

Strategic  
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## Intellectual property

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## Outline

- Trademark
- Trade secret
- Patent
- Copyright

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## Trademark

- Any visible sign or device used by a business to identify its goods and distinguish them from those made or carried by others
  - Producer: Prevent unfair competition by imitators
  - Customer: Depend on reputation
  - Society: Encourage product quality

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## Trademark law

- If registered, becomes private property
  - Can be sold, inherited, or leased
- In U.S., criterion for infringement is customer confusion
  - e.g. PalmPilot vs. PalmPC
- In U.S., must be used, but not become generic (public associates with product category, not brand)
  - e.g. Aspirin, Kleenex, Xerox, or Linoleum

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## Patent

- Exclusive right to make, use, or sell products incorporating an invention for a fixed period of time
  - can preclude others, or sell or license rights to them
- An invention has never been legally defined, but must meet a number of tests
  - novel and practically useful idea
  - must be a significant advance over prior art
  - must not be obvious to an expert

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## Tradeoff

- Societal goal is to
  - maximize benefits of technology to everybody
  - incentivize R&D for the generation of new ideas
- Solution: create limited property rights that preclude secrecy
- Downside: government sanctioned monopoly that restricts competition

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## Advantages of patents

- Holder:
  - Incentive to invest in R&D with promise of exclusivity for a limited time period
- Society:
  - Invention moves into public domain after reasonable period of exploitation
  - Invention is divulged so that others can make improvements on it (rather than being held as a trade secret) or find some other route to the same end

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## Value of a patent

- Depends very much on
  - how fundamental (ease of circumvention)
  - breadth or narrowness of claims
- Preclude competition
  - or at least slow it down, or increase competitor's costs
- License for royalties
  - e.g. MPEG
- Develop portfolio for cross licensing
- Generate revenues from lawsuits
  - e.g. TI
- Increase asset value of small company
  - e.g. biotechnology

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## Software patents

- Traditionally disallowed
  - like scientific principles or mathematical formulas
  - software deemed a expression of a mathematical algorithm, hence can be copyrighted but not patented
- Is now allowed, but controversial

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## Problems with software patents

- Prior art poorly codified
  - Lack of long-term patent database
- Patent system moves much more slowly than the industry
  - 17-20 years is forever
  - employee turnover increases diffusion of ideas
- Proposals for a “patent lite”

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## Trade secret

- Law protects proprietary information:
  - court injunction against further use of usurped information
  - accounting and payment of all profits
  - or punitive damages if a violation is flagrant

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## Comparison

| Patent   | Trade secret  |
|--|---|
| <ul style="list-style-type: none"><li>• Can prevent others from using an idea</li><li>• Must reveal publicly</li></ul> | <ul style="list-style-type: none"><li>• Others can use idea as long as they develop it independently</li><li>• Can keep proprietary</li></ul> |

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## Copyright

- Grants author exclusive right to publish and sell a work for a very long time
  - In U.S., duration keeps getting extended (e.g. Disney)
- Holder:
  - Encourage creation or authoring with promise of control over dissemination
- Society:
  - Encourages orderly dissemination
  - Work becomes public property eventually

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## Limitations to copyright

- Fair use:
  - Quote or review
  - Make limited copies for purposes such as teaching a class
- Limited to *expression of facts or ideas*
  - Does not prevent others from creating independent works based on the same facts or ideas
  - Does extend to derivative works

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## Copyright in the digital age

- Cost of replication low, especially over Internet, so issues become ever more sensitive
- In U.S., copyright is implicit upon *fixation*
  - stored on non-volatile medium, such as disk or paper
  - no copyright notice required
- What is fair use
  - cache?
- Second use rights

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## Software copyright

- The major ownership protection
  - patents available, but less widely used
- License agreement can specify basically any conditions for use
  - no reverse engineering
  - no export
  - what machines it can execute on

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## Some forms of software licensing

- Freeware
- Shareware
- Royalty
- Copyleft
- Open source

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## Open source

- Open standard through collaborative distributed software development
- Arguments in favor
  - garner multiple expertise
  - higher quality
  - better security through scrutiny
  - triumph of populism over monopoly

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## Examples of open source

- Internet software
- Linux
- Netscape Navigator
- Apple Macserver
- Microsoft Office