

CPSC 2910

Lesson 7

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Intellectual Property

- ❖ What Is It?
- ❖ What are the Current Challenges?
- ❖ The Fair Use Doctrine
- ❖ Famous Cases
- ❖ Responses to Copyright Infringement
- ❖ Free Software
- ❖ Software Patents

What is Intellectual Property?

- ❖ The intangible creative work, not its particular physical form
- ❖ Value of intelligence and artistic work comes from creativity, ideas, research, skills, labor, non-material efforts and other attributes provided by the creator
- ❖ Protected by copyright and patent law

Copyright Holder - Exclusive Rights

- ❖ 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)

Why is Copyright Infringement so challenging today?

Copyright Challenges

- ❖ Digital technology and the Internet make copyright infringement easier and cheaper.
- ❖ New compression technologies make copying large files (e.g. graphics, video and audio files) feasible.
- ❖ Search engines make finding material easier.
- ❖ Peer-to-peer technology makes transferring and sharing files easier.
- ❖ Broadband connections make transferring files easier and enable streaming video.
- ❖ Miniaturization of cameras and other equipment enable audience members to record and transmit events.
- ❖ Scanners allow us to change the media of a copyrighted work, converting printed text, photos, and artwork to electronic form.
- ❖ New tools allow us to modify graphics, video and audio files to make derivative works.

Content industries claim that about one-quarter of Internet traffic worldwide consists of copyright-infringing material!

Fair Use Doctrine

- ❖ Four factors considered
 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 determines fair use
- ❖ Not all factors given equal weight, varies by circumstance

The Problem is a Matter of Perspective

- ❖ **Consumers** want to get movies and music online cheaply and conveniently.
- ❖ **Writers, singers, artists, actors, production, marketing, and management** want to get paid for the time and effort they put in to create the IP we enjoy.
- ❖ The **entertainment industry, publishers and software companies**, want to protect their investment and expected, or hoped-for, revenues.
- ❖ The **millions who post amateur works** using the works of others, want to create without unreasonably burdensome requirements and threats of lawsuits.
- ❖ **Scholars and various advocates**, want to protect intellectual property, but also to protect fair use, reasonable public access, and the opportunity to use new technologies to the fullest to provide new services and creative work.

Famous Cases

- ❖ Sony vs. Universal 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
- ❖ Sega vs Accolade, Nintendo vs. Atari (1992)
 - ❖ 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)
- ❖ Napster (early 2000s)
 - ❖ Court ruled sharing music via copied MP3 files violated copyright
 - ❖ Court ruled Napster liable because they had the right and ability to supervise the system, including copyright infringing activities

Discussion

What do you think the impact would be on creative industries, such as music, movies and fiction novels, if copyright laws did not protect intellectual property?

Protecting IP

- ❖ Software responses
 - ❖ Expiration dates within the software
 - ❖ Copy protection that prevents copying
 - ❖ Activation or registration codes
 - ❖ Court orders to shut down Internet bulletin boards and Web sites
- ❖ Banning, suing, taxing
 - ❖ Ban or delay technology via lawsuits i.e. CD-recording devices
 - ❖ Require that new technology include copyright protections
 - ❖ Tax digital media to compensate the industry for expected losses
- ❖ Digital Rights Management (DRM)
 - ❖ Collection of techniques that control uses of intellectual property in digital formats
 - ❖ Includes hardware and software schemes using encryption
 - ❖ The producer of a file has flexibility to specify what a user may do with it
 - ❖ Apple, Microsoft and Sony all use different schemes of DRM

International Piracy

- ❖ Some countries do not recognize or protect intellectual property
- ❖ Countries that have high piracy rates often do not have a significant software industry
- ❖ Many countries that have a high amount of piracy are exporting the pirated copies to countries with strict copyright laws
- ❖ Economic sanctions often penalize legitimate businesses, not those they seek to target

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)
- ❖ GNU project
 - ❖ Began with a UNIX-like operating system, a sophisticated text editor, and many compilers and utilities
 - ❖ Now has hundreds of programs freely available and thousands of software packages available as free software (with modifiable source code)
 - ❖ Developed the concept of copyleft

Discussion

Should all software be free?

- *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?*

Software Patents

- ❖ Patents protect inventions by giving the inventor a monopoly for a specified time period.
- ❖ Laws of nature and mathematical formulas cannot be patented.
- ❖ Obvious inventions or methods cannot be patented.
- ❖ Patent Trolls:
 - ❖ Some companies accumulate thousands of technology patents but do not make any products.
 - ❖ They license the patents to others and collect fees.