

Napster's Descendants; His Beyoncé, Her Beatles: A Primer on Trading

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KAZAA, Morpheus, LimeWire, BearShare, Grokster -- they may sound like heroes of a comic book superhero team, but they are all Internet file-sharing programs that provide membership in an online co-op of millions of digital traders.

A file-sharing system basically works like this: you download and install a file-sharing program like KaZaA, which allows you to search the Internet for specific material that somebody else's computer may have. When you find it, you can get a copy of the file. In exchange, you make a folder of your own files to be shared with other users. Because all of this trading is done directly between individuals, it is commonly referred to as peer-to-peer, or P2P, networking.

File sharing became a frequent activity and hot topic in 1999 with the arrival of Napster, a piece of software written by Shawn Fanning, then a computer science student. The prime stock in trade quickly became music, which with the advent of the MP3 format had become easier to compress into small digital files and exchange.

Although the files were kept on the computers of Napster's users, the system used a central index server to match up search requests and file locations. It was the use of this central server that ultimately made Napster legally vulnerable, and it was shut down in 2002 after litigation by the recording industry. inMusic 2013

Napster was not the only file-sharing program out there, and several others popped up to take its place. These programs, like LimeWire and BearShare (both work with the far-flung Gnutella file-sharing network), do not use a central server.

Instead, they rapidly pass along search queries from machine to machine along the network -- making it legally difficult to stop since there is no one computer in charge. What's more, some peer-to-peer programs now encrypt shared files to protect users.

The legal defense of most file-sharing networks is that even if some users trade bootleg copies of "Pirates of the Caribbean" rather than just their own creations or works in the public domain, it is the users who are liable for any copyright infringement, not the network.

Given the open nature of most file-sharing programs, users run some personal risk.

For the best user experience, most programs strongly encourage two-way sharing and request that you designate a folder of your own files to share with anybody else on the network. This shared folder is usually easy to set up, but there is a danger that you might accidentally share all the files on your hard drive, including confidential information. (You can turn off your shared folder in most programs, but that might hinder your ability to download from others.)

Some files shared across the network might be corrupted or carry viruses that can infect your computer. And to make money, many free file-sharing programs inconspicuously bundle in additional software called spyware and adware, which can track your Internet use and deliver advertisements based on that use.

While the battle over peer-to-peer networks continues, a growing number of online alternatives have emerged that operate within the pale of copyright, like Apple's iTunes Music Store and the Pressplay service, whose new owner is planning to reintroduce it this year under a new yet oddly familiar name: Napster 2.0.

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