Biography of John Carmack

John D. Carmack is an American born computer programmer, engineer and most importantly video game developer. He is the co-founder of id Software and lead programmer of the id video games Commander Keen, Rage, Wolfenstein 3D, Doom and Quake. Carmack is best known for his innovations in 3D graphics, such as his Carmack's Reverse algorithm for shadow volumes. Carmack also took the position of CTO at Oculus VR in 2013. (Encyclopedia Britannica, 2018)

Carmack was first introduced to video games through the extremely popular shoot 'em up title space invaders in his local arcade during a summer vacation as a child. When Carmack was 14 he broke into his school to help his friends steal Apple II computers. To enter the building Carmack created a substance from thermite and Vaseline that melted through the windows. However, a larger friend of Carmack's was unable to fit and ended up opening the window triggering a silent alarm. Carmack was arrested and sent for psychiatric evaluation *(The report mentions 'no empathy for other human beings' and describes Carmack as 'a brain on legs'. A harsh evaluation to be sure).* Carmack was then sentenced to a year in a juvenile home. As you can see from an early age Carmack was standing out from his piers even if it wasn't always positive. (En.wikipedia.org, 2018)

Carmack's work pioneered work in 3-D game design and led to the popularization of the "first person shooter" genre with such games as Quake and Doom. His company id software developed shareware and internet distribution channels, revolutionizing how computer games were sold

Carmack started his career in Softdisk, a computer company in Shreveport, Louisiana, hired Carmack to work on Softdisk G-S introducing him John Romero and other key member to his future endeavours. Later John and his team would be placed by Softdisk in charge of a new, but short-lived, bi-monthly game subscription product called Gamer's Edge for the IBM PC (DOS) Platform. In 1990 while still at Softdisk, Carmack, Romero and others created the first of the commander Keen games, a series that was published by Apogee Software, under the shareware distribution model, from 1991 onwards. Afterwards, Carmack left Softdisk to co-found id software. (Bloomberg.com, 2018)

In May 1992 id software released Wolfenstein 3-D a huge hit that was the beginning of a long-lasting trend of successful first-person shooters. The next big release from id was Doom in 1993 a frenetically immersive and violent improvement upon Wolfenstein. The release of Doom marked a turning point in t computer gaming history for several reasons. Although Doom lacked in narrative it was one of the most popular games of all time. With realistic floor and ceiling graphics (relative to the time), Doom added greatly to the sense of embodied movement that embodied the genre. In 1996, id released Quake which further advanced the genre. Along with the ever-improving graphic realism, Quake allowed multiplayer gaming over the internet. This led to the creation of one of the first e-sport scenes for FPS games. Quake has been a huge inspiration for future FPS games that strive to

mimic or capture the fast pace and skill-based shooting that made Quake such a success, games such as Team Fortress 2 and Overwatch are both modern examples of games that strive to mimic the gun play in Quake. (Kumar, 2018)

Carmack is credited with the pioneering and popularizing the many techniques in computer graphics today, including adaptive tile refresh *(To compensate for poor graphic performance, its principle innovation is a novel use of several EGA hardware features to perform the scrolling in hardware.)* for Commander Keen, raycasting *(The use of ray-surface intersection tests to solve a variety of problems in computer graphics and computational geometry)* for Hovertank 3-D, Catacomb 3-D and Wolfenstein 3-D, binary space partitioning *(A method for recursively subdividing a space into convex sets by hyperplanes. This subdivision gives rise to a representation of objects within the space by means of a tree data structure known as a BSP tree.)* which Doom became the first game to use, surface caching *(Was a technique used to reduce overdraw by not drawing pixels over each other but instead removing pixels the screen was not displaying)* which he invented for Quake, Carmack's Reverse *(formally known as z-fail stencil shadows, used to add shadows to a rendered scene)* which he devised for Doom 3; and MegaTexture technology *(introducing a means to create expansive outdoor scenes and was seen as the best game engine to handle outdoor areas),* first used in Enemy Territory: Quake Wars. Carmack's engines have been licensed to other big titles such as Medal of Honour, Half-life and Call of Duty. (En.wikipedia.org, 2018)

Aside from their pioneering graphic realism and online interactivity Carmack's games have also been marketed and distributed in ground-breaking ways. Both Wolfenstein and Doom were released in free downloadable shareware versions that contained only the first level. This acted as a demo for the game that would both work as a form of advertisement through word of mouth and a means to get people hooked. This disruption model generated a huge amount of buzz and is credited with boosting sales. When the first episode of Doom was released on the University of Wisconsin servers, the rush of downloads crashed the entire system. (En.wikipedia.org, 2018)

Carmack's career has been one of a pioneer that moved the industry forward in many aspects. Quake and Doom were huge inspirations to the game developers of many of my own favourite games. His impact on the gaming industry should not be understated, Carmack was a visionary. He saw the potential of what games could be, what they should be. Even when he was limited by hardware he did his best to work around it, developing multiple new methods for game engines to be more efficient and effective so that he could create his vision. Carmack created some of my favourite games ever when I was younger and inspired the creators of my current favourites and it for those reasons and more that I decided to do this essay on him. He was a major influence on my favourite pass time and hobby.

Bibliography

En.wikipedia.org. (2018). *John Carmack*. [online] Available at: https://en.wikipedia.org/wiki/John_Carmack [Accessed 10 Oct. 2018].

Encyclopedia Britannica. (2018). *John Carmack* | *Biography & Facts*. [online] Available at: https://www.britannica.com/biography/John-Carmack [Accessed 4 Nov. 2018].

Bloomberg.com. (2018). *John Carmack*. [online] Available at: https://www.bloomberg.com/research/stocks/private/person.asp?personId=5965799&privcapId=4469709 [Accessed 13 Oct. 2018].

Kumar, M. (2018). *Success Story of John D. Carmack, Co-founder of id Software*. [online] BrainPrick. Available at: http://brainprick.com/success-story-of-john-d-carmack-co-founder-of-id-software/ [Accessed 17 Oct. 2018].