

# Intellectual Property and You

CS 232

James Heliotis

# Knowledge and Ownership

- ◆ A competitive marketplace
  - Results in a mobile workforce
  - Sensitive information walks out the door when an employee leaves
- ◆ Employment Non-Disclosure agreement
  - Legal document that details relationship between employee and employer
  - May restrict future employment possibilities for the employee

# Employer's Point of View

- ◆ When an employee accepts a job with a new company the first employer needs to take the following steps:
  - Assess employee's access to sensitive information
  - Determine to what extent the employee is a security risk .
  - Has the employee copied and removed sensitive information in preparation of his/her move?
  - What is the nature of the employee's new assignment? Does it relate to his current job?

# Binding Consent Order

- ◆ The employer may obtain a binding consent order with the departing employee and the new employer.
  - Restrict employee from communicating with parts of the new organization
  - Can last typically 6 months to 2 years
- ◆ The new employer must avoid improperly obtaining trade secrets or confidential information from employee – legal issues for new employer



# Employee's Point of View

- ◆ It's a free country. I should be able to work for who ever I chose.
- ◆ I am a free agent.
- ◆ Not everything is a secret. Employer must identify what he considers confidential or secret.

# Law and Computing

	<b>Computer Industry</b>	<b>Legal System</b>
<b>Domain</b>	Formal, mechanical systems	Social systems
<b>Individual Autonomy</b>	Absolute	Nonexistent
<b>Time Scale</b>	Nanosecond	Decades
<b>Notions of "elegance"</b>	Efficiency, clarity	Precedent "code reuse"
<b>Ambiguity</b>	Eliminate	Accommodate

# Legal Protection

- ◆ Trade Secrets
- ◆ Trademark (USPTO)
- ◆ Copyright (Library of Congress)
- ◆ Patents (USPTO)

# Trade Secrets

## ◆ What are typical trade secrets?

- Papa John's Pizza Sauce Recipe
- Recipe for Coke
- Method for making synthetic diamonds
- Products Wegmans plans to put on sale this week

## ◆ For computing professionals

- Proprietary process information
- Algorithms used in programs
- New service being offered by our company
- Marketing plans for new products

# Trade Secret Requirements

- ◆ Gives a competitive advantage in business
- ◆ Not generally known
  - But not necessarily rocket science
- ◆ Maintained as confidential

# Trade Secrets

- ◆ Duration potentially infinite
- ◆ Public disclosure ends protection
  - Independent discovery
  - Misappropriation (by employees or spies)
- ◆ To help preserve protection
  - Explicit non-disclosure agreements
  - Security Precautions
  - Employees informed of obligations

# Trade Secrets

- ◆ What must a company do to protect trade secrets?
  - The company needs a plan of action that identifies, protects, and monitors protection of information...



# Trade Secrets

- ◆ A plan may consist of:
  - Creating and maintaining a climate of confidentiality surrounding company's secrets.
  - Identifying what materials the company possesses that it considers to be trade secret.
  - Determining the economic value of information.
  - A realistic assessment of the secrecy of the information.
  - How to keep information protected – which employees will have access to information?

# Trade Secrets

- ◆ This process will allow the company to obtain protection under the UNIFORM TRADE SECRETS ACT.
- ◆ A second legal act is the ECONOMIC ESPIONAGE ACT OF 1996 (Federal)
  - A North Carolina man pleaded guilty to hacking into the systems of SUN, Motorola, and Novell and stealing proprietary software. He received 4 year prison sentence.

# Trademark

- ◆ A name, word, symbol, or type of device that indicates a source of goods/services that distinguishes them from others' goods/services.
  - You don't want people confusing the source
  - Purpose is to protect brand names, symbols and other identifying information of a business or product.
  - They can be words, logos, sounds, colors, ...



<http://users.adams.net/~jfs/chimes.htm>

<http://www.radioremembered.org/sounds/nbc1.wav>

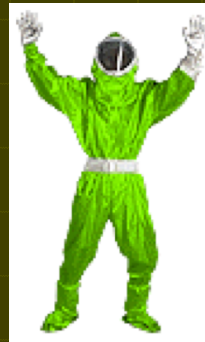
# Some Intel Trademarks



# Some Intel Trademarks



# Some Intel Trademarks



# Trademark

- ◆ A trademark does not provide trade secret protection.
- ◆ Business or person registering a trademark with the US Patent Office obtains an exclusive license for material that is granted the trademark.
- ◆ Are trademarks protected forever?
  - Consider: aspirin, nylon, kleenex, ...
  - Became a generic part of the language and their trademark protection was discontinued.



# Copyright

- ◆ Copyright protects "*original works of authorship*" that are fixed in a tangible form of expression.
  - "*To promote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries.*" - from Article I, Section 8 U.S. Constitution
  - A form of protection provided by the laws of the United States to the authors of "original works of authorship"

# Copyright

- ◆ Protects the form of expression not the subject
  - A description of a machine could be copyrighted, but this would only prevent others from copying the description; it would not prevent others from writing a description of their own or from making and using the machine.

# What the Owner Gets

- ◆ Exclusive rights in the following areas
  - **Reproduce** the work in copies
  - Prepare **derivative works** based upon the work;
  - **Distribute** copies of the work to the public by sale or other transfer of ownership, or by rental, lease, or lending;
  - **Perform** the work publicly
  - **Display** the copyrighted work publicly
    - ◆ In the case of sound recordings, to perform the work publicly by means of a digital audio transmission.

# Copyright Does Not Protect

- ◆ Works that have not been fixed in a tangible form of expression
- ◆ Independent Creation
- ◆ Underlying Ideas
- ◆ Aspects dictated by external constraints (e.g. standards, compatibility, efficiency)
- ◆ Works consisting entirely of information that is common property and containing no original authorship

# Fair Use

- ◆ Four factors to be considered in a 'fair use' analysis:
  - Purpose and Character of Use
    - ◆ Is it of a commercial nature or for nonprofit educational purposes?
  - Nature of Copyrighted Work
    - ◆ Is this worthy of copyright protection?
  - Relative Amount
    - ◆ How much and of what quality or importance was copied?
  - Effect Upon Potential Market
    - ◆ What is the extent of harm to the market of the original work caused by the infringement?

# How To Copyright

- ◆ Copyright Secured Automatically upon Creation
  - Immediately becomes the property of the author who created the work.
  - Only the author or those deriving their rights through the author can rightfully claim copyright.
    - ◆ In the case of works made for hire, the employer and not the employee is considered to be the author.

# How To Copyright

- ◆ Registration optional (but easy, cheap, and useful)
  - To register a copyright with the Library of Congress copies of materials must be submitted with application.
  - Copyright 2002 Chris Kode. All rights reserved.



# What Can Be Copyrighted?

## ◆ Copyrightable works include the following:

- Literary works - novels, screenplays, manuals, ...
- Dramatic works, including any accompanying words
- Photographs, graphics works and sculpture
- Music, all types of songs including advertising jingles
- Pantomimes and choreographic works
- Motion pictures, videos, and other audiovisual works
- Sound recordings
- Architectural works

# What Can Be Copyrighted?

- ◆ These categories should be viewed broadly
  - Computer programs and most "compilations" may be registered as "literary works"

# Protection for Software

- ◆ Copyright Act defines computer programs as
  - “sets of statements or instructions to be used directly or indirectly in a computer to bring about a certain result”
- ◆ Copyright protection is extended to include:
  - Manuals
  - Program design documents
  - Software documentation
  - To some extent, a program’s UI “look and feel”
- ◆ Cannot copyright a Computer Language

# How Long Does it Last?

- ◆ From the moment it is created until
  - For the author's life plus an additional 70 years after the author's death
  - For works made for hire the duration of copyright will be 95 years from publication or 120 years from creation, whichever is shorter.
- ◆ Copyrights may be transferred, but the transfer of exclusive rights is not valid unless that transfer is in writing and signed by the owner of the rights.

# Issues With Copyrights

- ◆ How do you separate functionality (idea) from expression?
- ◆ How far can copyright be used to protect a user interface?
- ◆ Enforcement against infringement
- ◆ Ownership issues and “works for hire”
  - Employee versus contractor

# Patents

- ◆ A patent is a grant of property right by the Government to the inventor:
  - “the right to exclude others from making, using, offering for sale, or selling” the invention in the US or “importing” the invention into the US.
- ◆ What is granted is ***not*** the right to make, use, offer for sale, sell or import, but the right to ***exclude*** others from making, using, offering for sale, selling or importing the invention.
- ◆ The term of a new patent is 20 years.

# What Can Be Patented?

## ◆ Requirements

- Any new and useful process, machine, [article of] manufacture, or composition of matter
- Not a phenomenon of nature or a scientific principle
- A patent cannot be obtained for an idea

## ◆ Novelty

- Does not exist in the “prior art”

## ◆ Non-obvious

- At the time the invention was made
- To a person “having ordinary skill in the art”



# Obtaining a Patent

## ◆ Invention Disclosure

- Properly written and witnessed disclosures
  - ◆ to fix the date of the invention and provide information to assess value of the invention
  - ◆ Aids the patent attorney in identifying the patentable aspects of the invention
- Clearly stated problems solved by the invention
- What is new and different
- Improvements over *prior art*

# Obtaining a Patent

- ◆ Pay Up!
- ◆ The expense of filing patents:
  - \$5,000 - \$20,000

## Disposable cup with spill resistant lid

### Abstract

The disposable cup has a bottom insert, and a substantially truncated conical body having an integral lid and a cup opening. The lid is movable between a raised position and a closed position, possibly via a semi-closed position. The lid has a free edge, with a liquid passage opening allowing liquid passage when the lid is in said closed position. The lid is foldably joined to the body along an arcuate first score line. The lid further has second score lines arranged at respective ends of the free edge, the second score lines connecting the free edge and the first score line so that, when the lid is pushed towards the cup opening, the lid flips into a position inside the cup opening, the movement of the lid being substantially aided by the folding of the lid along the second score lines. The lid has a larger cross-dimension than the cross-dimension of the body at the closed position of the lid, so that, when the lid portion is pushed further into the body, the lid is bent into a convex shape to seal liquid access along the inside of the cup, and the lid is partly held in the cup in the closed position by frictional forces between the lid and the inside of the cup, and partly by the second score lines causing outer portions of the lid to bend to a substantially vertical position, thereby increasing the force holding the lid in the closed position.

# Software Patents

- ◆ Provide software algorithm details
- ◆ Attempt to relate the program to the physical computer system, such as organization in computer memory
- ◆ Provide logic flowcharts at a level of detail sufficient for average programmer to implement

# Patents vs. Copyrights

	Patent	Copyright
Term	20 years	Life + 70 years
Cost	More than \$10,000	\$20
Time	Months	Instantaneous
Protects	Claimed Invention	Expressive Form
Against	Later Inventors	Copycats
Applies to	New and useful process, machine, ...	Any expression

# Patent Issues

- ◆ Must publicly disclose information inherent in the product or process.
  - It teaches the public how to make the invention:
  - What might have been considered secret is now 'public'
  - If a court later decides a patent is invalid, invention will have been disclosed to competitors.
- ◆ No repository of prior art
- ◆ Time to issue
- ◆ Companies that survive only by licensing

# Some Interesting Patents

◆ <http://www.delphion.com/details?&pn=US06125480>



# Summary

- ◆ A trademark is used to identify the source of a product or service and distinguish it from similar products and services
- ◆ A copyright protects an original artistic or literary work
- ◆ A patent protects an invention