

MONITOR

Deus ex machinima?

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Computer graphics: Hollywood movies increasingly resemble computer games. Now a growing band of enthusiasts is using games to make films

PAUL MARINO vividly recalls the first time he watched an animated film made from a video game. It was 1996, and Mr Marino, an Emmy award-winning computer animator and self-described video-game addict, was playing "Quake"—a popular shoot-'em-up—on the internet with a handful of friends. They heard that a rival group of Quake players, known as the Rangers, had posted a film online. Nasty, brutish and short, the 90-second clip, "Diary of a Camper", was a watershed. It made ingenious use of Quake's "demo-record" feature, which enabled users to capture games and then e-mail them to their friends. (That way, gamers could share their fiercest battles, or show how they had successfully completed a level.) The Rangers took things a step further by choreographing the action: they had plotted out a game, recorded it, and keyed in dialogue that appeared as running text. Pretty soon, Mr Marino and others began posting their own "Quake movies", and a new medium was born.

**Is it a game or a film?**

Eight years on, this new medium—known as "machinima" ("machine" crossed with "cinema")—could be on the verge of revolutionising animation. Around the world, growing legions of would-be digital Disneys are using the powerful graphical capabilities of popular video games such as "Quake", "Half-Life" and "Unreal Tournament" to create films at a fraction of the cost of "Shrek" or "Finding Nemo". There is an annual machinima film festival in New York, and the genre has seen its first full-length feature, "Anachronox". Spike TV, an American cable channel, hired machinima artists to create shorts for its 2003 video game awards, and Steven Spielberg used the technique to storyboard parts of his film "A.I." At machinima.com, hobbyists have posted short animated films with dialogue, music and special effects.

All of this is possible because of the compact way in which multi-player games encode information about different players' movements and actions. Without an efficient means of transmitting this information to other players across the internet, multi-player games would suffer from jerky motion and time lags. Machinima exploits the same notation to describe and manipulate the movements of characters and camera viewpoints. The same games also allow virtual environments to be created quickly and easily, which allows for elaborate sets and props.

Games publishers have now begun to incorporate machinima into their products. Epic Games has built a movie-making tool into its spectacularly successful "Unreal Tournament" series, for example, and many games include level-design software that both gamers and machinima artists can exploit. Later this year, Valve Software plans to release "Half-Life 2", a long-awaited game that will include tools specifically geared toward machinima: in-game characters will have realistic facial expressions with 40 different controllable muscles, and eyes that glint. Conversely, machinima creators have built movie-making tools on the foundations of games. Fountainhead Entertainment licensed "Quake III" to create a point-and-click software package called Machimation, which it used to produce "In the Waiting Line" by the British band Zero 7. It became the first machinima music video to be widely shown on MTV last year.

Those in the video-games industry are fond of quoting the statistic that sales of games now exceed Hollywood's box-office receipts. Could film-production technology also be overshadowed by games software? "Machinima can be considered Hollywood meets Moore's law," says Mr Marino, the author of a new book on machinima* and executive director of the Academy of Machinima Arts & Sciences, which holds an annual film festival in New York. He points out that a 30-strong animation team at Pixar took four years and \$94m to create "Finding Nemo". Animation studios' desire to cut costs and production time, coupled with advances in video-game graphics technology offering the potential for photo-realistic "cinematic computing" could, he believes, eventually allow machinima to take over the animated-film business. It is affordable, allows for a great deal of creative freedom and, when compared with conventional forms of manual or computer-based animation, is both faster and, says Mr Marino, more fun.



A glimpse of the future of animation?

This is not to say that machinima is ready for prime time just yet. The production quality is good, and will only get better with the next generation of video games, such as "Doom 3". But it still has a long way to go to match Pixar's "Monsters, Inc." some frames of which (there are 24 per second) took 90 hours to generate using over 400 computers. And because machinima movie-makers have been for the most part video-game nerds, their films have historically lacked two crucial elements: story and character. "There are no Ingmar Bergmans yet," says Graham Leggat of the Film Society at Lincoln Centre. "Last year's machinima festival winner, 'Red vs Blue', was based on sketch comedy. Most other efforts are of the standard video-game shoot-'em-up variety." It is, in short, a situation akin to the earliest days of cinema.

The tools will also have to improve. At the moment, machinima-makers must use a patchwork of utilities developed by fellow enthusiasts. "Quake", for example, has its own programming language that can be used to build movie-making tools. This enabled Uwe Girlich, a German programmer, to create a program called LMPC (Little Movie Processing Centre), which translated a particular sequence of in-game actions into text. David Wright, an American programmer, then released a program called "KeyGrip" to convert this text back into visual scenes, and to allow simple editing. Other programs allowed machinima-makers to add dialogue and special effects. As the games have advanced over the years, so have their associated tools. But the machinima-making process is still nowhere near as slick as desktop video-editing, for example, which together with the rise of digital video cameras has placed liveaction film-making tools in the hands of everyday computer users.

Another problem is that if a machinima-maker were to score a hit, there might be legal trouble. So far, makers of video games have looked the other way as their games were used in ways they never intended. But if someone were to make money from a film that relied on one of its games, a game-maker might be tempted to get the lawyers involved. For now, this does not concern Mr Marino, who believes that machinima is here to stay. "Five years ago, the games were not nearly as vivid as they are today," he says. "The same goes with Machinima. We may not be on the level of 'Shrek', but that will change. It's inevitable."

* "3D Game-Based Filmmaking: The Art of Machinima", Paraglyph Press, \$40.