

A GIFT OF FIRE

*Social, Legal, and Ethical Issues
for Computing Technology*

Fifth Edition

Chapter 4: Intellectual Property



SARA BAASE
TIMOTHY M. HENRY

Copyright © 2018, 2013, 2008 Pearson
Education, Inc. All Rights Reserved

Based on slides prepared by Cyndi Chie,
Sarah Frye and Sharon Gray.
Fifth edition updated by Timothy Henry

4.1 Principles and Laws

- 4.1.1 What is Intellectual Property?
- 4.1.2 Challenges of New Technologies
- 4.1.3 A Bit of History
- 4.1.4 The Fair Use Doctrine
- 4.1.5 Ethical Arguments about Copying

4.1.1 What is Intellectual Property?

- Copyright: legal concept that defines rights to certain kinds of intellectual property
 - It covers the intangible creative work, not the physical manifestation
 - Includes: books, articles, plays, songs (music and lyrics), works of art, movies, software, and videos.
 - Does not include: Facts, ideas, concepts, processes, and methods of operation
- Patent: Protects inventions, including software-based inventions

4.1.1 What is Intellectual Property

- Value of the work?
 - When we buy a movie, for example, we buy the right watch it; not the right to play it in a public venue or to charge a fee
 - Value comes from the creativity, ideas, research, skills, labor, and other nonmaterial efforts and attributes
 - We would be reluctant to make the effort to buy or produce physical things if anyone else could just take them away
 - So, copyright has *individual* and *social* benefits:
 - Individual: Protects rights of individual creators
 - Social: promotes creation

4.1.1 What is Intellectual Property?

- US Copyright Law (Title 17 of the US Code) gives the following exclusive rights to copyright holders
 - To make copies
 - To produce derivative works, such as translations into other languages or movies based on books
 - To distribute copies
 - To perform the work in public (e.g. music, plays)
 - To display the work in public (e.g. artwork, movies, computer games, video on a Web site)

4.1.1 What is Intellectual Property

- Public Domain: Copyright is for a limited amount of time
 - The lifetime of the author + 70 years
 - After this, the work will go into the public domain and anyone can freely copy and use it.

4.1.2 Challenges of New Technology

- Internet and digital technologies empowered us all to be publishers
- Examples of new technology challenges to copyright:
 - Copying software: *Warez* and *software piracy*
 - Advent of the MP3 in mid-90s
 - Ubiquitous availability of the copied and pirated property

4.1.3 History of Copyright law

- 1790 first copyright law passed: covered books, maps, and charts for 14 years. Was later extended to cover photography, sound recordings, and movies.
- Copyright Act of 1909 defined an unauthorized copy as a form that could be seen and read visually
 - How does being "seen and read visually" complicate matters?
- 1976 and 1980 copyright law revised to include software and databases that exhibit "authorship" (original expression of ideas); this law included the "Fair Use Doctrine"
- 1982 high-volume copying became a felony
- 1992 making multiple copies for commercial advantage and private gain became a felony

4.1.4 Fair Use Doctrine: The What

- The Fair Use Doctrine allows uses of copyrighted material that contribute to the creation of new work (such as quoting part of a work in a review) and uses that are not likely to deprive authors or publishers of income for their work.
- Uses do not require permissions
- US copyright law of 1976 explicitly included it after judicial decisions had a similar notion
- Did not address issues related to the web when first envisioned

4.1.4 Fair Use Doctrine: the How

- Four factors to consider in determining Fair Use of material:
 - 1) Purpose and nature of use – commercial (less likely) or nonprofit purposes
 - 2) Nature of the copyrighted work
 - 3) Amount and significance of portion used
 - 4) Effect of use on potential market or value of the copyright work (will it reduce sales of work?)
- No single factor alone can determine fair use
- Not all factors given equal weight; it varies by circumstance

4.1.5 Ethical Arguments about Copying

- What is copying? Is it the same as stealing?
- Copying or distributing a song or computer program does not decrease the use and enjoyment any other person gets from his or her copy
- What are arguments in support of personal copying or posting content on the Web without authorization?

4.2 Significant Fair Use Cases and Precedents

- *4.2.1 Sony v. Universal City Studios (1984)*
 - Supreme Court decided that the makers of a device with legitimate uses should not be penalized because some people may use it to infringe on copyright
 - Supreme Court decided copying movies for later viewing was fair use
 - Arguments against fair use
 - People copied the entire work
 - Movies are creative, not factual
 - Arguments for fair use
 - The copy was for private, noncommercial use and generally was not kept after viewing
 - The movie studios could not demonstrate that they suffered any harm
 - The studios had received a substantial fee for broadcasting movies on TV, and the fee depends on having a large audience who view for free

4.2 Significant Fair Use Cases and Precedents

- 4.2.2 Reverse engineering: game machines
 - Sega Enterprises Ltd. v. Accolade Inc. (1992)
 - Atari Games v. Nintendo (1992)
 - Sony Computer Entertainment, Inc. v. Connectix Corporation (2000)
 - Courts ruled that reverse engineering does not violate copyright if the intention is to make new creative works (video games), not copy the original work (the game systems)

4.2 Significant Fair Use Cases and Precedents

- 4.2.3 Sharing Music: The Napster Case
 - Napster's arguments for fair use
 - The Sony decision allowed for entertainment use to be considered fair use
 - Did not hurt industry sales because users sampled the music on Napster and bought the CD if they liked it
 - RIAA's (Recording Industry Association of America) arguments against fair use
 - "Personal" meant very limited use, not trading with thousands of strangers
 - Songs and music are creative works and users were copying whole songs
 - Claimed Napster severely hurt sales
 - Court ruled sharing music via copied MP3 files violated copyright

4.2 Significant Fair Use Cases and Precedents

- 4.2.3 Sharing Music: The Napster Case
 - Was Napster responsible for the actions of its users?
 - Napster's arguments
 - It was the same as a search engine, which is protected under the DMCA
 - They did not store any of the MP3 files
 - Their technology had substantial legitimate uses
 - RIAA's arguments
 - Companies are required to make an effort to prevent copyright violations and Napster did not take sufficient steps
 - Napster was not a device or new technology and the RIAA was not seeking to ban the technology
 - Court ruled Napster liable because they had the right and ability to supervise the system, including copyright infringing activities

4.2 Significant Fair Use Cases and Precedents

- 4.2.3 File sharing: MGM v. Grokster
 - Grokster, Gnutella, Morpheus, Kazaa, and others provided peer-to-peer (P2P) file sharing services
 - The companies did not provide a central service or lists of songs
 - P2P file transfer programs have legitimate uses
 - Lower Courts ruled that P2P does have legitimate uses
 - Supreme Court ruled that intellectual property owners could sue the companies for encouraging copyright infringement

4.2 Significant Fair Use Cases and Precedents

- 4.2.4 User and Programmer Interfaces
 - “look and feel”
 - Refers to features such as pull-down menus, windows, icons, finger taps and movements, and the specific ways one uses these to select or initiate actions.
 - “workalike” programs
 - Two programs that have similar user interfaces
 - “Look and feel” involves significant creative effort on the part of designers
 - The current trend in court cases is *not* to protect these kinds of interface features with copyright.

4.3 Responses to Copyright Infringement

- 4.3.1 Usually the initial reaction from content industries is defensive and aggressive response such as lawsuits and lobbying for expansion of copyright laws

4.3 Responses to Copyright Infringement

- 4.3.1 Ideas about protecting copyright within technology itself
 - Expiration dates within the software
 - Dongles (a device that must be plugged into a computer port)
 - Copy protection that prevents copying
 - Activation or registration codes

4.3 Responses to Copyright Infringement

- 4.3.1 Law enforcement and Banning, Suing, and Taxing
 - Court orders to shutdown bulletin boards and websites
 - Ban or delay technology via lawsuits
 - CD-recording devices
 - DVD players
 - Portable MP3 players
 - Require that new technology include copyright protections
 - Tax digital media to compensate the industry for expected losses

4.3 Responses to Copyright Infringement

- Digital Rights Management (DRM) technologies
 - A collection of techniques that control access to and uses of intellectual property in digital form.
 - DRM is different from banning, suing, and taxing because it does not interfere with other people or businesses.
- In 1908, the Supreme court established the principle that the copyright owner has the right only to the “first sale” of a copy.
- DRM, however, enables the content seller to prevent lending, selling, renting, or giving away a purchased copy
- Major music companies in 2007-2009 started to sell music without DRM and Apple eliminated DRM from its iTunes store for music.

4.3.2 The Digital Millennium Copyright Act

- Two significant parts of the DMCA
 - Anticircumvention and Safe Harbor
- Anticircumvention prohibits circumventing technological access controls and copy-prevention systems
- Safe Harbor provisions protect websites from lawsuits for copyright infringement by users of the site

4.3.2 DMCA: Anticircumvention

- Circumventing DRM with technologies such as DeCSS is illegal under the DMCA
- It has uses that are both illegal and legal (legal, such as making personal backup copies of DVDs)
- Protestors started to publish DeCSS descriptions as part of haiku, barcode, short movies, a song, a computer game, and art—demonstrating how hard it is to distinguish between forms of expression.
- U.S. courts eventually allowed publishing of DeCSS, but prohibited manufacturers of DVD players from including it in their products

4.3.2 DMCA: Anticircumvention

- Freedom of speech issues:
 - Does the Anticircumvention part of the DMCA have a "chilling effect" on research?
 - Certain researchers have been sued under the DMCA for publishing descriptions of security problems with different types of software
 - See pp 217-18 for examples

4.3.3 DMCA: Safe Harbor

- Safe Harbor provision is meant to protect sites that allow users to post content on their own
- The Content Industries issue "take down" notices per the DMCA
- As long as sites like YouTube and MySpace comply with take down notices they are not in violation
 - They must make a “good faith effort” to take down material protected by copyright
- Some take down notices may violate fair use, some have been issued against small portions of video being used for educational purposes

4.3.3 DMCA: Safe Harbor

Evolving Business Models

- Organizations set up to collect and distribute royalty fees (e.g. the Copyright Clearance Center), users don't have to search out individual copyright holders
- Sites such as iTunes and the new Napster provide legal means for obtaining inexpensive music and generate revenue for the industry and artists
- Revenue sharing allows content-sharing sites to enable the posting of content and share their ad revenues with content owners in compensation

4.3.3 DMCA: Safe Harbor

- What does not work
 - Zediva, a small startup in 2011, bought DVDs and rented the content (through streaming, not the physical DVD) to customers. Court ordered Zediva to shut down.
 - Pirate Bay
 - Megaupload

4.4 Search Engines and Online Libraries

- Google News
 - Google has been sued several times for caching websites and displaying them in the results of a search
 - Does this practice violate Fair Use?
 - Courts have argued that it does not
 - Google negotiated licensing agreements with news services to copy and display headlines, excerpts, and photos.

4.4 Search Engines and Online Libraries: Books

- Project Gutenberg: makes primary use of Public Domain literature so that it is available to the public online
- Google books
 - *Authors Guild et al. v. Google, Inc. 2005* (ultimately decided in 2016)
 - Judge Denny Chin ruled that Google's Library Project was Fair use
 - Chin cited a number of powerful tools that increase access to information, help researchers and readers find relevant books, and enable language researchers to analyze history and use of language
 - Authors Guild pointed out that the scale of Google's copying was unprecedented and that Google uses the content of the books to improve its search results, translations, and language analysis—thus contributing to Google's commercial success.

4.5 Free Software

4.5.1 What is free software?

- Free software is an idea advocated and supported by a large, loose-knit group of computer programmers who allow people to copy, use, and modify their software
- Free means freedom of use, not necessarily lack of cost
- Open source - software distributed or made public in source code (readable and modifiable)
- Concept of *copyleft*

4.5 Free Software

- 4.5.1 Should all software be free? Things to consider:
- Would there be sufficient incentives to produce the huge quantity of consumer software available now?
- Would the current funding methods for free software be sufficient to support all software development?
- Should software be covered under copyright law?
- Concepts such as copyleft and the GNU Public License provide alternatives to proprietary software within today's current legal framework

4.6 Patents for Software Inventions

4.6.1 Patent decisions, confusion, and consequences

- Patents protect inventions by giving the inventor a monopoly for a specified time period (currently 20 years)
- Laws of nature and mathematical formulas cannot be patented.
- Obvious inventions or methods cannot be patented.

4.6 Patents for Software Inventions

- 4.6.1 Patent decisions, confusion, and consequences
- Examples of confusing and controversial cases on pp 231-32
- Sometimes patent firms will purchase thousands of patents for the purpose of making money off those who violate
 - One firm had an estimated 30,000 patents and collected close to \$2 billions in license fees
 - There are legitimate and illegitimate ways in which these firms are run

4.6 Patents for Software Inventions

4.6.2 To patent or not?

- In favor of software patents
 - Reward inventors for their creative work
 - Encourage inventors to disclose their inventions so others can build upon them
 - Encourage innovation

4.6 Patents for Software Inventions

4.6.2 To patent or not?

- Against software patents
 - Patents can stifle innovation, rather than encourage it.
 - Cost of lawyers to research patents and risk of being sued discourage small companies from attempting to develop and market new innovations.
 - It is difficult to determine what is truly original and distinguish a patentable innovation from one that is not.