

Computer Law

Informatics 269



David G. Kay

DONALD BREN SCHOOL OF
INFORMATION AND COMPUTER SCIENCES
DEPARTMENT OF INFORMATICS
UNIVERSITY OF CALIFORNIA, IRVINE
KAY@UCI.EDU

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Computer Law in Context

🍷 Computer science

- 🍷 *By subdiscipline:* architecture, theory, AI, programming languages, networks, ...
- 🍷 *By application area:* web development, games, biomedical computing, scientific visualization, ...

🍷 Law

- 🍷 *By subdiscipline:* contracts, torts, family law, constitutional law, real property, criminal law, intellectual property, ...
- 🍷 *By application area:* health care law, aviation law, computer law, ...

The Breadth of Computer Law

- ❧ Intellectual property
- ❧ Contracting for computer systems
- ❧ Liability for malfunction
- ❧ Privacy of computer-based records
- ❧ Computer crime
- ❧ Computer-based records as evidence
- ❧ Antitrust in the computer industry
- ❧ Transborder data flow

- ❧ Related issues beyond “substantive computer law”
 - ❧ Legal expert systems
 - ❧ Applications of computing to law practice
 - ❧ Ethics in computing
 - ❧ University ownership of faculty (or student) work

Law and Computing:

Different Goals, Different Cultures

	Computer Industry	Legal System
Domain	formal, mechanical systems	social systems
Individual autonomy	absolute (sometimes)	nonexistent
Time scale	months (or nanoseconds)	decades
Notions of “elegance”	efficiency, clarity	precedent, “code reuse”
Ambiguity	eliminate	accommodate
Characteristic question	Is it legal?	What are the arguments?

Multiple, Coexisting Legal Systems

- ♥ Federalism: Distributed control
 - ♥ U.S. Constitution defaults to the states
- ♥ Legislation vs. Common Law
 - ♥ U.S. Congress, 50 state legislatures
 - ♥ Federal courts (trial/appeals/Supreme), state courts (trial/appeal/Supreme)
- ♥ Appellate court opinions have the force of law (in their jurisdiction)
- ♥ Adversary system; “case or controversy”
- ♥ Legal “causes of action”
- ♥ Technical issues in the mainstream media

Categories of Intellectual Property Law

♥ Patent (Federal law)

♥ Copyright (Federal law)

U.S. Constitution: The Congress shall have power “to promote the progress of science and the useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries.” [Art.1, sec.8, cl.8]

♥ Trade Secret (mostly state law)

♥ Trademark (mostly Federal)

Promote “fair play” in business

Patents vs. Copyrights

	Patent	Copyright
Term	20 years (17)	Life + 70 years
Cost	\$10,000 or more	\$35
Time	Months or more	Instantaneous
Protects	Claimed invention	Expressive form
... against	Later inventors	Copycats
Applies to	New and useful process, machine, ...	Any expression

Patent Requirements

🍷 Statutory subject matter

- 🍷 Any new and useful process, machine, [article of] manufacture, or composition of matter
- 🍷 Not phenomena of nature, scientific principles, abstract ideas, (pure) mathematical formulas
- 🍷 Software?

🍷 Novelty

- 🍷 Does not exist in the “prior art”

🍷 Non-obviousness

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

Patent Problems

- ❧ No repository of prior art
- ❧ Education of patent examiners
- ❧ Time to issue
- ❧ “Patent portfolios” and unequal bargaining power
- ❧ The effect of patents on later innovation

Copyright Requirements

- ♥ Automatic once work is tangible
- ♥ Copyright notice helpful, but not required
Copyright © 2012 by Peter Programmer. All rights reserved.
- ♥ Registration optional (but easy, cheap, useful)
- ♥ Author exclusively may:
 - ♥ Reproduce
 - ♥ Distribute
 - ♥ Create derivative works
 - ♥ Perform or display publicly
- ♥ Infringement is unauthorized use with
 - ♥ Substantial similarity
 - ♥ Access to copyrighted work

Copyright Does Not Apply To ...

- ♥ Independent creation
- ♥ Underlying ideas
- ♥ Portions in the public domain
- ♥ Aspects dictated by external constraints (e.g., standards, compatibility, efficiency, common practice)
- ♥ Copying by “implied license”
- ♥ “Fair use,” considering
 - ♥ Purpose and character of the use (profit? convenience?)
 - ♥ Nature of copyrighted work (fiction? fact?)
 - ♥ Amount and substantiality of copied portion
 - ♥ Effect of copying on potential market or value of the work

Copyright Problems

- 🍷 How to distinguish functionality (idea) from expression
- 🍷 How far copyright can protect a user interface
- 🍷 Enforcement against infringers, especially on the web
 - 🍷 Big-time vs. small-time infringers
- 🍷 Ownership issues and “works for hire”
 - 🍷 Employee vs. contractor
- 🍷 Content providers vs. content consumers
- 🍷 Copyright vs. plagiarism

Trade Secret Requirements

- ♥ Gives a competitive advantage in business
- ♥ Not generally known (but not necessarily rocket science)
- ♥ Maintained as confidential

Trade Secret Protections, Problems

- ♥ Duration potentially infinite
- ♥ Public disclosure ends protection
 - ♥ Independent discovery, reverse engineering is OK
 - ♥ Misappropriation (by employees or spies) isn't
- ♥ To help preserve protection:
 - ♥ Explicit nondisclosure agreements
 - ♥ Security precautions
 - ♥ Employees informed of obligations
 - ♥ But: Are employee non-competition agreements enforceable?
- ♥ Employee's expertise vs. trade secrets

Trademarks

- ♥ Identify source or quality of goods or services in a particular market
- ♥ Words, logos, sounds, colors
- ♥ Obtain by use in commerce
- ♥ Duration potentially infinite if not “abandoned”
- ♥ Federal registration permits lawsuits, statutory damages, use of ®

Contract Basics

🍷 Formation

- 🍷 Offer

- 🍷 Acceptance

- 🍷 “Meeting of the minds”

🍷 Consideration: something of value

🍷 When writing is required

- 🍷 Real property transactions

- 🍷 Transferring copyright ownership

- 🍷 Always advisable in a business context

🍷 Shrink-wrap and “click-wrap” licenses: acceptance by conduct

🍷 Performance and breach

Software Development Contracts 1

🍷 Functionality

- 🍷 Correct results
- 🍷 User tasks: usability, interface
- 🍷 Compliance with standards
- 🍷 Operational environment
- 🍷 Performance, response time
- 🍷 Reliability, percent uptime
- 🍷 Security from attacks, against lost data

Software Development Contracts 2

🍷 Development process

- 🍷 Particular methodologies
- 🍷 Incremental development milestones
- 🍷 Subcontractors
- 🍷 Security of confidential business information

🍷 Price

- 🍷 Payment terms
- 🍷 Milestones, bonuses, penalties

Software Development Contracts 3

- ❧ Ownership and exclusivity
 - ❧ Who owns the resulting product?
 - ❧ Who keeps the source code? (Escrow)
- ❧ Installation and acceptance testing
- ❧ Training and documentation
- ❧ Maintenance and support
- ❧ Publicity: Use of either party's name
- ❧ Liability and allocation of risk
 - ❧ For IP infringement
 - ❧ Compliance with other law
- ❧ Conflict resolution, e.g., arbitration
- ❧ Choice of law and forum
- ❧ Severability and so on

First Amendment

U.S. Constitution: Congress shall make no law ... abridging the freedom of speech, ... [Amendment I]

- 🍷 Applies to the government

- 🍷 Doesn't apply to

 - 🍷 Certain “speech acts”

 - 🍷 Protecting children from harmful material

 - 🍷 Defamation (slander, libel)

- 🍷 Does speech on the internet deserve special treatment?

Privacy

- 🍷 Electronic records vs. conventional records
 - 🍷 Different in degree or in kind?
 - 🍷 *US vs. Miller*
 - 🍷 Right to Financial Privacy Act of 1978
- 🍷 Potential privacy abuses
 - 🍷 By government (Fourth Amendment, expectation)
 - 🍷 By private parties/industry
 - 🍷 Inferences
- 🍷 Patchwork of protection in US law
- 🍷 European Union Data Privacy Directive
- 🍷 Privacy advocates' principles

Liability for Malfunction

🍷 Negligence

- 🍷 Duty of reasonable care

- 🍷 Breach of that duty

- 🍷 Causation of damage

🍷 Strict liability

- 🍷 Defect in design or manufacture

- 🍷 Product unreasonably dangerous regardless of fault

🍷 Assignment of the risk; insurance

Computer Crime

🍷 Financial

🍷 Vandalism

🍷 Joyriding

🍷 Espionage (industrial or national)