

Can games succeed with audio alone?

🎧 Audio 'games'

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Part II: All of this has happened before

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Breaking down game audio

» Various 'authored' components

Musical Score

Sound effects

Ambience

Dialog

» For each:

Content creation (composer/sound designer)

Implementation/game integration

Game Audio vs. Other Media

» Similar Goals

Realism (or Surrealism, or abstract...)

Immersion – “3D”/5.1

Dynamic Range

Emotional context

» Many similar audio production processes

Same recording techniques for ‘live’ sounds

Use of standardized linear tools

Concept of ‘spotting’ for score and other elements

Differences from Other Media: Organizational

Film/TV

- » Composer
- » Orchestrator(s)
- » Music copyist(s)
- » Sound designer(s)
- » Foley artists
- » Recording engineers
- » Mixing engineers
- » PAs/Interns

Games

- » “Sound guy/girl”

Needs to know how things work

May be only ‘voice’ for audio

Luckily this is changing...

Scheduling Differences

» Film

Audio typically post-production activity
All visuals are complete/locked
Hours/days focused on balancing various elements

» Games

“Post-production” = day before ship
Visuals/game constantly evolving
Pipeline often restricts ability to iterate

Aesthetic Differences

- » Games are interactive
 - Player is active participant
 - Immersion/realism
 - Build in incentive/rewards (fun!)
- » Games are personal
 - Often first person POV
 - Players want control, customization
- » Games are social
 - Multiplayer, online, voice chat

Introducing the Players

- » Developer: company creating game
- » Publisher = Funds, markets, and manufactures game
 - 1st party title = developer and/or publisher is platform owner
 - 3rd party title = other devs/pubs
- » Producer = “Director” (may control vision, budget, schedule, or all)
- » Lead Game Designer = overall gameplay vision

Part III: Don't Get Technical With Me

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Technical Differences from Other Media

» Games are non-linear

Timings, order of events can't be predicted

Danger of repetition

» Games are dynamic

Respond appropriately to user's feedback, game state

» Games are generated in "real-time"

Constrained by resources available

⌚ Compromise / balance / smoke & mirrors

Real-time mixing challenges

Resource Limits in Games

- » Memory - instant access
- » Storage space - access with latency
- » Storage characteristics – bandwidth
- » CPU processing – real-time manipulation (DSP, mixing, decompressing, encoding)
- » These resources (and challenges) are shared with rest of game
 - Learn strengths/limits of platform(s)
 - Know audio budget (better: participate)

Functional Challenges

» Interactive

Audio helps tell the player what to do
Audio as a reward

» Audio often useful to hide “reel changes”

» Approaching music and sound design in an interactive environment

Getting beyond ‘on the nose’ audio

It's Still A New Medium

- » Games offer a wide-open palette
 - Lots of experimentation, standards still developing
 - Typically need more than linear tools
- » Variety of audio “pipeline” solutions
 - Authoring tools and playback/rendering audio engines
- » Learning new audio tools and technologies
 - Proprietary or maturing general toolsets

Food for Audio Thought

- » Do games really need to be “cinematic”?
- » Can games do different things than film/TV/other media?
Therefore, can't game audio as well?

~ Fin ~

Questions,
comments?

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