

CS 4001: Computing, Society & Professionalism

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Week 8: Intellectual Property
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Topics for Today

- Introduction
- Intellectual property rights
- Protecting intellectual property
- Fair use
- New restrictions on use



Introduction and Intellectual Property

Information Technology Changing Intellectual Property Landscape

- Value of intellectual properties much greater than value of media
 - Creating first copy is costly
 - Duplicates cost almost nothing
- Illegal copying pervasive
 - Internet allows copies to spread quickly and widely
- In light of advances in information technology, how should we treat intellectual property?

What is Intellectual Property?

- Intellectual property: any unique product of the human intellect that has commercial value
 - Books, songs, movies
 - Paintings, drawings
 - Inventions, chemical formulas, computer programs
- Intellectual property \neq physical manifestation
- Does right to own property extend to intellectual property?

Property Rights

- Locke: *The Second Treatise of Government*
- People have a right...
 - to property in their own person
 - to their own labor
 - to things which they remove from Nature through their labor
- As long as...
 - nobody claims more property than they can use
 - after someone removes something from common state, there is plenty left over

Expanding the Argument to Intellectual Property

- Writing a play akin to making a belt buckle
- Belt buckle
 - Mine ore
 - Smelt it down
 - Cast it
- Writing a play
 - “Mine” words from English language
 - “Smelt” them into prose
 - “Cast” them into a complete play

Analogy is Imperfect: Class Discussion

Scenario A, Act 1

After a day of rehearsals at the Globe Theater, William Shakespeare decides to have supper at a pub across the street. The pub is full of gossip about royal intrigue in Denmark. After his second pint of beer, Shakespeare is visited by the muse, and in an astounding burst of energy, he writes Hamlet in one fell swoop.

Analogy is Imperfect: Class Discussion

Scenario A, Act 1

After a day of rehearsals at the Globe Theater, William Shakespeare decides to have supper at a pub across the street. The pub is full of gossip about royal intrigue in Denmark. After his second pint of beer, Shakespeare is visited by the muse, and in an astounding burst of energy, he writes Hamlet in one fell swoop.

Scenario A, Act 2

On the very same night, Ben Jonson, at a pub on the opposite side of London, hears the same gossip, is struck by the same muse, and writes Hamlet – exactly the same play.

Analogy is Imperfect: Class Discussion

Scenario B

One evening Shakespeare stays up all night writing Hamlet in a pub. He returns to Globe Theater next morning, but carelessly leaves his writing in the pub. Jonson stops by for breakfast the next morning and finds the copy of Hamlet. He transcribes and copies it, and walks out of the door with it in his possession, leaving the original copy where it was.

Benefits of Intellectual Property

- Some people are altruistic; some are not
- Allure of wealth can be an incentive for speculative work
- Authors of U.S. Constitution recognized benefits to *limited* intellectual property protection

Limits to Intellectual Property Protection

- Giving creators rights to their inventions stimulates creativity
- Society benefits most when inventions in public domain
- Congress has struck compromise by giving authors and inventors rights for a limited time

Prices Fall When Works Become Public Domain

<i>Artist</i>	<i>Work</i>	<i>Previous Rental Fee</i>	<i>Year Became Public Domain</i>	<i>Purchase Price</i>
Ravel	Daphnis et Chloe Suite no. 1	\$450.00	1987	\$155.00
Ravel	Mother Goose Suite	540.00	1988	70.00
Ravel	Daphnis et Chloe Suite no. 2	540.00	1989	265.00
Griffes	The White Peacock	335.00	1993	42.00
Puccini	O Mio Babbino Caro	252.00	1994	26.00
Respighi	Fountains of Rome	441.00	1994	140.00
Ravel	Le Tombeau de Couperin	510.00	1995	86.00
Respighi	Ancient Aires and Dances Suite no. 1	441.00	1996	85.00
Elgar	Cello Concerto	550.00	1997	140.00
Holst	The Planets	815.00	1997	300.00
Ravel	Alborada Del Gracioso	360.00	1999	105.00



Protecting Intellectual Property

Trade Secret

- Confidential piece of intellectual property that gives company a competitive advantage
- Never expires
- Not appropriate for all intellectual properties
- Reverse engineering allowed
- May be compromised when employees leave firm

Trademark, Service Mark

- Trademark: Identifies goods
- Service mark: Identifies services
- Company can establish a “brand name”
- Does not expire
- If brand name becomes common noun, trademark may be lost
- Companies advertise to protect their trademarks
- Companies also protect trademarks by contacting those who misuse them



If a trademark is misused it could come undone.

If you didn't know zipper was a trademark, don't worry, it's not. But it used to be. It was lost because people misused the name. And the same could happen to ours, Xerox. Please help us ensure it doesn't. Use Xerox only as an adjective to identify our products and services, such as Xerox copiers, not a verb, "to Xerox," or a noun, "Xeroxes." Something to keep in mind that will help us keep it together.

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Patent

- A public document that provides detailed description of invention
- Provides owner with exclusive right to the invention
- Owner can prevent others from making, using, or selling invention for 20 years

Licensing Patents

- Microsoft invented a software technology called ClearType that improves the clarity of text in LCD/LED monitors.
- It is protected by 10 patents.
- In 2003 Microsoft started to license it to other companies with a certain royalty rate.

Copyright

- Provides owner of an original work five rights
 - Reproduction
 - Distribution
 - Public display
 - Public performance
 - Production of derivative works
- Copyright-related industries represent 6% of U.S. gross domestic product (> \$900 billion/yr)
- Copyright protection has expanded greatly since 1790

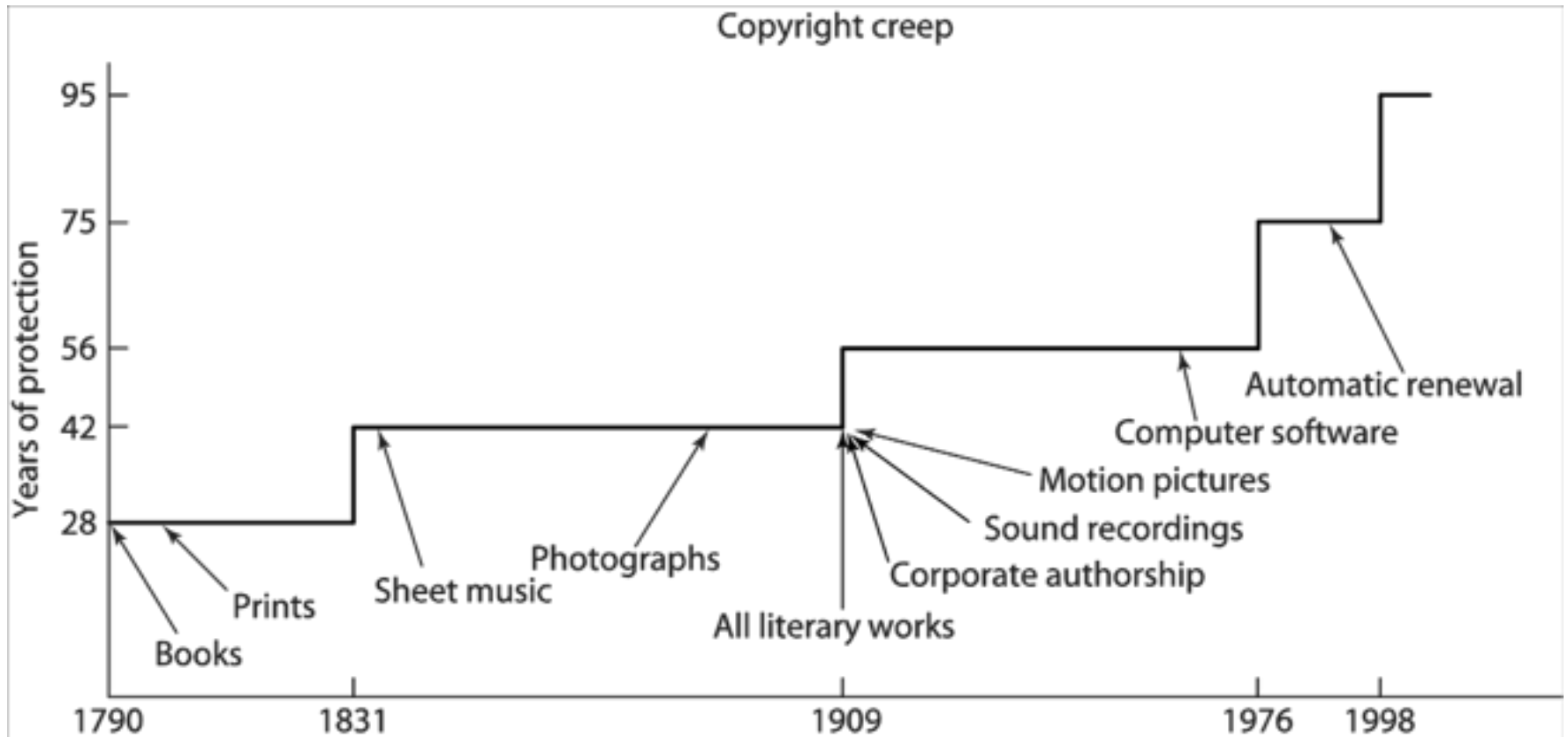


Class Activity 1

Copyright Creep

- Since 1790, protection for books extended from 28 years to 95 years or more
- Some say latest extension done to prevent Disney characters from becoming public domain
- Group of petitioners challenged the Copyright Term Extension Act of 1998, arguing Congress exceeded Constitutional power
- U.S. Supreme Court ruling
 - CTEA does not create perpetual copyrights
 - CTEA is constitutional

Copyright Creep



Key Court Cases and Legislation

- Davey Jones Locker
 - Richard Kenadek ran a computer bulletin board system.
 - Subscribers paid \$99/year to access the BBS which contained copies of more than 200 commercial programs.
 - In 1994 Kenadek was indicted for infringing on the copyrights of the owners of the software
 - He pleaded guilty
- No Electronic Theft Act
 - MIT student David LaMachia posted copyrighted software on a public bulletin board in 1994. According to prosecutors BBS users downloaded million dollars' worth of software in two months.
 - Charges were dropped as LaMachia had not profited from actions.
 - This led to the No Electronic Theft Act of 1997 which made it a criminal offense to simply reproduce or distribute more than a thousand dollars' worth of copyrighted material in a six month period.

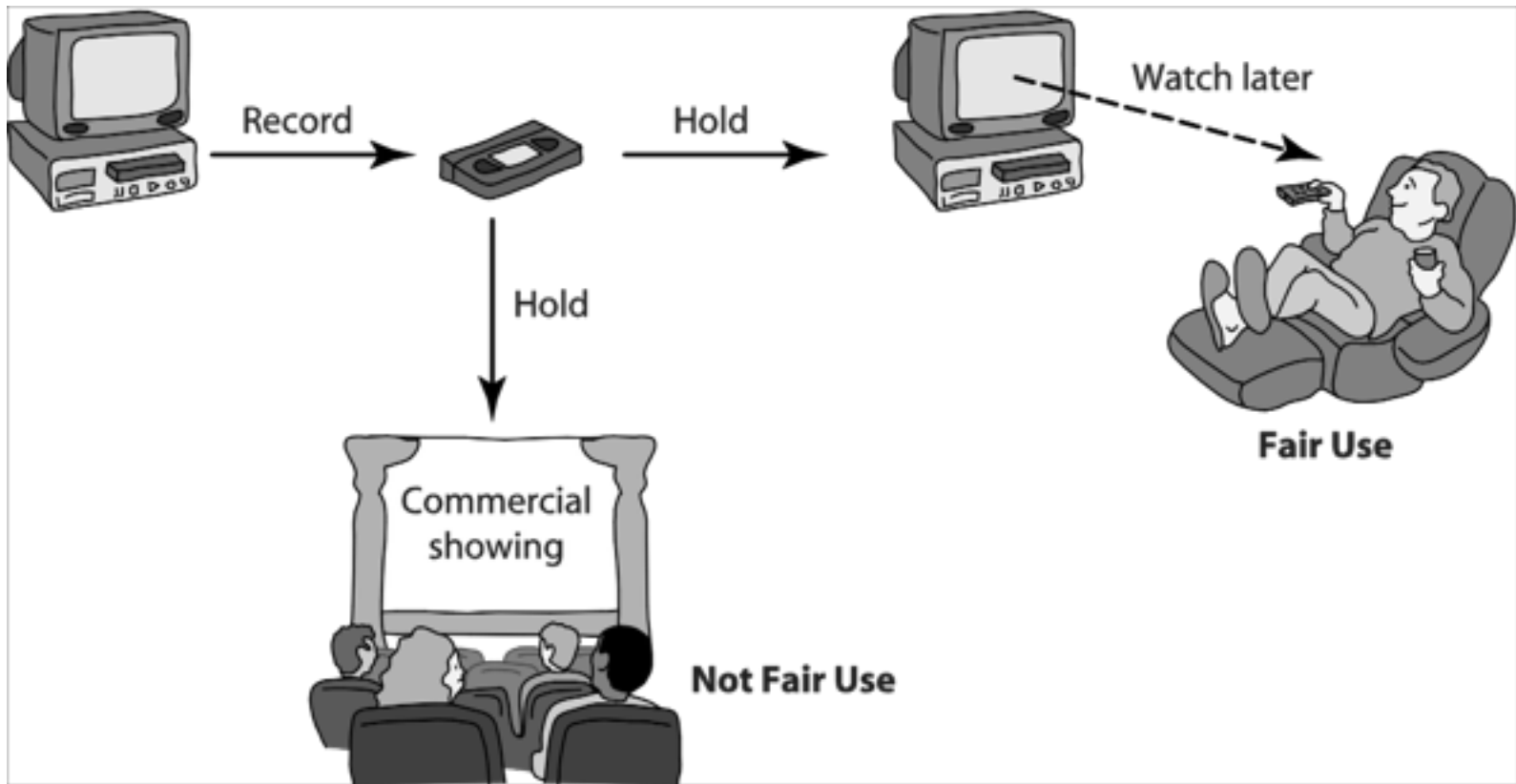


Fair Use

Fair Use Concept

- Sometimes legal to reproduce a copyrighted work without permission
- Courts consider four factors
 - Purpose and character of use
 - Nature of work
 - Amount of work being copied
 - Affect on market for work

Time Shifting: Class Discussion



Sony Versus Universal Studios

- Sony introduced Betamax VCR (1975)
- People started time shifting TV shows
- Movie studios sued Sony for copyright infringements
- U.S. Supreme Court ruled (5-4) that time shifting is fair use



Class Activity 2



New Restrictions on Use

Counterfeit CDs: Lost Profits



Digital Millennium Copyright Act

- First big revision of copyright law since 1976
- Brought U.S. into compliance with Europe
- Extended length of copyright
- Extended copyright protection to music broadcast over Internet
- Made it illegal for anyone to
 - Circumvent encryption schemes placed on digital media
 - Circumvent copy controls, even for fair use purposes

Digital Rights Management

- Actions owners of intellectual property in digital form take to protect their rights
- Approaches
 - Encrypt digital content
 - Mark digital content so devices can recognize content as copy-protected

Online Music Stores Employed Digital Rights Management

- When iTunes Music Store opened, all music was protected with a DRM scheme called FairPlay
- FairPlay blocked users from freely exchanging purchased music
 - Songs couldn't be played on more than 5 different computers
 - Songs couldn't be copied onto CDs more than 7 times
- Songs purchased from iTunes Store wouldn't play on non-Apple devices
- DRM-protected music purchased from other online retailers couldn't be played on iPod

Microsoft Xbox One

- Microsoft announced cloud-based gaming experience for Xbox One (June 2013)
 - User could play any game without disc in tray
 - Automatic software updates of every Xbox One
- Controversial features of licensing arrangement
 - Disc could be shared only once
 - Second-hand market restricted
 - Xbox consoles would have to check in every 24 hours
- Microsoft backtracked
 - No need to connect to Internet
 - Freedom to lend, rent, buy, sell discs
 - Disc must be in tray to play game

Criticisms of DRM

- Any technological “fix” is bound to fail
- DRM undermines fair use
- DRM could reduce competition
- Some schemes make anonymous access impossible



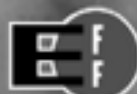
Extra Slides

Tired of being treated like a **criminal** for **sharing music online?**

You're in good company. Over 60 million other music fans use peer-to-peer programs like Kazaa and Morpheus to share their favorite tunes. Yet the record labels are bullying ISPs and hunting down college kids in an effort to shut down file sharing.

Isn't it time for a new approach? The Electronic Frontier Foundation thinks so. We believe the answer lies in a model that fairly compensates artists while supporting music lovers. Join EFF today so the music can play on.

File-Sharing: It's Music to our Ears



Stand up for your right to share the music you love!
Join EFF today at www.eff.org/share.

Locke's Notion of Property Rights

