



Making the west a whole lot wilder.

AMD helps Techland optimize next-generation gaming.

Wroclaw, Poland-based Techland has emerged as a major force in the gaming industry. Over the last decade, their engineering and development teams have racked up an impressive list of technical innovations and best-selling game titles for PCs and consoles.

In 2006, they released *Call of Juarez* – a first-person shooter based on the cinema and folklore of the American West. With a look and feel that pays homage to the true grit of Western-genre film directors like Sergio Leone and Sam Peckinpah, *Call of Juarez* became an instant hit with gamers worldwide.

Call of Juarez also holds the notable distinction of being one of the first titles on the market to fully support Microsoft's groundbreaking DirectX® 10 graphics standard. And AMD helped Techland make it happen – putting more show into every showdown.

Earning a Reputation for Innovation

Since 1991, Techland has focused on providing gamers with innovative, high-quality experiences across multiple genres. Their mission is one of substance – to give players original gaming experiences that go far beyond the promises of product packaging and marketing hype.

“We strive to introduce new ideas in a way that goes beyond the back of the game box. New and unique concepts in our titles must contribute to the gameplay and the overall quality of the time players spend with the game,” says Pawel Kopinski, Techland's Lead PR Product Manager.

AMD
The future is fusion

“Our partnership with AMD gives us access to cutting-edge graphics hardware and software tools. The excellent performance of these latest graphics cards makes our tools more efficient, thus improving the entire development process.”

— Pawel Kopinski, Lead PR Product Manager, Techland

A major breakthrough came in 2003 with the creation of their powerful, proprietary Chrome Engine technology – a development tool and game engine designed to offer major horsepower to gaming from the first-person perspective.

Among Chrome Engine’s major breakthroughs are a specialized multi-system design and cutting-edge features for advanced visualization, scripting, and physics systems, plus integrated networking and artificial intelligence. Chrome Engine immediately provided Techland’s designers with a complete game development framework for creating new and exciting titles for excitement-hungry players around the world.

A New Gun in Town: *Call of Juarez*

With a powerful new development weapon in hand, groundbreaking games from Techland weren’t far behind.

The first Chrome Engine release was the popular sci-fi shooter *Chrome*, followed by the car-racing genre title *Xpand Rally*. But a real test of Chrome Engine’s mettle would take Techland’s game developers far from Poland – to a place and time separated by 6,000 miles and 150 years.

“In 2005 we realized that there was a gap in the market. There was no game that could deliver the unique atmosphere and dynamism of Wild West movies and comic books,” says Kopinski.

“Our artists used thousands of reference pictures, historic images, and accounts to recreate a detailed, living, and fascinating environment of the Gold Rush era. Everything – from weapons, to clothes, to door signs – was rendered to the tiniest detail.” Players would even be able to interact with these fine details – using found objects as weapons or tools to solve problems.

But intricacy and authenticity weren’t enough for Techland. Their development team also wanted to create a novel gaming experience – an advanced narrative design that could expand a player’s interactivity and add meaningful layers to the story being told.

To accomplish this, Techland split *Call of Juarez* down the middle. A player would alternate scenes between two opposing characters with conflicting objectives: young and stealthy Billy Candle, fleeing from the scene of a crime he didn’t commit; and vengeful ex-gunslinger Reverend Ray McCall, following close on Billy’s trail.

This highly cinematic, dual first-person approach added levels of complication not only to the technical elements of the game, but also to how a player internalizes character motivation and the overarching story being told.

“Each character offers a different gameplay style and each has an engaging story to tell. The end result is an action-packed FPS in a unique setting and with an immersive storyline,” says Kopinski.





Call of Juarez was in position to take the market by storm. Up to this point, Techland had been developing projects according to Microsoft's well-established DirectX® 9 graphics standards – the common language that hardware manufacturers and game developers use to create compatible products for Windows-based computing.

But the upcoming release of Windows Vista® included a major update to these graphics standards that would offer gamers improved visual quality, performance, and precision – DirectX 10.

To get *Call of Juarez* up to the frontier of graphics ingenuity and fulfill its potential as the new benchmark in first-person gaming, Techland would need some help from the hardware side of the gaming industry.

A Higher Standard of Collaboration

"DirectX 10 was a bit of an unknown," says Eric Lundgren of AMD Developer Relations. "The software developers knew about it and the hardware developers knew about it. But there's this chicken and egg thing because you need the hardware first, so then the software developers can start working on it."

In order for Techland to update *Call of Juarez* to DirectX 10, they needed to work with advanced graphics units (GPUs) and drivers that had already been updated to the new DirectX standard. Plus, they'd need plenty of processing power to implement more refined game logic, more natural AI behavior, and more advanced game action.

AMD's combination of cutting-edge ATI graphics solutions and high-performance AMD multi-core processors seemed a perfect match. AMD engineers met with Techland developers, and soon a formal agreement was worked out to support *Call of Juarez*.

AMD Developer Relations Engineer Nick Thibieroz had a build of the game and worked on-site to help with the actual coding at Techland's facilities in Poland.

"Most often what they asked us for were optimizations," says AMD's Thibieroz. "They may have had an idea of how to do something, but we knew the particulars about our hardware. These performance optimizations helped the game run much faster because of the work we could do with their code. We also helped with visual improvements."

Techland's Pawel Kopinski adds, "We value the support of AMD engineers and driver teams, which creates a constructive working climate between our companies. There is an exchange of ideas and discussions on the latest technological solutions in the pipeline."

Optimizing *Call of Juarez* for DirectX 10 with the help of AMD had an immediate impact. "In DirectX 10, we were able to increase the amount of visible objects like vegetation or particles by using geometry shaders, which make rendered scenes more detailed. We could also implement more accurate shadows and next generation materials – relief mapping, detailed bump mapping, soft-edged foliage," says Kopinski.

Serious Hardware for The Ultimate Visual Experience™

In addition to engineering advice to help with the DirectX® 10 software optimizations on *Call of Juarez*, AMD also provided Techland with hardware support, including ATI Radeon™ HD graphics cards and multi-core AMD Athlon™ processors. Techland has also received ongoing hardware support from AMD, including recent releases of ATI Radeon™ HD graphics cards and multi-core AMD Phenom™ processors.

"The newest graphics hardware allows our programmers to implement more sophisticated visual effects (advanced lighting calculations like screen-space ambient occlusion, high dynamic range or soft shadowing), allows the level designers to place more objects on the scene and make the world richer, and lets the artists make more accurate and detailed 3D models.

"We also use the latest AMD Phenom™ processors for fast and efficient game coding and resources deployment," says Kopinski.

The end result of the Techland/AMD collaboration on *Call of Juarez*? Superior game performance and an amazingly high quality of rendered images, which in turn creates a complex and detailed world with photorealistic scenes.

The Legend Grows for AMD and Techland

The innovative technical features and dual character gameplay of *Call of Juarez* only benefited from the added attention of being one of the first games on the market supporting DirectX 10 graphics.

"I'm told they shipped close to a million units extra that they hadn't planned on shipping. I believe this was because of the game's support for DirectX 10," says AMD's Eric Lundgren.

The teams back in Poland, however, weren't about to rest on their laurels. They were already at work on several new titles supporting the DirectX 10 standard, including the George Romero-style, first-person zombie shooter titled *Dead Island*.

"Games are transitioning from popular hobby to a pop-culture outlet on par with movies and TV. The videogame industry finally has the opportunity to really grow and evolve, because the market is maturing. We expect to see the genres once dubbed extinct making a comeback because there's finally a market for them," says Kopinski.

He adds, "We will continue to work with our invaluable technological partners like AMD to deliver the best electronic entertainment across all platforms."

For more information about Techland visit:
<http://development.techland.pl>

About AMD

Advanced Micro Devices (NYSE: AMD) is a leading innovator in semiconductor design and manufacturing dedicated to collaborating with customers and partners in ways that ignite the next generation of technology solutions at work, at home and at play.

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