2011 Audio4Visuals::
::Game Sound Design

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Overview of Games Industry

- Worldwide weekend sales for Grand Theft Auto IV exceeded $500 million vs. Harry Potter 6's sales of $394 million\(^1\)
- However, film industry is still larger due to DVD sales, rentals, TV rights etc...
- Growing markets are downloads and online
- "AAA" games $15+ million budget
- Halo 3: $55M + $200M marketing\(^2\)
- So, video games are big business
Game Salaries

- US mainstream video game industry salary in 2009 average was $75,573 USD (~£48K)
- Sound designers and composers earned an average of $82,085 (~£52K)
- Most game audio professionals tend to be more experienced
Games vs. Film

- Games ::
  - Interactive: Hard to predict what will happen
  - Technology: Changes frequently + code
  - Timescale: Time experience is often longer
  - Creativity: Game design often very flexible
  - Heirarchy: Much flatter in games in general
  - Salary: Full-time job more likely in games
Sound Design

- **Creative** :: Design, style, recording, synthesis, editing, compositing, mastering

- **Technical** :: Define how the sound reacts to physics & environment to select or generate the sounds to trigger, where to store

- **Production** :: Purchase libraries, recording schedule, code schedule for complex real-time sounds such as engines and crowds
Design

- **Top-down**: Figure out your “big idea” and worry later about how to actually do it

- **Bottom-up**: Determine what tools can do and figure out creative ways to get the most of them

- Typically one alternates between the two as technical issues and process limitations will force you to be more resourceful
Technical

• Discover the limits of the software and hardware and push them

• Expand the software capabilities and design better audio tools to suit the game

• You will often be pressed by the team for storage space & CPU, so hold your ground

• Things can work one day and be broken (and useless!) the next
Organization

- What do you need to do to get your audio into the game? Over-prepare for the worst

- What tools and resources are you going to use and what software will support your creative design? Work well with your coder & producer

- A good process can be found by making all the right mistakes once and taking risks - exciting!

- Audio is always last, so be prepared for feature drop, no money, no time & no love
Examples

• Synthesis – Gives that “classic age” of gaming sound

• Samples – Great at capturing real sounds but difficult to change

• Software – Use game parameters to modulate sounds
Synthesis

- In Retro City Rampage almost all sounds are synthesized from pulse, triangle and noise waves.
- Mod tracker allows sound artist control over parameters and mix of synthesis and samples but is also tricky to learn.
- OpenModPlug Tracker is free.
Samples

- Often we are asked to duplicate an existing set of sounds that were placeholder.
- I'll often combine samples with synthesis to give a cleaner sound with full harmonics.
- Great for linear gameplay where we can predict what will happen during the length of the sample.
- Do we need to fill the entire memory or is quality win over quantity?
Procedural Sound Design

- Generate audio in real-time based on rules and behaviours
- Has been used in games since the beginning
- Parametric, generative & real-time (ie. flexible)
- Can combine samples with synthesis
- Allow flexibility of layers and real-time effects instead of stereo mixdown
Layered Ambience

• A layered ambience is made up of several different loops
  – Country ambience could consist of frogs, wind, birds and flies
• Reactive ambience would have frogs and birds disappear for a while after a gunshot
• Flies would decrease with wind and vice-versa
Time-of-day Ambience

- City ambience of horses, dogs, distant wolves and crows could react to time
  - Crows and wolves would trigger randomly with more crows during the day and wolves at night
  - Horses would be more present during the day and dogs during morning & early evening hours
- This approach is less likely in more advanced games where all these elements are simulated
A Job In Game Audio

Electronic Arts Canada, Burnaby, BC
How Do I Get Into Games?

- Research game audio and student sites
- Participate in forums such as SoundDesign on Yahoo¹
- Play games and critique the audio
- Learn tools like Wwise and Fmod
- Play with languages like Pure Data or Max/MSP
- Start making games: www.moddb.com
Game Career Guide
Indie Games -> Make your Own

- 2011 – *Retro City Rampage* – (Vblank Ent.)

![Map of Retro City Rampage](RetroCityRampage.com)
Questions?

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