File sharing

From Wikipedia, the free encyclopedia
 (Redirected from File sharing and the law)

> *This article is about file sharing over the Internet. For printer and file sharing as local area network service, see shared disk access.*

File sharing is the practice of distributing or providing access to digitally stored information, such as computer programs, multi-media (audio, video), documents, or electronic books. It may be implemented in a variety of storage, transmission, and distribution models. Common methods are manual sharing using removable media, centralized computer file server installations on computer networks, World Wide Web-based hyperlinked documents, and the use of distributed peer-to-peer (P2P) networking.

While file sharing is not of itself illegal, the increasing popularity of the mp3 music format in the late 1990s led to the release and growth of Napster and other software that, while designed simply to aid in the sharing of electronic files, in practice led to a huge growth in illegal file sharing: the sharing of copyright protected files without permission. Other popular networks include Gnutella, Gnutella2, eDonkey2000, the now-defunct Kazaa network, and BitTorrent.

Many file sharing networks and services, accused of facilitating illegal file sharing, have been shut down due to litigation by groups such as the RIAA and MPAA. During the early 2000s, the fight against copyright infringement expanded into lawsuits against individual users of file sharing software.

The economic impact of illegal file sharing on media industries is disputed. Copyright holders and publishers refer to studies concluding that unauthorized downloading of movies, music and software is unequivocally damaging the economy, although other studies suggest file sharing is not the primary cause of declines in sales. Illegal file sharing remains widespread, with mixed public opinion about the morality of the practice.

Part of a series on
File sharing

- Timeline of file sharing

Concepts:

- Anonymous P2P
- Friend-to-friend
- Darknet
- Private P2P

Networks and services:

- Gnutella, Gnutella2 (G2)
- eDonkey
- BitTorrent, Mininova, isoHunt, The Pirate Bay

Other:

- File sharing in Canada

Contents

Types of file sharing

There are many options for sharing files on the Internet, one of the most popular is peer-to-peer networks, or P2P networks. Some of the most popular networks are FastTrack, Gnutella, Gnutella2 and eDonkey network. With these networks, the user downloads a program to

their computer that allows them to connect to the network. Then with this program the user can search the shared media on other users' computers and download this media from them across the Internet. These networks allow the sharing of any type of digital content, including songs, DVD-quality movies, computer programs and video games.

One of the most popular ways to get very large files like movies, computer applications, and video games is to use BitTorrent, another type of peer-to-peer network. With BitTorrent large media files are broken down into smaller chunks, which are then transferred to the user (or peer) depending on the fastest possible connection to the missing piece; all of this is done while the user is uploading the pieces it already has to other users. While this type of file sharing is most popular and useful for large movies and games, it can also be used for music, but usually users download music by the album or artist instead of a couple of songs.

File sharing can be done with no use of peer-to-peer technologies, for example by the use of a file hosting service. These sometimes also provide collaboration tools such as forums and groups, and allow links for direct downloads to be embedded in other communications such as emails and websites.

Anonymity

Anonymous networking technologies have been developed to allow the exchange of data between computers and users in a way that obscures either the user and its network location or the destination of a data access, or both. A popular method is the onion routing concept, prominently implemented in the tor network. Such methods are often used to transfer contentious or illegal material and copyrighted works in violation of legal or acceptable use policies. Many current implementations incur high overhead, making them slow or hard to use. However, in locations where very fast Internet access is common, a number of anonymous file-sharing programs have already reached high popularity. Examples of anonymous P2P networks are ANts P2P, RShare, Freenet, I2P, GNUnet and Entropy.

History

Main article: File sharing timeline

Files were first exchanged on removable media. Computers were able to access remote files using filesystem mounting, bulletin board systems (1978), Usenet (1980), and FTP servers (1985). Internet Relay Chat (1988) and Hotline (1997) enabled users to communicate remotely through chat and to exchange files. The mp3 encoding, which was standardized in 1991 and which substantially reduced the size of audio files, grew to widespread use in the late 1990s. In 1998, MP3.com and Audiogalaxy were established, the Digital Millennium Copyright Act was unanimously passed, and the first mp3 player devices were launched. MP3.com offered music by unsigned artists, and grew to serve 4 million audio downloads daily.

USENET was created in 1979.[1] It is a network that was initially based on the UUCP protocol for dial-up connections and has, since being transported over the Internet, used a specialized client-server protocol, the Network News Transfer Protocol (NNTP). Its main purpose was the exchange of text based messages, but through attachments allows users to encode files and distribute them to participating subscribers of Usenet newsgroups. USENET remains one of the largest carriers of file sharing and Internet traffic.[2][3] Recently legal challenges to P2P systems have spurred a resurgence of Usenet.[4] USENET has also been itself the target of legal challenges pertaining to its use in file sharing.[5]

In June 1999, Napster was released. Napster is a centralized unstructured peer-to-peer system,[6] requiring a central server for indexing and peer discovery. It is generally credited as being the first peer-to-peer file sharing system. In the Napster case,[7] an online service provider cannot use the "transitory network transmission" safe harbor in the DMCA if they have control of the network with a server. Many P2P products will, by their very nature, flunk this requirement, just as Napster did.[8] Napster provided a service where they indexed and stored file information that users of Napster made available on their computers for others to download, and the files were transferred directly between the host and client users after authorization by Napster. Shortly after the A&M Records, Inc. v. Napster, Inc. loss in court Napster blocked all copyright content from being downloaded.

Gnutella, eDonkey2000, and Freenet were released in 2000, as MP3.com and Napster were facing litigation. Gnutella, released in March, was the first decentralized file sharing network. In the Gnutella network, all connecting software was considered equal, and therefore the network had no central point of failure. In July, Freenet was released and became the first anonymity network. In September the eDonkey2000 client and server software was released.

In 2001, Kazaa was released. Its FastTrack network was distributed, though unlike Gnutella, it assigned more traffic to 'supernodes' to

increase routing efficiency. The network was proprietary and encrypted, and the Kazaa team made substantial efforts to keep other clients such as Morpheus off of the FastTrack network.

In July 2001, Napster lost in court and was shut down. This drove users to other P2P applications and file sharing continued its exponential growth.[9] The Audiogalaxy Satellite client grew in popularity, and the LimeWire client and BitTorrent protocol were released. Until its decline in 2004, Kazaa was the most popular file sharing program despite bundled malware and legal battles in the Netherlands, Australia, and the United States. In 2002, a Tokyo district court ruling shut down File Rogue and an RIAA lawsuit effectively shut down Audiogalaxy.

From 2002 through 2003, a number of popular BitTorrent services were established, including Suprnova.org, isoHunt, TorrentSpy, and The Pirate Bay. In 2002, the RIAA was filing lawsuits against Kazaa users. As a result of such lawsuits, many universities added file sharing regulations in their school administrative codes. With the shut down of eDonkey in 2005, eMule became the dominant client of the eDonkey network. In 2006, police raids took down the Razorback2 eDonkey server and temporarily took down The Pirate Bay. Pro-file sharing demonstrations take place in Sweden in response to the Pirate Bay raid. In 2009, the Pirate Bay trial ended in a guilty verdict for the primary founders of the tracker.

As of 2009, BitTorrent via uTorrent and Azureus and the trackers & indexing sites, Gnutella via Limewire and the eDonkey network via eMule are the most popular networks.[10][11][12] All most popular networks and protocols including BitTorrent, eDonkey, Gnutella, Gnutella2, FTP and HTTP are aviable together via Shareaza, the open source multinetwork client. Services like iTunes account for much of legal music sales, and sites like YouTube and various one-click hosting providers allow file sharing through uploads to their servers.

Copyright and controversy

Main article: Copyrighted content on file sharing networks

A significant number of people share files in a way that infringes on the rights of copyright holders. Copyright holders have challenged the legality of file sharing networks. This has led to litigation by industry bodies against certain private individual file sharers.

The legal issues surrounding file sharing have been the subject of debate and conferences.[13]

Digital rights management is intended to curb copyright infringement by preventing file sharing but has proved unpopular with consumers due to the restrictive usage policies imposed.

Demonstration in Sweden in support of file sharing, 2006.

US legal controversy

In Sony Corp. v. Universal Studios, 464 U.S. 417 (1984), the Supreme Court found that Sony's new product, the Betamax (the first mass-market consumer videocassette recorder), did not subject Sony to secondary copyright liability because it was capable of substantial non-infringing uses. Decades later, this case became the jumping-off point for all peer-to-peer copyright infringement litigation.

The first peer-to-peer case was A&M Records v. Napster, 239 F.3d 1004 (9th Cir. 2001). In the Napster case, the 9th Circuit considered whether Napster was liable as a secondary infringer. First, the court considered whether Napster was contributorily liable for copyright infringement. To be found contributorily liable, Napster must have engaged in "personal conduct that encourages or assists the infringement."[14] The court found that Napster was contributorily liable for the copyright infringement of its end-users because it "knowingly encourages and assists the infringement of plaintiffs' copyrights."[15] The court goes on to analyze whether Napster was vicariously liable for copyright infringement. The standard applied by the court is whether Napster "has the right and ability to supervise the infringing activity and also has a direct financial interest in such activities."[16] The court found that Napster did receive a financial benefit, and had the right and ability to supervise the activity, meaning that the plaintiffs demonstrated a likelihood of success on the merits of their claim of vicarious infringement.[17] The court denied all of Napster's defenses, including its claim of fair use.

The next major peer-to-peer case was MGM v. Grokster, 545 U.S. 913 (2005). In this case, the Supreme Court found that even if Grokster was capable of substantial non-infringing uses, which the Sony court found was enough to relieve one of secondary copyright liability, Grokster was still secondarily liable because it induced its users to infringe.[18][19]

It is important to note the concept of blame in cases such as these. In a pure P2P network there is no host, but in practice most P2P networks are a hybrid (see "Computer science perspective" below). This has led groups such as the RIAA to file suit against individual users, rather than against companies. The reason that Napster was subject to violation of the law and ultimately lost in court is because Napster was not a pure P2P network but instead maintained central server. This server maintained an index of the files currently available on the network.

Around the world in 2006, an estimated five billion songs, equating to approximately 38,000 years in music were swapped on peer-to-peer websites, while 509 million songs were purchased online.[20]

Economic impact

The economic effect of file sharing on music revenue is controversial and difficult to determine. Music sales dropped globally from approximately $38 billion in 1999 to $32 billion in 2003, and a number of studies have found that file sharing has a negative impact on record sales.[21][22][23] However, a study analyzing logs of downloads on file sharing networks concludes that file sharing has no negative effect on CD sales, and possibly would slightly improve the sales of top albums.[24] It may be difficult to untangle the cause and effect relationships among a number of different trends, including an increase in legal online purchases of music; illegal file-sharing; drops in the prices of CDs; and the extinction of many independent music stores with a concommitant shift to sales by big-box retailers.[25]

The MPAA had reported that American studios lost $2.3 billion to Internet piracy in 2005, representing approximately one third of the total cost of film piracy in the United States. [26] The MPAA's estimate has been doubted by commentators since it is based on the assumption that one download was equivalent to one lost sale, and downloaders might not purchase the movie even if illegal downloading were not an option.[27][28][29] These numbers are further suspicious due to the private nature of the study, which cannot be publicly checked for methodology or validity.[30][31][32] On January 22, 2008, as the MPAA was lobbying for a bill which would compel universities to crack down on piracy, it was alleged that MPAA figures on piracy in colleges were inflated by up to 300%.[33][34]

Piracy rates of one-quarter or more for popular software and operating systems are common, even in countries and regions with strong intellectual property enforcement, such as the US or the EU.[35] The pirated software is often distributed through file sharing.

File sharing advocates

Further information: Anti-copyright

The ethical issues come mostly from the concern that practitioners of file sharing may infringe property rights.

File sharing is not always illegal, even if the works being shared are covered by copyright. For example, some artists may choose to support freeware, shareware, open source, or anti-copyright, and advocate the use of file sharing as a free promotional tool.

Some advocates claim that sharing helps the affected industry by allowing the consumer to sample the product before spending the money to purchase it. This, they claim, in turn generates a new fan base as many discover artists that would be virtually impossible to discover otherwise, thus generating more album sales. Once the consumer is allowed to "sample" a lower-quality version, they might decide to buy, whereas they might never have bought it had they not been allowed to sample the media on their computer first.

Some advocates also argue that file sharing doesn't hurt people financially.[36]

Another pro-file sharing argument is that movie, game, and other types of media are not seeing any drop in sales; but a rise. P2P file sharing is only one of many factors attributed to the recent drop in CD sales.[36]

In the case of music, another argument is the alleged overpricing of CDs. Many consumers feel that CDs are far too expensive relative to decreasing costs of production. Consumers who only want one or two songs that have not been released as singles believe they should not have to pay the entire cost of a CD.

Some file sharers argue that the companies whose intellectual property is being copied are large and generate high profits, and can thus afford the possible loss in profits.

Other advocates of file sharing believe that file sharing does not affect artists' profits and only benefits the distribution company.

Many advocates adamantly believe that access to music and films is, by its intrinsic cultural value, a right that should not be subject to distributors' oligopoly.

A further argument in favour of file sharing is that not all of its users would buy all of the material that they download. In other words, one illegal download will not immediately translate to one lost sale, as many anti-piracy groups maintain.

Significant cultural sources for arguments against copyright include the Free Software culture [2] (http://emoglen.law.columbia.edu/publications/anarchism.html) , anarchism, the pirate and warez cultures, libertarian and civil libertarian groups [3] (http://www.eff.org/issues/file-sharing) .[4] (http://praxeology.net/anticopyright.htm) [5] (http://libertariannation.org/a/f31ll.html) . Rasmus Fleischer argues that Web 2.0 has changed society so significantly that personal behavior and business models simply make copyright law irrelevant.[37]

File sharing opponents

Further information: Copyright infringement

Some opponents believe that the author of a creative work has certain natural rights to that work, and that it is an integral part of their identity.

The wrong alleged is not simply the causing of financial loss, but may include:

1. The loss of a chance to make a gain.
2. The loss of a choice as to how their work is dealt with.
3. The loss of the capacity to make a decision as to how to run their business, even if that decision is a poor one.

Opponents further argue that copyright creates an incentive for the creation of works. As such, it is important that it be respected, so that creative people are encouraged to create works which benefit society. By infringing copyright, the infringer reduces this incentive, and thus harms society. Opponents argue that the selling of rights to a publishing intermediary is immaterial. Additionally, they argue that financial losses may not occur immediately, but market value is still reduced by infringement. Proponents' counterargument is that market value should be what is willingly paid and not that which is inflated by copyright.

Other artists believe that copyright infringement of their works cheats them out of the monetary incentive to publish their work. The musician, director, or game designer must copyright his or her creative product in order to maintain the exclusive right to profit from his or her product.

Public perception and usage

In 2004, there were an estimated 70 million people participating in online file sharing.[38] According to a CBS News poll, nearly 70 percent of 18 to 29 year olds thought file sharing was acceptable in some circumstances and 58 percent of all Americans who followed the file sharing issue considered it acceptable in at least some circumstances. [6] (http://www.cbsnews.com/stories/2003/09/18/opinion/polls/main573990.shtml)

In January 2006, 32 million Americans over the age of 12 had downloaded at least one feature length movie from the Internet, 80 percent of whom had done so exclusively over P2P. Of the population sampled 40 percent felt that downloading copyrighted movies and music off the Internet constituted a very serious offense, compared with 78 percent who felt that of taking movies and music from a store.[39]

In February 2008 the LA Times Blog published results of a US campus attitude survey which showed that 64 percent of respondents download music regularly through file-sharing networks and other unauthorized sources. The respondents were also asked to rate on a 1 to 7 scale "how nervous they were about being punished for illegal downloading" (1 being "not concerned" and 7 being "extremely concerned"), two-thirds answered 1 (43 percent) or 2 (24 percent). Only 4 percent answered 5 or 6, and none answered 7, "extremely concerned".[40][41]

In July 2008, 20 percent of Europeans used file sharing networks to obtain music, while 10 percent use paid-for digital music services such as iTunes.[42]

In February 2009, a Tiscali UK survey found 75 percent of the American public polled were aware of what was legal and illegal in relation to their file sharing. However, there was a divide as to where they felt the legal burden should be placed; 49 percent of people believed P2P companies should be held responsible for illegal file sharing on their networks, 18 percent viewed individual file sharers as the culprits, while 18 percent either didn't know or chose not to answer.[43] In the same survey, 60 percent of people reported downloading music because of a limited budget. A common attitude concerning music downloading was that of 'why should one pay for something when they can get it for free?'

According to an earlier poll, 75 percent of young voters in Sweden (18-20) supported file sharing when presented with the statement: "I think it is OK to download files from the Net, even if it is illegal." Of the respondents, 38 percent said they "adamantly agreed" while 39 percent said they "partly agreed".[44]

Risks

Researchers have examined potential security risks including the release of personal information, bundled spyware, and viruses downloaded from the network.[45] Some proprietary file sharing clients have included bundled malware, though open source programs typically have not.

Recently, there has been a drastic increase of inadvertent P2P file sharing of personal and sensitive information. This became evident in 2009 at the beginning of President Obama's administration. On February 26, 2009 the blueprints to the helicopter Marine One were made available to the public through a breach in security through a P2P file sharing site. Access to this information has the potential of being detrimental to national security.[46]

Two days prior, the *Today Show* reported that more than 150,000 tax returns, 25,800 student loan applications and 626,000 credit reports were all inadvertently made available though File Sharing.[46]

Over the last six years identity theft has become more prevalent. On July 9, 2008 there was another inadvertent revealing of vast amounts of personal information through careless use of a P2P site. The "names, dates of birth, and social security numbers of about 2,000 of the firms clients, including Supreme Court Justice Stephen Breyer were all exposed."[46]

In an attempt to avoid these security leaks, current legislation in the United States is being debated, the Informed P2P User Act.[47] According to this act, it would be mandatory for individuals to be aware of the risks associated with peer-to-peer file sharing before purchasing the software. Informed consent of the user prior to use of these programs would be required. In addition, this act would allow users to block and remove P2P file sharing software from their computers at any time.[48] The Federal Trade Commission would enforce these regulations.

See also

- Comparison of file sharing applications
- Disk sharing
- File sharing in Canada
- File sharing timeline
- Privacy in file sharing networks
- Trade group efforts against file sharing
- Warez

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47. **^** "Hearing on Barrow P2P Legislation Held on Tuesday" (http://www.barrow.house.gov/index.php?option=com_content&task=view&id=346&Itemid=72) , *Congressman John Barrow*
48. **^** "Text of H.R. 1319: Informed P2P User Act" (http://www.govtrack.us/congress/billtext.xpd?bill=h111-1319) , *GovTrack.us*

Further reading

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- Steve Kelly. File Sharing in Vista? (http://www.networkmagic.com/advice/article/sharing-files-and-printers-with-vista.php)
- Silverthorne, Sean. *Music Downloads: Pirates- or Customers? (http://hbswk.hbs.edu/item.jhtml?id=4206&t=innovation)* . Harvard Business School Working Knowledge, 2004.
- Ralf Steinmetz, Klaus Wehrle (Eds). Peer-to-Peer Systems and Applications (http://www.peer-to-peer.info/) . ISBN 3-540-29192-X, Lecture Notes in Computer Science, Volume 3485, September 2005
- Stephanos Androutsellis-Theotokis and Diomidis Spinellis. A survey of peer-to-peer content distribution technologies (http://www.spinellis.gr/pubs/jrnl/2004-ACMCS-p2p/html/AS04.html) . ACM Computing Surveys, 36(4):335–371, December 2004. doi:10.1145/1041680.1041681 (http://dx.doi.org/10.1145/1041680.1041681) .
- Stefan Saroiu, P. Krishna Gummadi, and Steven D. Gribble. A Measurement Study of Peer-to-Peer File Sharing Systems (http://www.cs.ucsb.edu/~almeroth/classes/F02.276/papers/p2p-measure.pdf) . Technical Report # UW-CSE-01-06-02. Department of Computer Science & Engineering. University of Washington. Seattle, WA, USA.
- Selected Papers (http://www.cs.huji.ac.il/labs/danss/p2p/resources.html) — A collection of academic papers.

External links

- File storage web applications (http://www.dmoz.org/Computers/Internet/On_the_Web/Web_Applications/Storage//) at the Open Directory Project

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Categories: File sharing | Peer-to-peer file sharing | Internet terminology | Internet Relay Chat | Instant messaging | Social networks