SUCCESS STORIES:
D3T PORTS 2K MAFIA II: DEFINITIVE EDITION TO MODERN GAMING CONSOLES

KEYWORDS GAME DEVELOPMENT STUDIO REMASTERS ACTION-ADVENTURE TITLE WITH IMPROVED TEXTURES, ANIMATION AND REWORKED POST-PROCESSING

About d3t

d3t Ltd is an award-winning, co-development studio delivering work-for-hire game development services to AAA clients. Based in the UK, the team stands at 100+ diversely skilled professionals.

The Challenge

d3t was engaged by 2K to remaster the action-adventure game ‘Mafia II’, first released in 2010, for modern gaming platforms. 2K required that the d3t team evolved the game’s core engine to support PlayStation 4, Xbox One and Google Stadia and to make further enhancements to better utilise modern PC hardware. Additionally, d3t was tasked with overhauling the game’s graphics and visuals.

The Solution

In a game driven primarily by its characters, retaining likeness was a top priority. Most characters benefited from increased geometry which improved facial feature definition. Skin micro detailing via higher resolution textures was also introduced to improve the overall visual quality.

The topology was reworked to allow more nuanced animation and avoid unsightly pinching. Increasing the fidelity of appearance meant animation needed to be redone or adjusted, particularly when the skeletons were upgraded to use 90 bones as opposed to the original 28.

OVERVIEW

Client Profile
2K Games, the US-based AAA publisher.

Industry
Video Games.

Geographic Location
Global.

Business Challenge
2K required a solution to remaster Mafia II, first released in 2010, for modern platforms and evolve the game’s core engine to support PlayStation 4, Xbox One and Google Stadia.

Solution
d3t implemented improved textures, remastered facial animation and reworked post-processing – some with the use of newly developed technology.

Results
d3t applied modern development techniques to bring Mafia II to modern consoles and breathe a new lease of life into the title with improved textures, animation and reworked post-processing.
d3t increased the capacity of the characters to move their brows, mouth and nasal creases, as well as improving the skin shader, so as to expand their capacity to convey believable emotion.

The lighting in the original game was particularly good for its time and did not need a widespread overhaul. That meant d3t was able to devote time to the post-effects pipeline to give greater depth to the scene and help lift the image. This had to work in conjunction with several different areas, including anti-aliasing, ambient occlusion, increased resolution of textures, and HDR.

For ambient occlusion, d3t took the original AO and re-rendered this at higher resolution. The team implemented HBAO to handle screen-space AO which helps pinpoint finer shadowed detail. d3t added support for multi-sample anti-aliasing (MSAA) to remove jaggies from the edges of geometry. This was coupled with two post-processing, anti-aliasing solutions – FXAA and SMAA. The end result is a dramatically smoother final image, without any of the associated blurring that was evident in the legacy game.

For HDR support, a filmic tonemap was implemented, designed to remap the colour output of the game to the HDR colourspace. Taking inspiration from PBR material pipelines, the material definition within the game was improved via refactored shaders and reauthoring of textures.

**New Technology**

d3t developed new technology to generate realistic puddle formations on the roads around Empire Bay. Combined with a new shader for standing water, this resulted in a natural effect.

The original game had a number of adjustments made for console platforms, including reduced draw distance, reduced object population, lower quality materials and post processing and lack of support for APEX particles. This remaster aims to bridge the gap that used to exist between console and PC and includes APEX particles on all platforms, along with unified materials and post-processing.

**The Result**

At launch in 2010, Mafia II was already a stunning looking game. And, in 2019, d3t applied modern techniques to give the game a new lease of life. Several global enhancements were made across all platforms, including improved textures, increased shadow resolution, remastered facial animation and reworked post-processing.

**How Keywords Game Development porting services can work for you**

Keywords Game Development services can port your game to multiple platforms, allowing your teams to focus on what matters most – creating memorable, immersive experiences for your players.

Our experienced UI/UX teams find creative solutions to streamline and modernise the player experience without compromising the original gameplay.

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