

Toward a History of Emulation: Five Eras for Videogame Emulators

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INTRODUCTION

Most discussions about emulators revolve around their legality (Fenlon, 2017; Wagar, 2017) or their use in video game history preservation (Cifaldi, 2019; Scott, 2015). Very little has been written about their cultural influence or their historiography. However, an active member of the emulation community at the time, Sam Pettus (2000), wrote an exhaustive history of emulators up until 2000. Expanding upon this history by Pettus, the following paper proposes five distinct periods in their history based upon pivotal events: the Dawn of Emulation (1964-1988), the Golden Age of Emulation (1989-1998), the Silver Age of Emulation (1999-2008), the Bronze Age of Emulation (2008-2024), and the Modern Age of Emulation (2024-Present).

METHOD

To establish a comprehensive (but not exhaustive) accounting of the first releases of emulators, the researcher used online archives as primary sources. To extend Pettus's account, the researcher analyzed popular forums (1Emulation, EmuTalk, Next Gen Emu, Emulator Zone) which had News boards announcing the releases of emulators. In addition, the popular sites Zophar's Domain and Archaic Ruins were also consulted, which served as databases to compile emulators since the 1990s. And lastly, the EMUGen wiki was also used as a secondary source since it launched much later than the other sources in 2013.

Each of these announcements were cross-referenced across each other and the archives of the Wayback Machine when current hyperlinks were broken. And lastly the documentation of the emulators themselves was frequently analyzed to confirm information through the readme, about, and license text files. These digital sources and archives reveal a mosaic of information about releases of emulators. This historical analysis of the records included hundreds of pages of forum posts, accounting for thousands of posts to be cross-referenced and fact checked.

HISTORY

The Dawn of Emulation began with the first instance of emulation in 1964 with the IBM System/360 and System/370 mainframe computers that were backwards compatible with previous generations. But the first PC emulator came in 1980 with Microsoft's Z80 Softcard, which was a commercial hardware product that used specialized software to emulate the Apple II operating system. This period was dominated by similar commercial products or hardware in the form of bridge cards, mod chips, peripherals, etc. that gave users access to other software libraries.

The Golden Age of Emulation began with the "A-max Precedent," in 1989, which was when Apple did not take the developers of the A-max to court. This solidified

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views that emulation was legal because A-max did not contain any of the source code from the Apple II operating system. Unlike the previous age, there was an explosion of emulators developed as hobby projects that weren't very functional and quickly abandoned by their creators.

The Silver Age of Emulation began after a round of legal takedowns from the Interactive Digital Software Association, which shut down nearly all ROM sites and many emulation sites; in addition, the Digital Millennium Copyright Act of 1998 was passed, which also codified the rights of game software owners. The emu-scene went underground and instead of new releases came improvements to existing ones, as emulators jockey to become the best of their platform.

The Bronze Age of Emulation began with the mobile revolution and with the Dolphin emulator becoming free-and-open-source. Frontends for emulators become popular, and emulators become multi-platform as home consoles become powerful enough to emulate many older consoles. Most emulators in this age also follow Dolphin as free-and-open-source projects, instead of the shareware of previous ages.

The Modern Age of Emulation began with the *Nintendo vs Yuzu* case, as well as Apple allowing emulators on their App Store. Currently the fallout from *Nintendo vs. Yuzu* causes many emulators to pre-emptively shut down. The legality of emulators is now called into question as copyright owners pursue new avenues such as Digital Rights Management, which are cracked in the process of emulation.

CONCLUSION

In conclusion, emulation is a medium like others worthy of its own history and analysis, because playing a game through an emulator is vastly different from playing it on original hardware (Farrand, 2012; Lextorias, 2024; Roth, 2019; Stegner, 2021). If there are histories of radio, television, and movies, why not a history of emulation?

BIBLIOGRAPHY

- Cifaldi, F. 2019. It's still emulation: Saving video game history before it's too late. Youtube video. <https://www.youtube.com/watch?v=dp-DRU24J18>
- Farrand, B. 2012. Emulation is the most sincere form of flattery: retro videogames, ROM distribution and copyright. *Revista de Internet Derecho y Política (IDP)*, Issue 14. ISSN 1699-8154
- Fenlon, W. 2017. The ethics of emulation: How creators, the community, and the law view console emulators. *PC Gamer*. <https://www.pcgamer.com/the-ethics-of-emulation-how-creators-the-community-and-the-law-view-console-emulators/>
- Lextorias 2024. *Video game piracy is good, actually*. Video. Youtube, 15 February. https://www.youtube.com/watch?v=_Fu4pE46-zM
- Pettus, S. 2000. Emulation: Right or wrong, the EmuFAQ. *World of Spectrum*. <https://worldofspectrum.net/EmuFAQ2000/>
- Scott, J. 2015. Saving game history forever - or dooming it to oblivion? GDC talk. <https://www.gdcvault.com/play/1022240/Saving-Game-History-Forever-Or>
- Stegner, B. 2021. The pros and cons of playing video games on an emulator. *Make Use Of*. <https://www.makeuseof.com/pros-cons-playing-video-games-emulator/>
- Roth, E. 2019. Retro Game Emulators vs Original Systems: which is better? *What Nerd* <https://whatnerd.com/retro-game-emulators-vs-original-systems/>
- Wagar, C. 2017. The morality of emulation. *Critpoints*. <https://critpoints.net/2017/05/23/the-morality-of-emulation/>