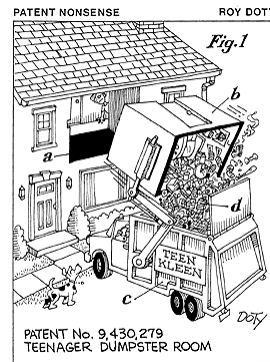


Intellectual Property



Copyright Paradigm News, Inc. The Syndicating Agency

Agenda

- Goals of intellectual property (IP) law
- Protecting Software IP
- Trademarks and internet domain names (skip)
- IP policies that affect you (at UW, on co-op)
- Course critiques

Goal of IP Law

The goal of IP law is to **balance** the private rights of IP developers with the public welfare of consumers.

Benefits to IP owners

- The exclusive right to develop, license, or sell IP
- Motivation to invest in developing new IP and products

Public Welfare of Consumers

- Consumers have access to products based on IP
- IP be public, to stimulate new ideas and new IP
- Fair use of IP

IP Law – Fair Use

Fair-use clauses give nonowners limited access to use IP without paying owner.

Example: Copyright “fair use” allows **free use of work, with citation**, when a user would lose more by locating and paying the owner than he/she would recover from the licensed use.

- **Commentary, criticism, or parody** of copyrighted work
- Uses where value of new work is only **partially attributed to copyrighted work**.

Dan Burk, “Copyrightable Functions and Patentable Speech”, *Communications of the ACM*, February 2001

Relevance to You

Engineers often **create new designs** and **adapt or improve old designs**.

Engineers (and their employers) establish and protect “ownership” of their creative efforts by registering their design ideas as intellectual property (IP)

- **Innovative design** - may be protected by patent
- **Routine design** - may infringe on existing patent or copyright

Software Copyrights

Copyright has been the primary mode of IP protection for software:

- Source code and object code
- Screen displays and user interfaces
- Structure, sequence, and organization of program

Software and Fair-Use Policies

Courts apply a four-part test when evaluating a fair-use claim:

- Purpose and characterization of use of copyrighted work
 - ↑ Creative use
 - ↑ Transformative use
 - ↓ Commercial use
- Nature and originality of copyrighted work
- Fraction of copyrighted work copied
- Effect of copying on the market of copyrighted work

Fall 2004

SE 101 Introduction to Software Engineering

7

Software and Fair-Use Policies

Anyone who **owns** a copy of a software program can

- Make a **backup copy**
- **Lend, rent, or resell** the purchased copy

Note that most shrink-wrapped software is available by licence, which may limit the buyer's rights

Courts have consistently allowed companies to **reverse-engineer** the source code of a copyrighted program and to understand it well enough to create interoperable products.

Fall 2004

SE 101 Introduction to Software Engineering

8

Mismatch in IP Protection?

Copyright does not protect

- Abstract ideas (outline of what software should do)
- Functionality, methods, processes
- Realizations of quality attributes
(designs for performance, reliability, etc.)

The primary value and ingenuity of software lies in its **functionality** and **quality attributes**, not its expression

Copyright protection gives the owner the exclusive right to reproduce and distribute copies of the work.

Dan Burk, "Copyrightable Functions and Patentable Speech", *Communications of the ACM*, February 2001

Fall 2004

SE 101 Introduction to Software Engineering

9

Software Patents

In the past 10 years, patent authorities have become increasingly receptive to claims of software inventions:

A patent can protect the **processes** (software), and machines (hardware), that realize a **novel, useful, nonobvious invention**.

- ↓ Pure algorithms
- ↓ Implementations of mathematical functions
- ↑ Processes that transform the physical world
- ↑ Optimal implementations of processes

Fall 2004

SE 101 Introduction to Software Engineering

10

Protecting Software IP

IP laws were devised for a manufacturing age and may not be well-suited to promote innovation for an information age.

IP law partitions

- **Writings, layouts** - which fall under copyright law
- **Functional inventions** - which fall under patent law

But software, by nature, is a combination of the above.

Agenda

- Goals of intellectual property (IP) law
- Protecting Software IP
- **Trademarks and internet domain names (skip)**
- IP policies that affect you (at UW, on co-op)

Trademarks

A **trademark** is a shorthand phrase or symbol that

- Identifies a product
- Connotes the product's producer
- Reminds consumers of an expected level of quality

Benefits to the public

- Protects consumers against fraud, counterfeiting, and confusion
- Help consumers to make purchasing decisions based on past experience

Benefits to trademark holder - protects the goodwill a business builds up by producing quality products.

Trademarks

Trademark law limits the use of most names (or symbol or other identifier) to

- The type of goods sold
- A small region in which the goods are sold (e.g., a town)

Trademark law is designed to allow

- Multiple, concurrent use of the **same name** by **different types of businesses** in the **same location**
- Multiple, concurrent use of the **same name** by **similar types of businesses** in **different locations**

Trademarks vs. Internet Domain Names

Internet domain names are internationally unique, mnemonic names that identify individual computers or networks.

Initially, there was no attempt to prevent duplication between trademark names and domain names. Such negligence gave rise to a market in domain names.

Cybersquatting - buying internet domain names that match or resemble trademark names, in the hopes that the trademark owners will pay big bucks for the domain names

Trademarks vs. Internet Domain Names

Anticybersquatting Consumer Protection Act (U.S.A)

Trademark holders are still unhappy:

- They can lose their trademark rights if they are not diligent about contesting misuses of their trademarks by others.
 - In different top-level-domains (e.g., .com, .uk)
 - Variations of trademark (e.g., "walmartsucks.ca")
- A business that is slow to come to the Internet often finds that its name is taken by a legitimate business of the same name.

Agenda

- Goals of intellectual property (IP) law
- Protecting Software IP
- Trademarks and internet domain names
- IP policies that affect you (at UW, on co-op)

UW Policy 73

The University's IP Policy (#73) applies to you when you are on campus:

"Except as stipulated below, it is University policy that ownership of rights in IP created in the course of teaching and research activities belong to the creator(s).

The exceptions are:

...

- Owners of IP rights in scholarly works created in the context of teaching and research activities grant the University a non-exclusive, free, irrevocable license to copy and/or use such works in other teaching and research activities, but excluding licensing and distribution to persons or organizations outside the University community.

..."

Company IP Policies

As part of your co-op employment contract, you may be asked to sign an IP agreement, a non-disclosure agreement, or both.

Non-disclosure agreement (NDA) - An agreement to not disclose **confidential** material, usually concerning future products or financial dealings.

IP Policy - An agreement that dictates who owns IP that is developed as part of employment or using company resources (e.g., computers). The company is usually the **sole owner of such IP**.

Non-disclosure agreements (NDA)

- **Confidentiality agreements** - prevent you from taking IP or confidential information out of the office, especially after you end your employment.
 - May require you to seek approval of public communications (e.g., work term reports).
- **Non-competition agreements** - restrict you from working for a competitor of the employer or competing with the employer after you end your employment.
- **Non-solicitation agreements** - bar you from seeking or doing business with the employer's customers.

Company IP Policies

Companies typically own **all rights** to most IP created by their employees.

“Employee hereby assigns and waives in favour of Company **all rights in and to all IP** that

- results from **any work** performed by the Employee whether during **working hours or non-working hours**, while employed by Company and **relates, directly or indirectly**, to Company’s present or reasonably foreseeable business or research or development...
- is created or made by Employee **using the Company’s equipment, supplies, facilities, resources** (including the time of the employee), **or Confidential Information.**”
- **except** for the list of matters set out in Schedule A attached hereto that were **produced or designed by me** prior to the commencement of my employment with Company.

Company IP Policies

“[The Employee] agrees that the IP shall not contain any virus or other harmful code.”

Company IP Policies

Rare, liberal companies will share with the creator(s) rights to employee-created IP.

"[Owners of IP] shall grant to the Company and its Affiliates a royalty-free, non-exclusive, perpetual, worldwide, unrestricted right to use and modify IP and to sublicense such right to licensed manufacturers of products of Company and its Affiliates for use in the manufacture of such products."

Summary

- Goals of intellectual property (IP) law are to balance the rights of developers to protect IP with the rights of the public to advance IP and trade.
- IP law is ill-suited to protect software because the law partitions **writings** and **functional inventions**, and software is a combination of these.
- As a student, you are bound by UW IP policies.
- As a co-op employee, you are bound by company IP policies.

Announcements

- **Quiz #3 in lab on Thursday, 10:30 a.m.**
Covers lectures on ~~professional~~ engineering, quality attributes, safety, and intellectual property
 - IPE 2, 3, 4, 17, 19, 20
and word choice
 - Dupré 3,14,17,20,28,30,45,51,61,64,71,
75,81,99,115,127,129,136
- Course critiques next
- Benoit will distribute design reports outside in RCH centre after class