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COURSE TECHNOLOGY




Ethics in Information Technology, Second Edition

Chapter 6 *Intellectual Property*

Objectives

- What does the term *intellectual property*  encompass, and why are companies so concerned about protecting it?
- What are the strengths and limitations of using copyrights, patents, and trade secret laws to protect intellectual property? 
- What is plagiarism, and what can be done to combat it? 

Objectives (continued)

- What is reverse engineering, and what issues are associated with applying it to create a look-alike of a competitor's software program? 
- What is open source code, and what is the fundamental premise behind its use? 
- What is the essential difference between competitive intelligence and industrial espionage, and how is competitive intelligence gathered? 

Objectives (continued)

- What is cybersquatting, and what strategy should be used to protect an organization from it?



What is Intellectual Property?

- Term used **to describe works of the mind**
 - Distinct and “owned” or created by a person or group
- Copyright law
 - Protects authored works
- Patent laws
 - Protect inventions
- Trade secret laws
 - Help safeguard information critical to an organization’s success

Copyrights

- Established in the U.S. Constitution
 - Article I, section 8, clause 8
- Grants creators of original works the right to
 - Distribute
 - Display
 - Perform
 - Reproduce work
 - Prepare derivative works based upon the work
 - Author may grant exclusive right to others




Copyrights (continued)


- Types of work that can be copyrighted
 - Architecture
 - Art
 - Audiovisual works
 - Choreography
 - Drama
 - Graphics
 - Literature
 - Motion pictures




Copyrights (continued)

- Types of work that can be copyrighted
 - Music
 - Pictures
 - Sculptures 
 - Sound recordings
 - Other intellectual works...

Copyrights (continued)

- Work must fall within one of the preceding categories 
- Must be original
 - Evaluating originality can cause problems
- Fair use doctrine
 - Factors to consider when evaluating the use of copyrighted material

Copyrights (continued)

- Fair use doctrine factors include:
 - Purpose and character of the use
 - Nature of the copyrighted work
 - Portion of the copyrighted work used
 - Effect of the use upon the value of the copyrighted work
- Copyright infringement 
 - Copy substantial and material part of another's copyrighted work
 - Without permission

Copyrights (continued)

- Area of copyright infringement
 - Worldwide sale of counterfeit consumer supplies
- Copyrights to protect computer software exist
 - To prove infringement, copyright holders must show a striking resemblance between the original software and the new software that could be explained only by copying
- World Intellectual Property Organization (WIPO)
 - Agency of the United Nations
 - Advocates for the interests of intellectual property owners

Copyrights (continued)

- Digital Millennium Copyright Act (DMCA) 1998
 - Added new provisions to WIPO
 - Civil and criminal penalties included
 - Governs distribution of tools and software that can be used for copyright infringement
 - Opponents say it restricts the free flow of information

Patents

- Grant of property rights to inventors
- Permits an owner to exclude the public from making, using, or selling the protected invention
- Allows legal action against violators
- Prevents independent creation
- Extends only to the United States and its territories and possessions

Patents (continued)

- Applicant must file with the Patent Office
 - Patent Office searches prior art
 - Takes an average of 25 months
- Prior art
 - Existing body of knowledge
 - Available to a person of ordinary skill in the art

Patents (continued)

- An invention must pass four tests
 - Must be in one of five classes of items (processes, machines, manufactures, compositions of matter, new uses in any of the four)
 - Must be useful
 - Must be novel
 - Must not be obvious to a person having ordinary skill in the same field
- Items cannot be patented if they are
 - Abstract ideas
 - Laws of nature
 - Natural phenomena

Patents (continued)

- Patent infringement
 - Someone makes unauthorized use of a patent
 - No specified limit to the monetary penalty
- Software patent
 - Feature, function, or process embodied in instructions executed on a computer
- 20,000 software-related patents per year have been issued in the U.S. since the early 1980s
- Example: Amazon.com “one-click shopping”
- Example: Cygnus “document-preview icons”

Patents (continued)

- Before obtaining a software patent, do a patent search
- Software Patent Institute is building a database of information
- Cross-licensing agreements
 - Large software companies agree not to sue others over patent infringements
 - Small businesses have no choice but to license patents to large companies
- IBM donated 3000 patents in 2009

Patents (continued)

- Defensive publishing
 - Alternative to filing for patents
 - Company publishes a description of the innovation
 - Establishes the idea's legal existence as prior art
 - Thus prevents others from filing for that patent
 - Costs mere hundreds of dollars
 - No lawyers
 - Fast
- Patent Trolls: companies that acquire patents to license them to others

Patents (continued)

- Standard is a definition or format
 - Approved by recognized standards organization
 - Or accepted as a de facto standard by the industry
 - Enables hardware and software from different manufacturers to work together
- Submarine patent
 - Hidden within a standard
 - Does not surface until the standard is broadly adopted
 - Example: Univ. of California vs. Microsoft

Patents (continued)

- Patent farming involves
 - Influencing a standards organization to make use of a patented item
 - Demanding royalties from all parties that use the standard
 - Example: Rambus vs. other DRAM vendors.

Trade Secret Laws

- Trade secret
 - Business information
 - Represents something of economic value
 - Requires an effort or cost to develop
 - Some degree of uniqueness or novelty
 - Generally unknown to the public
 - Kept confidential
- Computer hardware and software can qualify for trade secret protection

Trade Secret Laws (continued)

- Information is only considered a trade secret if the company takes steps to protect it
- Greatest threat to loss of company trade secrets is employees
- Nondisclosure clauses in employee's contract
 - Enforcement can be difficult
 - Confidentiality issues are reviewed at the exit interview

Trade Secret Laws (continued)

- Noncompete agreements
 - Protect intellectual property from being used by competitors when key employees leave
 - Require employees not to work for competitors for a period of time
 - Example: Mark Papermaster moving from IBM to Apple
- Safeguards
 - Limit outside access to corporate computers
 - Guard use of remote computers by employees

Trade Secret Laws (continued)

- Trade secret law has a few key advantages over patents and copyrights
 - No time limitations
 - No need to file an application
 - Patents can be ruled invalid by courts
 - No filing or application fees
- Law doesn't prevent someone from using the same idea if it is developed independently
- World Trade Organization (WTO)
 - TRIPs Agreement provides for a minimum level of protection for intellectual property

Summary of the WTO TRIPs Agreement

TABLE 6-1 Summary of the WTO TRIPs Agreement

Form of intellectual property	Key terms of agreement
Copyright	Computer programs are protected as literary works. Authors of computer programs and producers of sound recordings have the right to prohibit the commercial rental of their works to the public.
Patent	Patent protection must be available for inventions for at least 20 years and for both products and processes in almost all fields of technology. (Controversy has arisen over whether this protection applies to computer software.)
Trade secrets	Trade secrets and other types of undisclosed information that have commercial value must be protected against breach of confidence and other acts that are contrary to honest commercial practices. However, reasonable steps must have been taken to keep the information secret.

Legal Overview: The Battle Over Customer Lists

- Employees make unauthorized use of an employer's customer list
 - Customer list not automatically considered a trade secret
 - Educate workers about the confidentiality of such lists
 - A former employee might be sued for stealing customers even if he did not steal a “customer list”

Key Intellectual Property Issues

- Issues that apply to intellectual property and information technology
 - Plagiarism
 - Reverse engineering
 - Open source code
 - Competitive intelligence
 - Cybersquatting

Plagiarism

- Theft and passing off of someone's ideas or words as one's own
- Many students
 - Do not understand what constitutes plagiarism
 - Believe that all electronic content is in the public domain
- Plagiarism detection systems
 - Check submitted material against databases of electronic content

Plagiarism (continued)

- Steps to combat student plagiarism
 - Help students understand what constitutes plagiarism
 - Show students how to document Web pages
 - Schedule major writing assignments in portions
 - Tell students that you know about Internet paper mills
 - Educate students about plagiarism detection services

Partial List of Plagiarism Detection Services and Software

TABLE 6-2 Partial list of plagiarism detection services and software

Name of service	Web site	Provider
iThenticate	www.ithenticate.com/	iParadigms
Turnitin	www.turnitin.com/	iParadigms
MyDropBox	www.mydropbox.com/	MyDropBox LLC
Glatt Plagiarism Services	www.plagiarism.com/	Glatt Plagiarism Services
EVE Plagiarism Detection	www.canexus.com/eve/	CaNexus

Reverse Engineering

- Process of taking something apart in order to
 - Understand it
 - Build a copy of it
 - Improve it
- Applied to computer
 - Hardware
 - Software
- Convert a program code to a higher level design
- Convert an application that ran on one vendor's database to run on another's

Reverse Engineering (continued)

- Compiler
 - Language translator
 - Converts computer program statements expressed in a source language to machine language
- Software manufacturer
 - Provides software in machine language form
- Decompiler
 - Reads machine language
 - Produces source code

Reverse Engineering (continued)

- Courts have ruled in favor of using reverse engineering
 - To enable interoperability
- Software license agreements forbid reverse engineering
- Semiconductor Chip Protection Act (SCPA)
 - Established a new type of intellectual property protection for mask works

Open Source Code

- Program source code made available for use or modification
 - As users or other developers see fit
- Basic premise
 - Software improves
 - Can be adapted to meet new needs
 - Bugs rapidly identified and fixed
- High reliability
- GNU General Public License (GPL) was a precursor to the Open Source Initiative (OSI)

Competitive Intelligence

- Gathering of legally obtainable information
 - To help a company gain an advantage over rivals
- Often integrated into a company's strategic plans and decision making
- Not industrial espionage
- Nearly 25 colleges and universities offer courses or programs
- Without proper management safeguards it can cross over to industrial espionage
 - Example: Proctor & Gamble spying on Unilever

Cybersquatting

- Trademark is anything that enables a consumer to differentiate one company's products from another's
 - May be
 - Logo
 - Package design
 - Phrase
 - Sound
 - Word

Cybersquatting (continued)

- Trademark law
 - Trademark's owner has the right to prevent others from using the same mark
 - Or confusingly similar mark
- Cybersquatters
 - Registered domain names for famous trademarks or company names
 - Hope the trademark's owner would buy the domain name
 - For a large sum of money

Cybersquatting (continued)

- To curb cybersquatting
 - Register all possible domain names
 - .org
 - .com
 - .info
- Internet Corporation for Assigned Names and Numbers (ICANN)
 - Current trademark holders are given time to assert their rights in the new top-level domains before registrations are opened to the general public

Summary

- Intellectual property is protected by
 - Copyrights
 - Patents
 - Trade secrets
- Plagiarism is stealing and passing off the ideas and words of another as one's own
- Reverse engineering
 - Process of breaking something down
 - In order to understand, build copy, or improve it

Summary (continued)

- Open source code
 - Made available for use or modification as users or other developers see fit
- Competitive intelligence
 - Not industrial espionage
 - Uses legal means and public information
- Cybersquatting
 - Registration of a domain name by an unaffiliated party