
Napster clones turn their attention to academic e-books

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Abstract

This article discusses the effects of "Napster-like" clone programs on the future of academic e-books. This review will, first, catalogue the rise and fall of Napster and the development of clone programs that facilitate peer-to-peer file sharing; second, examine the main methods by which e-books are placed on the Web; third, discuss piracy and the subsequent legal issues of intellectual property. Finally, the concept of e-books in the world of academic publications will be analysed.

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Introduction

Napster was constructed around one simple concept: to allow members of a "community" to share computer files on the Web. The peer-to-peer (P2P) file-sharing concept allows a user to request a certain file, search listings of other community members and transfer the file through cyberspace. Napster shut its electronic doors in May 2002, after an intense legal battle in the USA. It has, however, left a lasting legacy. While music industry lawyers ponder the copyright in musical works, the 81 Napster clones such as XoloX, KaZaA and eDonkey are facilitating the transfer of music, DVDs, computer programs and e-books. The early skirmishes in the file-sharing wars have centred on music; will academic e-books become the next casualty?

Napster's history

There is a lesson about human nature that Napster's legacy will firmly write into Web history: people will freely steal content when given the opportunity. Napster provided, and people stole, quite a lot in fact. File swapping naturally causes anyone who has digital assets that can be stolen [to be] very nervous (Peek, 2001).

Napster, created by 19-year-old college dropout, Shawn Fanning, was constructed around one guiding premise: facilitate the sharing of computer files through the Internet. Napster's server accepted requests for certain MP3 (digital music) files, searched MP3 listings on other computers, and made the connection that assisted the transfer.

Napster opened its online doors in the summer of 1999; since then millions of MP3 files have migrated across the Web. Users suddenly no longer needed the music industry's middlemen: the packagers (companies such as Time Warner and Sony) and the promoters (companies like Virgin and Tower Records). The network grew exponentially, as friends told friends. In the computer world word of mouth is of immense importance and Napster was suddenly the Internet's hottest topic. As more and more people logged on, more and more music became available.

Napster's legacy: how are the mighty fallen!

The music companies were forced to respond and did so quickly, not by getting their own



product to market, but by suing Napster and similar upstart companies into the ground. Music companies say they plan to roll out a digital distribution system soon, but consumers are still waiting to see a new paradigm that they like (Godwin, 2001).

At the peak of its powers Napster provided as many as 1 billion music files. The recording industry reacted, not by providing its own version of Napster but through the courts. The Recording Industry Association of America (RIAA) launched legal proceedings in December 1999 (King, 2002). It did not, however, have the expected effect; word of mouth and a high profile court case combined to turn Napster into a global phenomenon.

Napster, for a while at least, held the promise of being something special: Fanning injected youthful confidence and a radically different platform from the computer industry. However, the free exchange of intellectual property belonging to others could not last long. The music industry brought in its heavy legal artillery and placed a bull's-eye squarely on Napster.

Companies on the edge of copyright legality have felt safe since 1984, when the Supreme Court in the USA ruled that people could record television and movies in their homes. Other storage devices are afforded similar protection from legal proceedings.

Napster changed that feeling, at least in the US courts. The RIAA successfully argued that laws governing analogue taping devices, such as video-cassette recorders (VCRs) should not apply in a digital age, when copies of music or movies are perfect. Ninth Circuit US District Judge Marilyn Hall Patel produced a brutal verdict in July 2000, in which she called Napster "a monster" and issued the first of two injunctions that proved to be the beginning of the end (Osborn, 2001).

The legal battle became drawn out and complex but the company that developed one of the most innovative Internet programs of the last ten years came to an end when founder Shawn Fanning and CEO Konrad Hilbers abruptly resigned in May 2002. Both parties in the case of *The Recording Industry Association of America (RIAA) v. Napster* have put their respective arguments on the Internet. (For the RIAA: www.riaa.org and for Napster: www.gnutellanews.com)

Millions of users are still able to trade thousands of compressed digital music files in MP3 format as clones carry on Napster's work. The second-generation file-trading services allow users to swap all types of files, something they did not even know they could do just four years ago. To date there are 81 commercial quality download programs like KaZaA, XoloX, Gnutella and iMesh available to the public. The popularity of these P2P programs has been staggering: KaZaA has been downloaded over 185 million times, averaging two million downloads per week in January 2003. Napster may have been shut down through legal channels but other more sophisticated programs have quickly evolved and established themselves.

Napster clones have fully decentralised the file-sharing world and this will affect all forms of intellectual pursuits. The film industry, for example, is already worried about DVDs travelling on high-speed broadband lines. The publishing industry shares this concern over the fate of e-books.

E-book terminology

As with all new areas of technology, e-books and the peer-to-peer file-sharing network uses new terminology that is not yet fully standardised throughout the literature. The main confusion often results in the definition of an "e-book"; for the purpose of this review, I will follow the terminology used by Lynch:

A [e-book] is just a large structured collection of bits that can be transported on CD-ROM or other storage media or delivered over a network connection ... [and is] ... designed to be viewed on some combination of hardware and software ranging from dumb terminals to Web browsers, on personal computers to the new book-reading appliances (Lynch, 2001).

The issue of "academic" e-books further confuses the terminology; academic is used in this paper to confer the idea that the material is similar to that found in student textbooks that confer knowledge, e.g. university textbooks and instruction manuals. Academic books are very rarely bought or read for fun and the easiest and cheapest way of accessing the e-book versions is on a normal computer screen. This type of e-book does not need the specialised e-book readers that have recently come on to the market.

E-books and publishing houses

Book publishers ... are convinced they won't be spared and, unlike the music industry, which spent much of the 1990s in a defensive crouch, they are busily preparing for the inevitable. From Random House to McGraw-Hill to Simon & Schuster, publishing houses are racing to digitise their valuable back lists (Lynch, 2001).

At present books can be turned into digital form in two main ways. The first is to scan the book on to a computer. The second is to crack the protection of a commercial e-book, thus allowing it to be posted on a P2P network. As there is no precedent for complete copyright security in any media, publishing houses look forward to an uncertain future. Microsoft's vice president of technology and development, Nick Brass, named this period the Model-T era of the e-book (Boynton, 2000). For the academic e-book this could be an era of digital theft.

The first copy of a book is the most important, whether it is made by cracking the protection on a commercial e-book or scanning a conventional paper-based book. Once the first copy is made it can be subsequently distributed by the peer-to-peer file-sharing system.

Scanning e-books

While publishers have been pondering the prospect of thousands of users trading "cracked" commercial works over the Internet, the book pirates have set sail in a different direction. They have side-stepped commercial e-books, choosing to scan the text of traditional paper editions and make the results available on the Internet, often through Napster-like file-sharing devices (Rawlins, 1998).

A recent report from Envisional (www.envisional.com/press3.html), a UK digital rights management company, highlights that online trading of bestsellers is accelerating even as the industry's own efforts to get a digital product out of the door are slowing to a crawl. In an exhaustive August 2001 survey, Envisional claimed that as many as 7,300 paper editions of popular books have been scanned and made available on the Internet through Napster clones. Among the most commonly traded books are titles from bestselling authors such as Stephen King,

Tom Clancy, J.K. Rowling and J.R.R. Tolkien (Godwin, 2001).

In the short term, increasing piracy of scanner-produced e-books seems a certainty. Doorstop tomes can be scanned on to files ranging from two to three megabytes in size. The complete works of Isaac Asimov, comprising 25 books, fits into 8MB, that is the approximate size of one MP3 music file. To give an idea of the download speeds, Smart Computing tested the two main ways of downloading files from the Internet. Using a standard 56Kbps (kilobits per second) modem and a dial-up Internet connection, it took an average of 40 minutes to download a 4MB file. Using an Ethernet card and a T3 line (one of the fastest broadband connections), it took five minutes to download a 4MB file.

Publishing houses do, however, have a certain amount of breathing-room because the reading public has not yet shown any deep interest in obtaining books in digital form from the Net (Godwin, 2001).

Cracking the code of commercial e-books

If e-books take off, the number of titles available online could multiply dramatically. All it would entail would be for some hacker to crack the code on a new e-book, put the text on a peer-to-peer service and launch it widely into cyberspace. A valid objection UK trade publishers ... have against e-books is lack of security. There is huge scepticism that this can be resolved satisfactorily (Curtis, 2002).

On 28 August 2001 a federal grand jury in the USA indicted the Russian company Elcomsoft and programmer Dmitry Sklyarov on charges of trafficking and conspiracy to traffic in a copyright circumvention device. ElcomSoft employees allegedly violated US law when, in June 2001, they began selling a program that disabled the encryption of Adobe e-book documents. The charges were brought for violations of provisions of the Digital Millennium Copyright Act (DMCA). This Act prohibits companies from creating and selling technologies that circumvent protections placed on copyrighted works.

Vladimir Katalov, managing director of Elcomsoft, released methods of breaking security features on an Adobe e-book library system (Rosie, 2001). The e-book library is designed to be a secure repository for e-books

and allows users to borrow titles for a specified number of days. Katalov identified a method of borrowing all the books in the library for an unlimited time period.

The acquittal, announced in a federal district court in California, brought to a close the first criminal trial of a company accused of violating the DMCA. By favouring ElcomSoft, the jury showed a reluctance to prosecute a company or programmer for creating a program that others might use to commit acts of infringement (Glasner, 2002).

Piracy control methods

In spite of the disillusionment some publishers now feel about whether there will be a significant market for e-books in the near future, the American Association of Publishers is adamant about the need to advance e-book anti-piracy technology (Godwin, 2001).

Two methods of piracy control are available: first, there is the legal code, or set of laws, that could end up legalising file sharing or making it a criminal activity. Second, computer programs that encrypt files so they can never be shared can be used as a part of a digital rights management program. Both still seem to be inherently flawed, as, to date, there is no precedent for absolute security in any digital media.

The encryption method is a complex and difficult task; as soon as one programmer creates a new software encryption device, the programmer's wits are matched against the countless users of the Internet who can, by conversing in chat rooms, work together to crack the code. A few days after books are released hackers break the code and post a copy on the Internet (Weber, 2000).

Digital rights management

Encryption is just one of the protection methods forming the area of digital rights management. During the dot.com boom new start-up companies offered digital rights management that focused on security and encryption as a means of preventing unauthorised copying (Iannella, 2001). Digital rights management looked for a time to herald a new way of protecting content; however, many of the digital rights management companies are disappearing from sight:

In the last eight months, a flock of content protection companies, including Buffalo, NY-based Reciprocal, San Jose, CA-based Vyou.com, Maynard, MA-based Digital Goods and Mountain View, CA-based Preview Systems, have been shut down or sold. InterTrust Technologies of Santa Clara, CA, the company that founded the digital rights management industry, has slashed its head count by 40 per cent (Roush, 2002).

Digital rights management has a place in the prevention of digital piracy but at present it seems unable to stop effectively unauthorised usage.

What is the law relating to this area?

There is a legal dichotomy between real property and intangible property. Different areas of the law deal with stealing a book from a bookshop and downloading a digital book. The remedies are also markedly different. Theft can result in a prison sentence; copyright infringement for personal (non-commercial) use is often overlooked.

In the UK the Theft Act (1968) deals with the theft of tangible property. Section 1 defines theft as the:

... dishonest appropriation of property belonging to another with the intention of permanently depriving the other of it.

While section 4 outlines that property includes "other intangible property", it has been held in a number of cases that information is not intangible property. In *Oxford v. Moss 68 Cr App R 183* (1979) a Liverpool University undergraduate obtained the proofs of an examination paper before the exam. After reading the exam paper, the student returned the paper but retained the information. It was held that this did not amount to theft.

The legal area of intellectual property protects intangible property; the area that is most pertinent to the issues involved in the peer-to-peer sharing of e-books is copyright. (Bentley and Sherman (2001) give an excellent introduction to intellectual property law.)

What is copyright?

Copyright is the term used to describe the area of intellectual property that relates to the

creation and use of a range of cultural goods such as books, songs, films and computer programs (Goldstein, 1990). It is important to remember that books, regardless of whether they are in printed or electronic form, are protectable under copyright laws in the UK. The written word is one of the original creations that copyright law was designed to protect.

The intangible property protected by copyright law is distinctive in that it arises automatically and usually for the benefit of the author. Various rights are conferred on the owner of copyright, including the right to copy the work. The rights given to a copyright owner last for a considerable time: in many cases for 70 years after the death of the author of the work. The basic framework of UK copyright law is largely to be found in the Copyright, Designs and Patents Act 1988 as amended, most significantly to implement European community Directives (Lim, 2002).

Protection against unauthorised use in a particular country depends on the national laws of that country. Countries do offer protection to foreign works under certain circumstances and international copyright treaties have simplified these conditions. The two key 1996 WIPO treaties dealing with the area of Internet copyright law are the WIPO Copyright Treaty (WCT) and the WIPO Performances and Phonograms Treaty (WPPT) (Ficsor, 2002).

Copyright laws are clear and well established both in the USA and in Europe. The US legal system seems likely to back the music industry. Judge Patel produced a verdict in July 2000, which all but shut Napster down. In the meantime, a federal judge in New York slammed a crippling fine on MP3.com, a company that was trying to operate within the rules of copyright. Judge Jed Rakoff awarded Universal Music Group damages of \$25,000 for each copyrighted CD stored on the popular My.MP3.com service, a total that could reach \$250 million (Beet, 2002).

Although US copyright infringement suits have met with some success, the Dutch music rights organisation, Buma Stemra, suffered a setback in its suit against KaZaA when a Dutch appeals court overturned a lower court decision and allowed KaZaA to continue to distribute its software program. The Dutch legislation relied largely on a US supreme

court case, *Sony Corp. of America v. University City Studios Inc.* 464 US 417 (1984), which defended manufacturers of video-cassette recorders against liability for contributory infringement:

Music lovers and film buffs will continue to be allowed to make private copies of their favourite songs or movies after the European Parliament yesterday agreed Europe-wide Internet piracy legislation ... MEPs [Ministers of the European Parliament] approved a copyright directive that will ensure European clones of song-swapping Web site Napster can be swiftly shut down through legal action (Osborn, 2001).

This might prove to be problematic; the 81 Napster clones presently available are easily modified and have been downloaded on to millions of computers already. Also the international dimension of the Internet complicates the enforcement and prosecution issues. A case of closing the Web site door after the e-horse has bolted. The technology driving this area is unlikely to go away or become any slower, and legal methods of piracy control have proved to be generally ineffective. The social precedent is already in place: the law proved to be ineffective when dealing with copied videos and cassettes in the 1970s and 1980s (Harris, 1984) and it looks to be struggling to control the peer-to-peer file-sharing network today. The anonymity of the pirate users and the sheer scale of the piracy is seen by many commentators to preclude any form of effective regulation.

The Joint Information System Committee has a Web site that deals with some of the legal issues involved with the e-book industry; this site can be accessed at www.jisc.ac.uk/dner/ebooks/strategy1.html

Academic e-books

In February 2001, HarperCollins with its e-imprint PerfectBound was the first major [publisher] in the UK to release e-titles. Penguin and Warner Books (UK) followed in the autumn. PerfectBound initially priced books at a 20 per cent discount to the hardcover. Their most successful e-title sold in the low hundreds. Compared with around 30 million paperbacks HarperCollins sells annually, PerfectBound barely appears on the HarperCollins sales graph (Guthrie, 2002).

E-books, for all the hype, are still awkward and unappealing in any format. No one seems to want to read anything much longer than a few paragraphs on a computer screen for

pleasure (Epstein, 2001). Most of the discussion in the literature has focused on the e-book novel; academic books, however, may pose a different problem.

Academic textbooks are generally not the kind of books bought to read for pleasure; they are expensive and typically have a short shelf life. They make ideal commercial e-books; they also make excellent targets for e-book pirates. Most students have access to the Internet, a conventional library and a scanner; scanning "home-made" academic e-books is not difficult. UK publishers like Cavendish (www.cavendishpublishing.com) command large revenues from the sale of academic textbooks and have a lot to lose if scanner piracy increases. Cavendish uses the Sklyarov-cracked Adobe technologies for access to its library of e-books; new protection methods have been employed by Cavendish and Adobe; however, these methods are already under scrutiny on certain Web sites.

University libraries across the globe are beginning to amass a sizeable collection of digital materials that include e-books (Jantz, 2001). Digital publishers of e-books are looking to libraries and their patrons to add to sales and to help offset the threat of piracy (Reid, 2002). If a library pays a fee to a publishing house and then allows the student body access, piracy may be reduced, as the student can lawfully download the book. The new frontier of academic e-books and the subsequent related digital media provide a unique opportunity to libraries to become fully-fledged multimedia learning hubs. In this situation everybody wins, except the conventional, paper-based academic book.

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