

The History of File-Sharing [1]

Last century filesharing was a fringe hobby, only for geeks who were lucky enough to own a computer that could dial into the World Wide Web. How different is that today, where filesharing has become daily routine for hundreds of millions of people worldwide. In just a few years swapping files has become mainstream. Time to take a step back and see how it all came about.

Sharing is Caring!



Digital filesharing has come a long way since the early days of the floppy disk, starting with a 79.7 kB storage capacity in the early 1970s.

Two decades ago 3.5" disks were the most sought after medium to distribute files. At the time, their massive 1.4 MB file size was more than enough to distribute files. But things got really interesting when people started to swap files on the Internet.

In just 2 score years, filesharing has evolved into an amazingly efficient process which has enhanced lives everywhere. It has brought great exposure to underexposed types of media and democratized distribution, making it possible for individuals to share files with the rest of the world at virtually no cost.

Let's briefly examine how filesharing has become what it is today in a *non-exhaustive* overview.

BBS: The Early Days (70s-90s)

The BBS, or Bulletin Board System [2], has been largely attributed with the beginning of contemporary digital filesharing. Beginning with the Hayes Smartmodem, Bulletin Board Systems became automatic enough that Sysops (or administrators) were able to own and operate these mediums from their own homes as both a hobby and, later, as a business. Typically, the BBS was almost like an intranet in which users would dial-in with their modems to read/send messages, access news, and most importantly for us, share files.

Shareware [3] became incredibly popular through the distribution provided by Bulletin Board Systems. From Wolfenstein to Commander Keen, users were able to learn about a BBS by word of mouth and, in its pinnacle, through printed magazines focusing on BBS's. Many well-known software packages, including PKZIP [4], were made popular through the BBS. Many users today still use PKZIP's .zip algorithm when compressing and decompressing archives.

There are still many traditional Bulletin Board Systems in operation today.

Usenet: Beginnings of Decentralization (Late 70s-Present)

Usenet [5] or Newsgroups were similar to Bulletin Board Systems. However, they operated using UUCP [6] and were able to transcend beyond the centralization of a BBS. Essentially, Usenet servers were able to receive files and re-distribute them amongst other Usenet servers effectively creating multiple copies of messages and files across hundreds upon thousands of servers. Usenet was the medium for discussions which gave birth to several projects, including the World Wide Web, Linux, and Mosaic, amongst other amazing projects.

While Usenet has been in existence since the late 70s, major filesharing did not typically occur until much later. In 1993, Eugene Roshal created RAR [7] which allowed users to split files into multipart archives. Given the decentralized copy-nature of Usenet, this helped distribute files much faster and more efficiently, as corruption in file transfers no longer required files to be re-uploaded in their entirety.

Although many may disagree, Usenet is still very much in use today. However, it is used mostly for filesharing rather than for its original purpose of messaging, which has been mostly replaced by contemporary web forums and IRC.

FTP and FXP: Topsites and the ISO Scene (90s-Present)

Soon after, the underground filesharing scene gave birth to an intricate private network of FTP sites known as Topsites ^[8]. These networks were based on invite only systems and adopted many of the features of Usenet.

Generally, release groups would upload new media to their release servers and create various kinds of announcements thereof (generally, IRC bot based). Then, couriers who had access to the release servers, as well as other servers, would transport or "race" new releases from one server to another, typically with the use of FXP ^[9]. By doing so, they would earn credits (typically 1:3 ratio) for uploading files as long as the file was considered to be appropriate and unique (not a dupe — hence the racing).

Through this culture and rewards system, files eventually would make their way to topsites all over the world in this decentralized nature. Much like Usenet, split-file or RAR archives were utilized in order to further enhance the racing culture.

Of course, due to the private and closed nature of this distribution network, it was difficult for many users to gain access to these topsites. Topsites are very much still in existence today.

IRC (90s-Present)

IRC has been around for a long time and has played quite a role in society, both in filesharing as well as politics. Many IRC clients feature a DCC (direct client to client) protocol which allows users to do exactly as the name implies.

Through DCC, and later with advancements and bots known as XDCC servers, filesharing took yet another turn. Distribution groups who were able to get their hands on releases were able to serve files to the masses using these XDCC servers, which were typically hosted anywhere from powerful machines, brute forced Windows NT computers, personal computers, and university computer labs.

XDCC is still quite popular and a quick search through Netsplit.de ^[10] shows many active channels across many active IRC networks still utilizing XDCC for distribution. Additionally, IRC is still widely used for its original purpose of chat as well as a bootstrap mechanism for filesharing mediums which sprouted later.

Hotline (90s)

For a brief period Hotline ^[11] was a very popular medium for sharing files. At first, Hotline was very mainstream with many mega corporations participating in the Hotline network. However, it quickly faded away due to many complications, including but not limited to the encrypting of source files on Hotline computers which essentially crippled the company.

Napster (Late 90s)

Napster ^[12] arguably brought MP3 and filesharing to the masses. There are very few netizens who haven't used or heard of Napster. The software operated as a peer to peer filesharing network strictly used for music. Napster's database, however, was centrally located, which eventually helped lead to its shutdown and subsequent demise. However, not before it helped to spread the idea of filesharing, in its entirety, to the masses.

Gnutella, eDonkey2000 and Kazaa (Early 2000)

The centralized nature of Napster gave way to a single point of failure – or single point of shutdown. As such, many gifted developers researched methods to avoid such complications. Gnutella ^[13], eDonkey2000 ^[14], and Kazaa ^[15] were different implementations which all did quite well in their heyday. While their protocols were all different, they were each very similar in that there was no central server. However, each protocol ended up "failing" as they were rooted in commercial (and corporate) interest – which ended up becoming an attack point.

Gnutella, originally created by the Nullsoft people, was once the most used network thanks to LimeWire. The LimeWire client was sued by the RIAA and shutdown in 2010, which turned Gnutella into a ghost network. The original eDonkey2000 from Jed McCaleb was toppled as well, but clones have kept the eDonkey network alive. The Kazaa team later created Skype ^[16], which is a widely used VoIP/IM platform.

DC++ and i2hub

DC++ ^[17] and i2hub ^[18] were popular methods of sharing files in closed-networks. Both were highly used within the university and college scene where students would share hub/server addresses with each other in order to share files at very high speeds within the local college

addresses with each other in order to share files at very high speeds within the local college networks. The advantages provided within these was that outside agencies and other various third parties could not access the content found within these networks.

However, the RIAA found a way into i2hub and was able to shut it down. DC++ is still in active development today, but is not as common or widespread as it once was.

BitTorrent (2001)

Bram Cohen created BitTorrent, which almost anyone with an Internet connection today has used, knowingly or not. BitTorrent essentially took on all of the greatest properties of its predecessors and packed them all into one, easy to use file sharing platform.

Taking on the concepts of breaking files into multiple chunks (Usenet, Topsites) as well as the decentralized peer-to-peer distribution mechanism (Napster, Gnutella, eDonkey2000, Kazaa), BitTorrent has catapulted into a mainstream filesharing mechanism which is fast, efficient, and difficult to stop.

Early versions of BitTorrent required centralized trackers to operate, but have later become able to utilize trackerless "torrents." [19]

Increasingly BitTorrent users have grown concerned with their privacy. Indexes such as YouHaveDownloaded.com have been able to maintain logs of every file downloaded by IP, which has raised significant awareness to whether it is safe to download files through BitTorrent. In addition, many ISPs have been known to cap speeds when detecting BitTorrent downloads.

As a result of these privacy concerns millions of BitTorrent users have signed up with Anonymous VPN services [20] to mask their IP-addresses when downloading files

Filelockers and Forums (2000 to Present)

In recent years Megaupload, Rapidshare, Hotfile and other file lockers became quite popular. These file lockers provided the simplest means of filesharing when compared to all of their predecessors. Files are simply uploaded to the file locker, and a URL is provided to the file which is download through HTTP/HTTPS.

Generally, the URLs are shared through forums. Due to the affiliate compensations some cyberlockers offer to file uploaders on a per-file based download count, many files are distributed in split-file or RAR archives much like in the days of topsites and Usenet. This is mainly due to for-profit reasons as opposed to cultural or technical reasons as seen in the scene (topsites) or on Usenet respectively.

However, governments as well as special interest groups including the RIAA and MPAA have targeted file lockers leading to widely publicized lawsuits, including the arrest and destruction [21] of Megaupload and Kim Dotcom.

Final Thoughts

Filesharing has come a long way, and with it, many industries have been born.

While it provides challenges to many of the big media conglomerates, it undoubtedly enriched the lives of many independent creators. Distribution is no longer something for the happy few, which shows as tens of thousands of artists share their work for free online every year.

Filesharing as a technology is good. Let's make sure it stays around so that we may continue to share our thoughts, ideas, and art in order to better ourselves, our communities, and our earth. Anyone who is against that must obviously dream of world destruction, or at the least, wish for human progress to stop.

About The Author

Andrew is a long-time advocate of privacy and the conservation of the personal realm. He served as the brand manager for an internationally recognized best-selling product prior to co-founding Private Internet Access [22]. Additionally, he co-founded Mt. Gox Live [23] which was acquired by Mt. Gox, the world's leading Bitcoin exchange, and created their official mobile application.

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