



Above: Studio technical director of Blitz Game Studios Richard Hackett. Right: Havok Destruction at work.

rise, and gaining momentum. Still, it's not all bad news, if the capacity of investment of effort is in place.

"There's a growing opportunity for tools and middleware providers to get ahead of the curve and start addressing the needs

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Carl Jones, Crytek



now, or at least start working on them," suggests the CEO.

"Efficiently multi-threading a core middleware solution that wasn't originally designed for it usually requires a significant amount of architecture and code changes, often a complete rewrite. To complicate things further, the solution should be designed to scale from a single-threaded single-core scenario to a heavily multi-threaded multi-core environment.

**BACK TO THE FUTURE**

With the industry currently defined by its restlessness, looking a little further forward at the prospects for middleware is slightly daunting, but the future is certainly

enthralling, and if many are to be believed, it's also set to boast impressive depth.

"Stereoscopic 3D is a feature of the future for all graphics – whether offline, real-time, in games, movies or in simulation and visualisation," insists Crytek's director of global business development for CryEngine Carl Jones. "Whilst it is not required for the effective development of all such projects, it does add, well, literally an extra dimension to any virtual environment, so having a solution that is efficient and allows instant creation and control will be vital for certain projects."

Along with the need to take a gamble on Intel's multi-core plan, the potential rise of 3D means middleware providers must be prepared to spend some hard earned cash in place of their developer industry-mates. In

the wake of the recent economic crisis, which saw the core market risk fewer new franchises and instead commit to bigger budgets on formulaic entertainment, the financial challenge is perhaps the biggest middleware providers will face in the coming years.

"The impact on the video game development landscape is irrevocable and is resetting how games will be made and go to market," warns Emergent's CEO of game technologies Scott Johnson. "The video game industry is only now beginning to recover from a rash of studio closures and developer layoffs, and publishers are striving to find new models for creating high-quality gaming experiences with less risk, smaller staffing counts, and lower overheads."

From Johnson's perspective, a tough start now does mean an increase in the standards of future tools and tech: "Shorter game development schedules and smaller budgets demand that middleware solutions drop into game projects easily and live alongside other middleware productively in a content ecosystem that doesn't care whether functionality comes from middleware or internal technology. Content creators won't have to worry about which vendor is responsible for Tool X or Feature Y, because it will work, and it will work seamlessly with the rest of the game's toolset."

Equally optimistic about the pressure on the middleware sector is Stephanie O'Malley Demming of XLOC, which offers localisation integration tools. The company president argues a convincing case that sees developers woes meaning more work for tool and tech providers: "As game development becomes more intricate, developers will continually look for solutions that take care of the standard areas of production, so that they can focus on the more complicated, creative, core aspects. Allocating internal resources to non-core functions of game development is expensive, and as time goes on, developers and publishers will increasingly feel that it's worth investing in middleware solutions that already have technology created and evolving, and that are built to be incorporated into engines or processes."

**INTEGRATED CIRCUITS**

Speaking to the experts of the sector, it appears middleware suffered a similar fate to motion capture in its early history. Initially

**CASE STUDY: AUDIO**

**THE FIELD OF AUDIO** middleware is one of the more established, but that doesn't mean it has become staid. In fact, the area is charged with constant innovation, as methods like dynamic audio become the norm.

Hamburg's Periscope Studio ([www.periscopestudio.de](http://www.periscopestudio.de)), aptly set up in a converted submarine engine factory, is one of the most impressive of the audio specialists. Having created a thesis from its work converting its property to house a pair of recording facilities, the team is now hard at work introducing its psai technology to the world.

"Psai is a solution for creating and controlling emotions for games with

music," explains Finn Seliger, Periscope Studio's, art director and head of research and development. "A simple tool helps the composer to create music for the purpose of interactive playback and a middleware provides the developer with an easy-to-use interface in order to connect the music to the game play situation."

"Our middleware's aim is to supply the composer and developer with a tool that supports the synergetic move from movie and games to converge into one form thus enabling them to deliver an



interactive gaming experience with a real interactive soundtrack to deliver the tensions and emotions you get immersed in inside a great movie," adds psai product manager Thorsten-Tobias Heinze.

Another innovative entrée on the audio middleware scene is Firelight Technologies ([www.fmod.org](http://www.fmod.org)), which makes a pair of distinct solutions; namely FMOD EX and FMOD designer 2010.

"We support all formats from PS3 and Xbox 360 to Wii, from PC, Mac and Linux to iPhone and iPad," confirms the company's sales and business manager Martin Wilkes. "And yes, we are working with Unity for the Android platform."

While FMOD Ex promises to provide for all audio requirements for video game development, FMOD Ex is conceived to extend the creative boundaries of audio implementation for games and other media. It is also designed to put minimal demand on resources and be fully scalable.

