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THE LEGALITY AND MORALITY OF VIDEO GAME EMULATION

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ABSTRACT

The purpose of this paper is to examine the various factors surrounding video game emulation as well as the legal and moral implications of the technology. Firstly, the background and history of the technology is described and explored. Next, the laws surrounding emulation are examined, with it being shown that a great deal of people are not aware of how the law impacts the technology and the consequences of this. It then explores how additional efforts to preserve these games are needed in order to save these games from being lost to time and how emulation enables that. The positive impacts of emulation as well as the various features such as accessibility features enabled by the technology are then explored. Lastly, it is urged that people be better informed on the technology and various ideas on how to deal with the technology in the future are presented.

KEYWORDS

Emulation, ROMs, Emulators, ROM-Hack, Preservation

INTRODUCTION

Although video games have only been around for less than a century, they have already greatly influenced the culture of today. One can hardly go onto the internet without seeing references to games of old, and that may lead to a question of how can one play these older games? The answer lies in emulation, the use of a program called an emulator to run these games on a computer or other device. However, this seemingly simple endeavor of using emulation is more complex than one may anticipate.

With emulation, there are various ethical and legal problems that should be considered before doing it. The primary issue found with emulation is that it is legally in a grey area due to copyright law. Part of the reason for this is due to the entanglement of software piracy groups within the emulation community, which has led to a lot of emulation efforts being associated with piracy despite piracy not being needed to emulate. This association with software piracy has led to many lawsuits and legal cases from companies such as that seen between various sites important to the emulation community and Nintendo. This legal questionability is at odds with the various benefits of emulation. The first of which to be talked about is the preservation of these games being possible due to the software, an important topic as some of these older video games are important pieces of culture and it allows those in the present as well as the future to experience these important cultural pieces. Additional to this are the additional possibilities and creative outlets made possible due to emulation, such as ROM-Hacking, translation efforts, and accessibility features.

The purpose of this research is to bring to light the different factors revolving around emulation and to expose the moral and legal issues one may face when using the medium. The research question therefore is, what are the important factors surrounding the adoption and use of emulation? This ultimately serves the purpose of informing the reader about emulation, and what issues they should consider before choosing to do so. The following section will define emulation and detail the different factors behind it.

BACKGROUND AND HISTORY

Before investigating the various factors surrounding emulation, it is crucial to define important terms as well as provide background on the use and history of video game emulators. Video game emulation has been around since the 1990's with the introduction of the first emulators and emulators such as UltraHLE, the first Nintendo 64 emulator (Conley et al. 2004). These emulators are used in conjunction with ROM's, files containing game data named after the initial read-only memory storage method used by video game consoles. These ROMs are extracted from the medium of distribution such as a game cartridge and then read by the emulator to recreate the hardware found in a game console in order to play the game on the ROM. These emulators typically are for older game consoles as the computers that run these emulators must recreate the hardware of the system on a software level, something that can be quite resource intensive depending on the complexity of the system. "The three factors that likely influence whether or not a video game or system is emulated are: console popularity, availability of information regarding system

hardware and software, and the technical difficulty of the emulation itself. In general, demand for a suitable emulator for a game system correlates directly with the popularity of a video game console when it was available in the retail marketplace” (Conley et al. 2004).

FACTORS SURROUNDING EMULATION

Legality

One of the biggest issues surrounding emulation is the legality of it and the culture surrounding it. The main legal issue surrounding emulation is the widespread practice of internet piracy surrounding the distribution of ROMs. While there are legal ways to obtain ROMs, usually by extracting the files from the game medium itself, most people seem to opt against the lengthy process and just download it illegally. This is heightened by the fact that quite a lot of people are unaware of how copyright law interacts with emulation and ROMs. In a paper surrounding a survey conducted by Gregory Perreault and Heath Hooper (2014), it is explained that “While ignorance of the law may be no excuse legally, this survey clearly demonstrates a gap in understanding about the laws surrounding emulators as well as the consequences of breaking those laws” (Perreault & Hooper 2014). The paper then goes to explain how previous efforts to educate the public about piracy have failed.

Additionally, this gap in understanding about emulators and ROMs has led to various groups surrounding emulation being taken down due to hosting copyrighted content. This gap in understanding is shown in a survey about the topic in which it was found that “What this survey indicates is that a substantial percentage of the young adult population is largely unaware of digital game piracy—even though nearly everyone surveyed admitted to playing digital games (92%)” (Perreault & Hooper 2014). An example of this is a case involving Emuparadise, a popular ROM sharing website founded in 2000, and Nintendo. As described in an August 2018 article regarding the issue, “EmuParadise, for 18 years a go-to site for emulators and ROMs to play hard-to-find, if not ancient video games, announced last week that it would no longer offer its vast library of ROMs. The legal exposure, the site’s founder said, was simply too great a risk to himself and those who have supported EmuParadise’s efforts. Though EmuParadise did not name Nintendo, much less any legal threat from the console-maker, as the reason, many have tied that company’s vigilance and willingness to take legal action to this development, which seems like another setback to ROMs, emulation and video games preservation” (Good 2018). It is later described that this legal exposure and pressure is due to a set of lawsuits by Nintendo towards the owners and businesses behind ROM hosting websites LoveROMs and LoveRETRO claiming damages of \$100 million, which led to the owners shutting the sites down. This is important to Nintendo as it is described in a paper regarding emulation that “Emulation challenges game makers’ core business model of forced migration to the next generation console while simultaneously denying the same companies’ software/game revenue” (Conley et al. 2004).

This business model has led to companies generally having no monetization for most games that are emulated, an act considered by a large portion of the emulation community as abandoning it, a concept that has led to the term of ‘abandonware.’ While not a legal excuse for piracy, consumers have used this term to justify the act on a moral level for multiple reasons such as inability to legally acquire the game and the company not having a lost sale since the game isn’t being sold. “Clearly, there appears a sizable portion of today’s youth have little problem wandering the gray (and not-so-gray) areas of emulator use and ROM downloading. However, traditional avenues of redress, such as legal threats, may not be the most productive route for publishers to pursue. As explained earlier, individuals can often justify their piracy by imagining that they are simply taking from large, rich, faceless corporations that can easily afford the loss. Bringing out armies of lawyers to threaten downloaders with significant fines likely does little to dispel that image” (Perreault & Hooper 2014).

Preservation

One of the most important beneficial factors of emulation is the preservation of older video games. With the primary feature of emulators being the ability to play older software on newer hardware, naturally the existence of them serves as a great tool in preserving these older games as the older hardware that runs the games, which is prone to breaking and wearing down, is no longer needed. An example of this is the fact that most game cartridges used batteries to store save data, and once those batteries run out the data will be lost. Preservation efforts generally have suffered due to legal restrictions as well as lack of interest from companies around older games. Additionally concerning is the lack of concise and focused preservation efforts. In an article about the issue of preservation as it pertains to emulation and video games, James Newman writes that “Not only is this problematic in and of itself as we run the risk of losing titles and documents forever as well as the stories locked up in the memories of key individuals who grow ever older, but also it is symptomatic of an industry that, despite its public proclamations, neither places a high value on its products as popular culture nor truly recognizes their impact on that culture. While a few valorized, still-ongoing, franchises

like the *Super Mario* and *Legend of Zelda* series are repackaged and (digitally) re-released so as to provide continuity with current releases, a huge number of games simply disappear from view once their short period of retail limelight passes” (Newman 2009). This article shows how preservation efforts should be increased to prevent these games from being lost forever. This lack of concise and focused preservation efforts has led to researchers being unable to gather games for research, this is explained very well in an interview presented in a paper in which it is stated that “As a researcher it is very frustrating because there is not any digital archive.... I have pictures of all the games so I know exactly what they look like but I can’t play them. The only way I have about talking about playing them is from my memory. And it is very frustrating. You kind of learn to at least get a screenshot of anything interesting when you discover it, just in case it’s gone again.” (Barwick et al. 2010)

Cultural Significance and Accessibility

One of the second important beneficial factors surrounding emulation is the ability for people to play culturally significant games that they perhaps grew up with, while allowing extra features and creative possibilities regarding the games that allow for the game to continue to contribute to culture even after it is taken off of store shelves. “Digital games are major part of popular culture. They are also an important part of the history of play and as such they deserve to take their rightful place in our cultural legacy” (Barwick et al. 2010). Additionally important regarding emulators is its allowance of additional features. These features can range from user customizable controls, improved graphics, and quality of life improvements, to even allowing fans to modify the game to add new levels or even make an entirely new game.

This modification of a game by fans is called ROM-Hacking, a practice that has led to various fan games, added features, as well as the inclusion of accessibility features such as translations into other languages. This is greatly important as there have been various games that have only been released in one language but due to the work of a ROM-Hacker can be experienced by entirely new groups of people who wouldn’t have been able to experience it beforehand.

This is furthered even more with the ability to use custom controllers in emulators such as the Xbox adaptive controller, a controller made by Microsoft Inc. in collaboration with “... The AbleGamers Foundation, The Cerebral Palsy Foundation, SpecialEffect, Warfighter Engaged, and many community members” (Microsoft 2019) to allow people with disabilities and impaired motor skills to play video games. Overall this leads to a much greater number of people being able to experience these video games who wouldn’t have been able to experience them without emulation and makes the entirety of video gaming more accessible to all.

Table 1 below summarizes the discussion above by outlining the major factors behind emulation that were extracted from extant literature. We categorized each of the articles based on what topics each publication touched upon. It is important to note that some publications may be in more than one category since it covered multiple topics.

Factors	Publications
ALL	Conley et al. (2004)
Preservation	Guttenbrunner et al. (2010); Gooding & Terras (2008); Murphy (2013); Esposito (2005); Barwick et al. (2010); Bachell & Barr (2014); Newman (2009); Newman (2012); Orland (2018)
Legal	Gooding & Terras (2008); Good (2018); Nintendo (2019); Rahming (2018); Perreault & Hooper (2010); Newman (2012); Orland (2018)
Historical	Murphy (2013); Good (2018); Rahming (2018);
ROM-Hacking	Sharp (2007); Newman (2012);
Cultural	Esposito (2005); Sharp (2007); Barwick et al. (2010); Newman (2009);
Ethical	Perreault & Hooper (2010); Khong (2007);
Piracy	Perreault & Hooper (2010); Newman (2012); Khong (2007);
Accessibility	Microsoft (2019)

Table 1. Factors impacting emulation

CONCLUSION AND A PATH FORWARD

Overall, the topic of video game emulation is a complex issue with various legal and moral issues. One thing shown overall is the lack of knowledge about the topic by the general public as well as confusion about what is legally and morally right and wrong regarding the software and practices surrounding it as well as what important factors that contribute to it. Overall, it is strongly encouraged that efforts be made to educate the populous about these issues and for open discussions to be made between all concerned parties to allow for future cooperation.

As for possible paths forward from this point that could lead to greater benefits for all sides, there are multiple approaches, and the future of emulation will likely be a mix of these. Firstly, companies can simply continue to sell their games rather than take them off the market and port them to newer systems. This approach not only benefits the average consumer as their experience will be streamlined, but it will benefit the developers as they continue to receive profit from their games. A second path forward involves the lessening of legal restrictions as they pertain to preservation efforts, this will prevent these games from being lost to time and will allow academic institutes to reference and study these games. Lastly, developers, rather than remake their games to port to new consoles and devices, could merely sell the ROMs for their games. Ultimately, there are various ways in which the needs of all parties related to emulation can be sated, but in order for this progress to be made, better education and discussion between these parties must be made around the subject.

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