

**The history of file sharing**

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## File sharing introduction

File sharing is arguably one of the most important aspects of doing work on any computer-based system. It allows people to share work and communicate important information to one another in an instance without needing to physically hand off the information to another person. Without it, the speedy workflow and transfer of information, that we take for granted today would not exist. To clarify, a file is a resource for recording data onto a computer's storage device. The data held within files can range from text documents, mp3 music files, movie files and even video game ISOs. But recently there has been a debate brewing between companies and consumers on the legality of file sharing and the ownership of media in regards to preservation. Being that files are a pivotable part to computers, I wanted to ask the questions of, what did the evolution of file sharing look like, has file sharing become more detrimental to companies' overtime, and should laws around file sharing and copyright change with the times to protect the act of file preservation and sharing? To answer these questions, we must first look back at the beginning and see how it all started, along with how companies responded over the years to this.

### The dawn of file sharing 1977-1979

The beginnings of file sharing can be seen a small spark that turned into a gigantic fire of innovation. It all can be traces back to one individual who would be the catalyst for the entire file sharing scene, and his name is Ward Christensen. In 1977 Ward would create a point-to-point transfer protocol to send files over the sender's modem, called the Xmodem. How the file is transferred, works very similar to how it works today, where the data that is being sent over the modem is being broken up into smaller packets and sent over through the modem to the receiver.

But as you can imagine, the file sizes were small, with the max for a file in bits being only 64 kb and the time it took for a file to get to the receiver, would also take forever. But that didn't stop Ward, as he was determined to further improve upon the system and in 1978 Ward Christensen, along with Randy Suess and fellow collages of CACHE (Computer Hobbyist Exchange) would create the CBBS the first ever computerized bulletin board system. This system allowed users to share files and messages to one another essentially making the world's first online message board. While this was a huge accomplishment for file sharing, in 1997 Tome Truscott and Jim Ellis would come up with Usenet, a highly influential site that blew CBBS out of the water and is still being used to this day for file sharing and discussion.

#### Increasing momentum 1980-1989

In the 80's we see a slight increase in momentum with file sharing while utilizing the preexisting tools developed during the 70's. For instance, in 1981, the Kermit protocol was introduced within universities, to connect pc and microcomputers to one another so that they can use software like telnet and the BBS. But the two biggest advancements happened during the 1980's would happen about two years apart from one another. That being the invention of the internet, a vastly expanding network of information that would soon transform the way files are transferred in the coming years. However, something equally as important happened in 1985, that would enhance file sharing forever. That being the standardization of the File Transfer Protocol, which allowed for the transfer of files between two parties over a TCP-based network. This would exenterate the transfer of files and bring it from a niche hobby for college students and professors, to the mainstream in the coming years. During the mid to late 80's there would be improvements made to the Xmodem, turning it into the Ymodem and later the Zmodem.

While these accomplishments were going on in the background there would be a case in 1984 that would have everyone paying attention, as they knew affect them one day.

### Sony Corp. of America V. Universal City Studios, Inc

During January of 1984, Universal studios sued Sony of America for copyright infringement, stating that the devices that they sold to the public (Betamax's) were being used by the consumers in the act of time-shifting. Essentially, Universal was angry at Sony for producing Betamax's because people were using them to record movies and shows that Universal owned so that they could watch at a later time. The district courts ruled in favor of Sony, concluding that, "noncommercial home use recording of material broadcast over the public airwaves was a fair use of copyrighted works, and did not constitute copyright infringement." (Justia, January 17, 1984). This decision would see Sony, not responsible for the actions of the consumer and the case would be dropped. This case wouldn't have been seen as important back then, but in hindsight, it can be seen as one of the first cases of a company using copyright laws against people/companies for saving portions of their copywritten material, which will become a major issue in the following decades.

### Dawn of the internet 1990-1999

During the 90's the file sharing scene practically exploded over night in popularity thanks to the magnitude of sites and software that popped up during this time, which made file sharing more accessible. This was in large part because, in November of 1990, we would see the introduction of the World Wide Web, which would act as an information pipeline for scientist

and scholars all over the globe to use during its inception. It wouldn't be until 1993, when the internet would be brought into the public and grow in popularity. A year later in December of 1991, MPEG (Moving Picture Experts Group) along with Karlheinz Brandenburg, Fraunhofer Society, would create and standardize MPEG-1 Audio Layer 3, which allowed songs that were on CDs to be converted into files on your computer. Compared to MPEG-1 Audio Layers 1 and 2, 3 provided "excellent compression of music signals", by using "dual channels, single channel, stereo, multichannel signals and joint stereo." (Margaret Rouse, 2016). This is very important, as more and more file sharing services like Scour Inc and AOL instant messaging in 1997 and software like Hotline for Mac and Windows Media Player 6.1 for Windows that allowed for file transfer and mp3 playback, were starting to emerge around this time. As time went on, there was a demand from consumers that wanted to convert their CDs to mp3s so that they could listen to their music in a digital format. The demand would be answered in the same year with the advent of MP3.com, a site which allowed users to upload their legally acquired CDs and store them in their own safe so that they can access them whenever they want. With the help of MP3.com, the accessibility and convenience of mp3 files were revolutionary, and throughout the late 90's there would be devices like the MPMan F10 in 1998 (the first portable mp3 player) and later the same year, the Rio PMP300 (another portable mp3 player that gained popularity) that would try and capitalize on the trend. In October of 1998, internet service providers were given a saving grace, as the Digital Millennium Copyright Act was passed, which kept service providers safe of being sued due to the actions of their users. The last notable event that took place in this decade, was that in June of 1999, the website Napster, a peer-to-peer file distribution site that focused on mp3 formats. Within six months the first lawsuits against Napster were filed and the beginnings of a legal battle would soon start.

### The golden age of the internet 2000-2009

Throughout the early 2000s there were a lot of websites coming out of the woodwork, trying to become the next big file sharing services. While I would like to go into this decade with much detail, I will have to keep it brief and talk only about the most important events during this time. In the beginning of the decade there were sites like Freenet, which promoted freedom of speech and anonymity on a peer-to-peer network, and eDonkey2000, which introduced hashing into decentralized file sharing. In 2003 the iTunes Music Store is launched by Apple, bringing in a huge wave of people into the world of mp3 usage, but this service did come with a digital rights management that prevented the act of file sharing. This meant that your music was locked down to your account only and there was no way of using peer-to-peer file sharing methods to by-pass it. In 2003, there was a site known as The Pirate Bay, which is still in operations today, and while most websites had piracy as a by-product of hosting a peer-to-peer file hosting site, the pirate bay was the first stie to openly promote piracy and mock companies for enforcing copyright, which shows the emerging retaliation that consumers started to show against companies back then. Fast-forwarding to 2005 we say the launch of YouTube, which revolutionized the video file sharing media, by creating a hub for individuals to share their creations with other people on the internet. In 2007 Amazon.com would sell mp3 files that were DRM free.

### RIAA's lawsuit brigade

Staring in the late 90's an organization known as the Recording Industry Association of America (RIAA) started to crack down more and more on file distribution and enforcing

copyright lawsuits on websites and other companies trying to capitalize from it. The first move that they tried to make was issuing a restraining order on the Rio PMP300 MP3 player when that was becoming popular. This would see the courts turning down the lawsuit, but it would deter RIAA for long. RIAA would stay quiet for a while, with the occasional lawsuit being filed against sites like Audiogalaxy in 2002, for illegally distributing songs on their site. But in 2003, RIAA would do one of the most unprecedented acts imaginable to protect their copyrighted material. RIAA would begin to sue on an individual basis and target anyone who had used a peer-to-peer service to share music files. These lawsuits targeted people at random, meaning that anyone from children to the elderly were liable to be sued by them if they committed this act. RIAA's lawsuit campaign on individuals lasted for about five years, ending in 2008 and with about 30,000 lawsuits served and money wasted. Even after all the lawsuits were being made it was revealed in a survey in 2004 that "88% of children between 8 and 18 years of age believed that P2P downloading was illegal. At the same time, the survey also discovered that 56% of children polled continued to download music." (Electronic Frontier Foundation, 2008). Meaning that the aggression tactic that they praised for stopping piracy of music ultimately failed to do anything of significance.

### The fall 2010-Present

By the 2010s the standards of file sharing hadn't changed much from the previous decade. There was no real innovation within the scene like it was back in the 90's, as a lot of the sites that had emerged at the time had long since gone defunct as they were being sued into the ground. Some of the largest torrent, peer-to-peer file sharing sites like Kickass Torrents were shut down as of 2016, while other sites like Freenet decided to rewrite their code to be hosted on the

dark web years ago, so that the anonymity of its user base was protected. However, around the late 2010s there was a resurgence in the interest of file preservation and digital ownership, which sparked after people started to realize that a lot of the media from yester year (primary video games) were stating to disappear and the companies that were in charge of these intellectual properties didn't have any intention of re-releasing these in any official capacity. This led to more enthusiast speaking out and raising awareness of the potential that these beloved games could be lost forever if something wasn't done about it.

### Game archival and law reform

As mentioned in the previous few paragraphs, companies tend to really hate the idea of the consumer being able to make backups and share files of media that they own, especially for video games. They believe that it is a violation of their copyright, and it hurts their bottom line. While I can see the argument that is being made, I simply do not believe that the act of creating and sharing backups of media that is no longer available for purchase are hurting companies in any way, and in fact I believe that not being able to preserve these pieces of work for the future generation is far more detrimental in the long run. Unlike music and movies, video games, tend to have a limit shelf life of about ten years before it's no longer available to purchase. This is because when a new console comes out, the games made for the old console tends to get phased out to make way for new products. Usually when the new generation of games come in, the old games doesn't see a re-release for the new generation of consoles and they in turn, disappear. This becomes a preservation issue, as new studies have come out just recently that confirms that around 87% of all games released before 2010 are lock on their old consoles and cannot be bought on current hardware. In a study about this subject, it is stated that "the Entertainment

Software Association stated in 2020, copyright owners not only have the right to reissue their games but also the right to decide not to do any of those things.” (Phil Salvador, 2023, p.10).

Archiving these games seems to be the best way to counter this, but with archiving and sharing the files, companies have been known to pursue extreme legal measure to protect their copywritten material, even when they haven't released the product in question in over twenty years or longer. To counter acts like this, there must be adjustments made to the current copyright laws in order for preservationist to precure and save these games without the threat of legal action from the copyright holders. I firmly believe that what should be done, is that the copyright for products should have a time limit of about fifteen years placed on it. Within fifteen years the copyright for that specific product should be stripped form the company. Meaning that in fifteen years the original product should be free of any copyright protections, even if the product is rereleased. The rereleased product should have its own copyright protections time limit.

### Conclusion

In the end I learned that the history of file sharing is a vast and interesting relic that deserves to be remembered. It is a testament to the knowledge and resilience of creators and users who fought against the odds in favor of preservation and ownership. It is indeed interesting to look back at the past and see just how often history seems to repeat itself and it also shows that to break the cycle, there must be changes to the foundation on which the law sits on. Laws need to change for media to survive, without being threaten by companies who doesn't seem to care about preserving the products they make. I'm interested in seeing where the future of file sharing takes us, because file sharing can still change a lot in the coming years, hopefully for the better.

### Work Cited

“RIAA v. The People: Five Years Later” Electronic Frontier Foundation. 30 September 2008.

<https://www.eff.org/wp/riaa-v-people-five-years-later#7>

Margaret Rouse (2016). MPEG-1 Audio Layer 3. Techopedia

<https://www.techopedia.com/definition/903/mpeg-1-audio-layer-3-mp3>

Phil Salvador (2023). Survey of the Video Game Reissue Market in the United States. *For the Video Game History Foundation and the Software Preservation Network.*

<file:///E:/CYSE%20280/notes/Survey%20of%20the%20Video%20Game%20Reissue%20Market%20in%20the%20United%20States%201.1.pdf>

“Sony Corp. of America v. Universal City Studios, INC., 464 U.S. 417 (1984)” JUSTIA. January 17, 1984.

<https://supreme.justia.com/cases/federal/us/464/417/>