Case Study, Medievil 2.

Introduction

Medievil 2 is the follow up game to the multi award-winning Medievil 1. For Sony it was the opportunity to develop a successful franchise and for the development team at Sony Cambridge it was an opportunity to implement everything they didn't have the time to put into the first one - a win/win scenario!

The Impact of Medievil 1

We learned much from our experience of writing the score for Medievil 1, but now it was time to move forward both technically and artistically, whilst maintaining a high level of consistency between Medievil 2 and its predecessor.

Sound Effects

Medievil 1 saw the development of a custom sound API [show link to glossary of terms.] As sound effects creators, we know the kind of functionality that is needed to manipulate sound successfully so got involved with the production of game engine tools early on.

Music

Medievil 1 music was our first attempt at composing a fully orchestral score using synthesised instrumentation. We had a very general system setup (hardware, software and samples) and it wasn't geared for orchestral composition. Despite this we were happy with the way the score turned out. It was a case of doing the best we could with the tools made available to us.

The Birth of Medievil 2

During an all staff meeting (around the end of '98) the design of Medievil 2 was revealed to the studio for the first time. It was at this point that we began communicating with the team about sound. Where sound is concerned, design documents can be vague at the best of times. The brief said "More of the same please", since the audio on its predecessor had been so successful. This, we decided, wasn't enough. As with the design of the game, we wanted to do *more*.

Preliminary Work - Planning

Music

The score from Med 1 was extremely successful, but the orchestral sound was created using synthesisers & samples for cost reasons, but also restrictive musically. We wanted to achieve a more realistic sound, although a live orchestra was still out of the question for financial reasons. The only way to do this was through a more extensive use of samples and a more authentic film approach to composition. This required some outlay on new hardware and samples as well as training in the art of orchestration and arrangement.

A NEW SETUP

Medievil I had been achieved using a combination of:

- 1 x Roland JV1080 synthesiser
- 1 x Akai S3200 sampler using the Peter Siedlaczek 'Orchestra', 'Advanced Orchestra' & 'Classical Choir' sample CD-Roms.
- 1 x 'Symphonic Adventures' audio CD containing riffs played by real orchestra's - basically stuff you could never program convincingly.
- Emagic Logic Audio 3 & Digidesign Protools III PCI for the Apple Mac.

We bolstered this setup with the following upgrades:

- Miroslav Vitous 'Orchestra' sample CD's (5 in total covering the entire orchestra) - £3500.
- Spectrasonics 'Symphony of Voices' sample CD's (5 covering most of the classical vocal requirements necessary) - £600
- Best Service 'Scoring Tools' sample CD, another palette of orchestral riffs which we would treat as a "bed" of sound to build on top of - £200.
- Kurzweil K2500R synthesiser / sampler (128 MB ram as opposed to the Akai's 32) WITH the orchestral card - not bought for the project but still new and not heard on Medievil 1.

Once we had all of the new gear, it was necessary to create a virtual orchestra in the studio. We chose to use all of the available outputs on each device in order to help us when mixing the final compositions, as well as giving us the freedom to pan the sampled instruments as they would appear on a stage in a standard orchestra in order to help separation [show link to glossary of terms.]

A NEW COMPOSITIONAL APPROACH

Through trial and error and our own musical intuition, we'd already learned a substantial amount about orchestration, but we wanted to take it to the next level. Fortunately Michael Price (a friend of Bob's) was the musical assistant of Hollywood Film Composer Michael Kamen and offered his services for free. He came to Cambridge to provide an insight into writing for a real orchestra, teaching us invaluable lessons on structure, arrangement, voicings [show link to glossary of terms] and instrumentation [show link to glossary of terms.] In essence he taught us to treat the samples as we would the *real* thing. Instead of playing strings in a chordal pattern on a keyboard (like you would play a piano), we began to write the parts out individually for each of the separate sections of the orchestra - Violins I & II, Viola's, Cello's & Double Basses.

Even with this new approach, samples can only sound so realistic. A single sample can only provide a "snap shot" of what is sonically achievable on an instrument. Click here for a couple of examples.

> Example 1: For every new playing technique the violin has to offer, a new set of samples would be required across the whole range of notes the violin can play.

Example 2: A brass instrument, when blown harder, changes the whole tone of the sounding note (giving the impression of becoming more "raspy".

This is where the use of a virtual orchestra is fundamentally flawed. The ear, even a non-musical ear, is very sharp at detecting subtle imperfections in sound and is less easily tricked into acceptance of this than the eye. To go some distance towards making up for this problem, we implemented some simple MIDI controls onto our main instruments. This allowed us to manipulate them in real-time in order to approximate some of the subtleties of live playing discussed above.

Full production took around 13 months in total to complete, and it's succinctness was mainly due to a solid design early on that changed relatively little once production began.

MORE INTERACTION?

We were keen to implement a more interactive score that referenced the onscreen action much more than its predecessor. Medievil 1 by comparison had "wallpaper" music (music that plays constantly in the background.) Improvements to the API [show link to glossary of terms] meant that we were not only capable of streaming from the CD during game-play, but we now had the ability to change tracks on the fly. The standard format for compressed streamed music on Playstation 1 was XA [show link to glossary of terms.] The XA format allowed for switching between 8 musical pieces over a very short time frame. We experimented with writing a single 'generic' level tune to encompass the feel of the level, and creating 7 other 'variations' of this track, adding new elements to heighten tension and extracting existing elements for more exploratory areas of the game.

In practise this is hard to achieve successfully. The first problem to overcome is for the game program to know where a musically suitable moment appears for a switch to occur. This can only happen effectively if it understands musical structure through tracking the beat. Without beat tracking, audio glitches [show link to glossary of terms] began to appear in the music. Another problem with this system is that it doesn't work effectively on orchestral music because of the nature of the sound. Orchestras usually perform in large halls and most, if not all recordings of orchestras contain large reverbs [show link to glossary of terms]. It's relatively easy to write long flowing passages that merge beautifully with each section, but the tail end of the reverb would trail off into the next section and would often not work when switching to a sparser version of the tune. This system would work far more successfully within different musical genres - dance music for example where there is generally less reverb on the recording.

SPLIT LEVEL LOADING

A lot of the game code would have required alteration in order to allow for this and the way the game levels were divided up into zones also didn't lend itself particularly well. We were able to utilise this technique in the final level, subdividing the level into 4 musical tracks ranging from very basic instrumentation (solo voice & organ) to upbeat, fully orchestrated action cues.

Sound Effects

We decided that we wanted to overhaul the sound effects process in line with the changes that were being made to our musical creation process. The two main areas we concentrated on were upgrading our equipment and libraries, and educating ourselves on more sophisticated techniques of sound design. Most of our approach until this point had been based on intuition and common sense.

PRELIMINARY WORK

Extensive work was undertaken by the audio programmer on Medievil 2 to give us more functionality in the sound API [show link to glossary of terms] (taken from Medievil 1.) This gave us increased creative control over sound effects playback in-game.

A NEW SOUND DESIGN APPROACH

Having received some tuition on the music side, we decided that the same approach was necessary for sound design. We spent two days with Chris Sweetman (an experienced film sound designer), learning the art of field recording and we began building our own database of sounds effects. We also complemented this tuition with a greater interest in material available on the web. We downloaded articles created by the Sound Designers at Skywalker sound.

A couple of little gems we picked up along the way.

- Sounds of wings flapping - shaking a leather glove
- Sounds of bubbling lava - a car radiator that's just been running

A NEW SOUND DESIGN SETUP

More equipment was required to improve on our existing system:

- Sony's top-of-the-range portable DAT recorder
- a Sony shotgun microphones
- an MS stereo Sony microphone
- Software: SFX Machine in BIAS Peak & Hyperprism

In addition, we bought a new selection of commercially available sound effects libraries to complement what we already had. Prior to that, our collection had been used on every project for the previous 4 years!

In summary, our new approach included location recording, sounds recorded in the studio, a new and extended CD library, a broader range of skills through experience gained from education, complemented by better implementation through the updates made to the API giving us a whole new outlook on the sound design process.

FMV & Cut-Scenes

There was much less FMV [show link to glossary of terms] in Medievil 2 than its predecessor. This meant that we could focus more of our attention on the scenes that we did have. Our approach remained the same from a technical perspective, but we utilised our new skills in both sound design and composition in order to preserve consistency across the whole project.

MUSIC

Writing the music for FMV is one of the most enjoyable parts due mainly to the fact that there are no hardware constraints of the platform to limit the creative process. Due to the linear nature of FMV, you know exactly when an event is going to happen and the music can be structured to emphasise key moments. This is not possible with in-game music as it is usually not possible to tell when a player will reach a key moment.

Music for FMV in more detail (link to following section (defined by **[ ]**) through this hyperlink.)

[Cut-Scene One: The Zarok Showdown

The opening cut-scene was a retrospective look back to the original title and the defeat of Zarok (the main bad guy from Med1) at the hands of Dan (our hero), culminating in his return to the tomb and eternal rest.

This was a full on action sequence with music to suit the mood. The music was original in the main although we did revisit the original theme associated with the sad moment when Dan returns to his tomb.

Cut-Scene Two: Palethorn's Spell

This cut-scene introduced the game player to the setting of Medievil 2 (Victorian England) and set the scene for the progression of the story. Lord Palethorn has found some of the pages of Zarok's spell book and has used them to cast a spell over the city for the obvious net gain of World Domination.

The music needed to be quite different from that heard previously in the last cut-scene. The mood at the beginning of the cut scene is very upbeat so we chose to encapsulate that mood musically by writing a waltz. This gives the feel that everything / everyone is gliding along on a wave of blissful ignorance and helped to set up the dramatic change in mood later in the scene.

SOUND EFFECTS

The sound effects for the FMV in Medievil 2 were a careful blend of comedy and drama. It was important that the comedy sound effects did not dilute the impact on the player during the game.

Sound Effects for FMV in more detail (link to following section (defined by **[ ]**) through this hyperlink.)

[Cut-Scene One: The Zarok Showdown

The opening cut-scene was a retrospective look back to the original title and the defeat of Zarok at the hands of Dan, culminating in his return to the tomb and eternal rest.

From a sound effect perspective, it was important that the scene was consistent with the original so we went to great lengths to provide the same sounds for each element in order to stay faithful to the original and preserve the continuity.

Cut-Scene Two: Palethorn's Spell

This cut-scene introduced the game player to the setting of Medievil 2 (Victorian England) and set the scene for the progression of the story. Lord Palethorn has found some of the pages of Zarok's spell book and has used them to cast a spell over the city for the obvious net gain of World Domination.

The trickiest sounds in this scene to create were the dinosaur sounds. They needed to have plenty of impact in order shock the player into realising that they were alive! It also sets the precedent for the first level so it was important that these sounds were right.

Problems Encountered

Traditionally with game music, not enough thought is put into planning out how the musical elements of a game should be tackled. You can't build a house before you've planned out the design and layout! Likewise, an intelligent score can be more effectively put together if the main themes are written first and their usage decided early on.

We have learned to develop an "audio map." This would contain general information about the game (number of levels and environments) and where and how the music would fit into it. It should have information about the main characters and which ones should have themes written for them. It should even talk about how the instrumentation can be changed to give a theme a different spin.

In film, the idea is taken one stage further with a "cue sheet." This is a document produced detailing exactly where each of the film's cues will be placed, where they will come in and drop out, instrumentation etc. As games music becomes more event driven, a future extension of the "audio map" might be to produce more detailed information about a game's music in much the same way.