How to avoid plagiarism

- **Cite** all considered ideas, perspectives.
  - *According to Narayanan & Vallor (2014), education in professional ethics is a kind of vaccination against self-serving thinking.*

- **Quote** all borrowed text.
  - *"Without a sense of professional ethics, individuals might justify to themselves conduct that would be much more difficult to justify in front of others." (Narayanan & Vallor, 2014).*

Narayanan, A., & Vallor, S. (2014). *Why software engineering courses should include ethics coverage.* Communications of the ACM, 57(3), 23–25. DOI:10.1145/2566966

Photographer, Wikipedia in copyright fight over viral 'monkey selfie' picture

- Wikipedia: Monkey took the photo.

- Photographer: travel, equipment, opportunity expense.

Computer Ethics (English)
Spring 2014
BLG412E
Intellectual Property

[-Theory-] [----Pratice----]

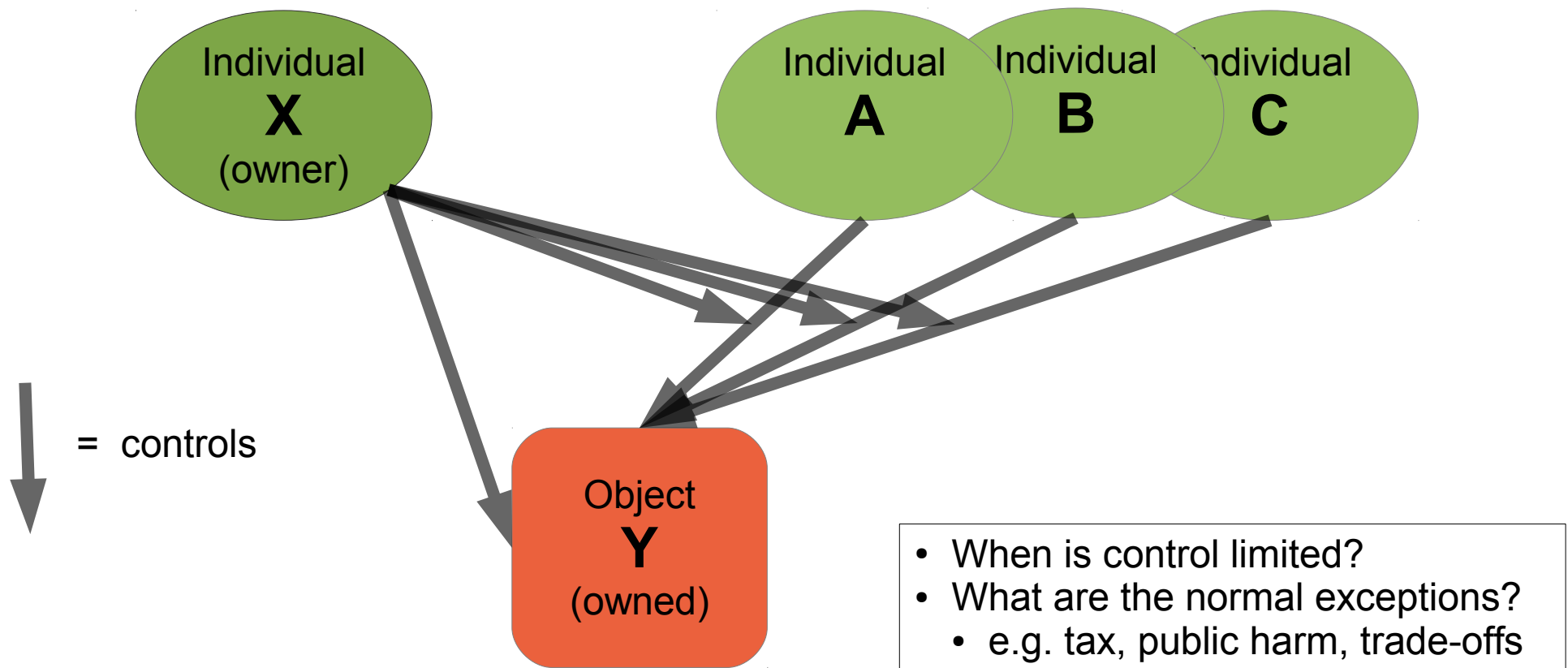**Contents of today's lecture**

Intellectual property:
- Definitions.
- Theories of Property:
    - Labour.
    - Utilitarian.
    - Personality.
    - Application: Piracy.
- Trade Secrets.
- Copyright.
    - Intro & criteria.
    - Exceptions: Fair Use & First Sale.
    - Reverse engineering.
    - Copying v. distribution.
    - Licenses.
- Patents.
    - Intro & criteria.
    - Software Patents.
    - Design Patents.
- Principles of Sharing:
    - Natural law.
    - Intellectual Commons.

# What is property?

*An object **Y** to which an owner **X** has the right to control access by other individuals (**A**, **B**, **C**).*

Individual **X** (owner)

Individual **A**

Individual **B**

Individual **C**

= controls

Object **Y** (owned)

- When is control limited?
- What are the normal exceptions?
  - e.g. tax, public harm, trade-offs

4

Characteristics of intellectual objects

Conventional Objects	Intellectual Objects
Concrete	Abstract
Exclusionary	Non-exclusionary
Constrained production	Easily reproduced
Contingent legal protection	Contingent legal protection
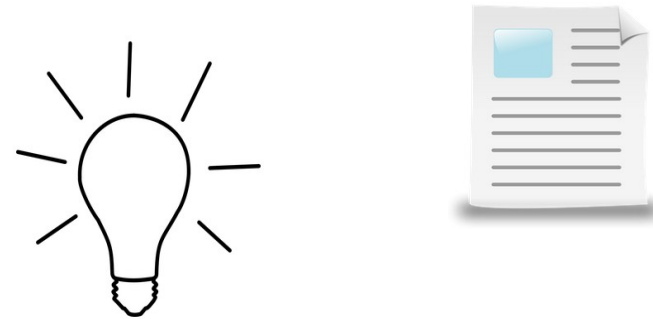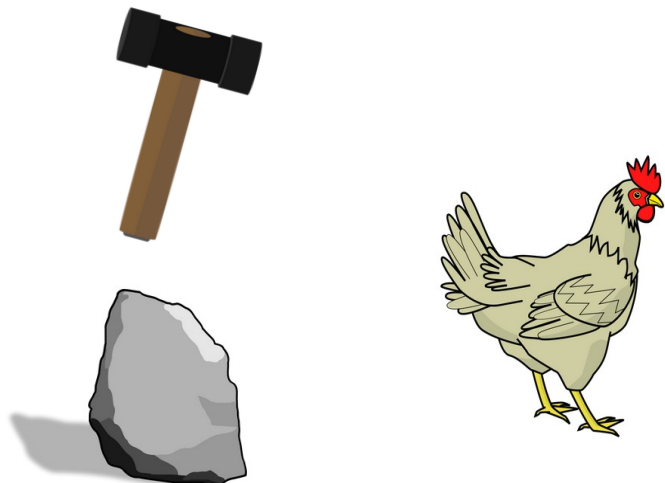
Kinds of intellectual property

Copyright	Patent
Expressions.	Functional ideas.
Must be original.	Novel, non-obvious.
Fixed in medium.	Material implementation.
Books, songs.	Machines, processes.
Software generally copyrightable.	Software **itself** generally not patentable (abstract idea) Needs *practical/technical application*.

Also:
- Trademarks.
- Trade secrets.
- Design patents.

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Spring 2014
BLG412E
Intellectual Property

**[-Theory-] [----Pratice----]**

Contents of today's lecture
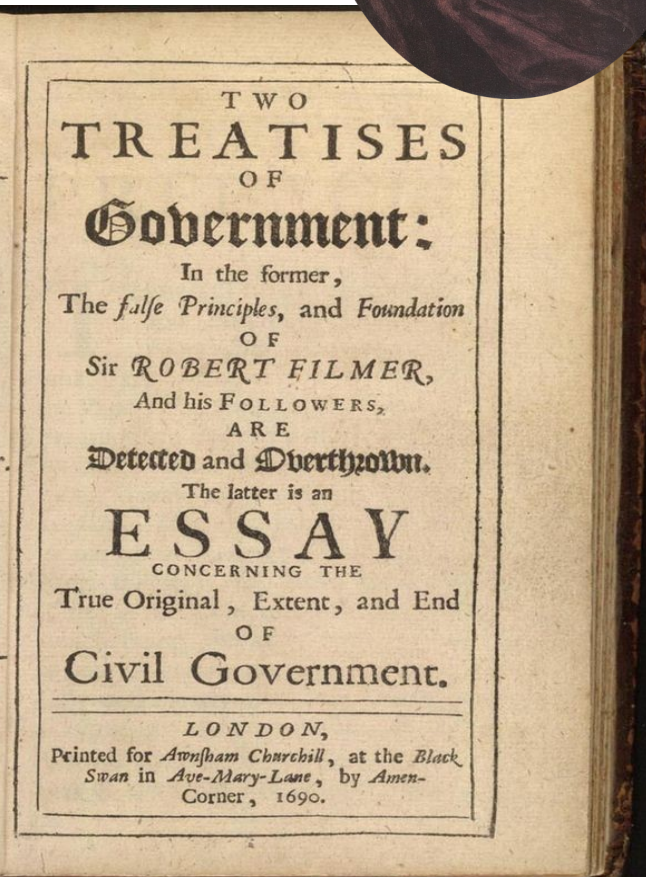
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Labour Theory of Property
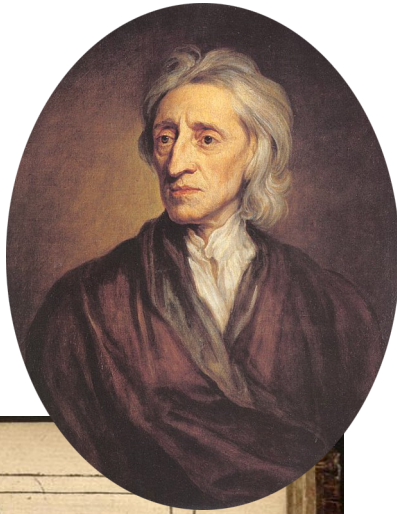
- Locke 1689:
  - People own themselves, their labour.
  - Mix labour with commons → own result.
- Issues:
  - What if I put labour into an unoriginal intellectual product?
  - Investment-based capitalism, monopolies: not labour-derived.

TWO
TREATISES
OF
Government:
In the former,
The *false* Principles, and *Foundation*
OF
Sir *ROBERT FILMER*,
And his FOLLOWERS,
ARE
Detected and Overthrown.
The latter is an
ESSAY
CONCERNING THE
True Original, Extent, and End
OF
Civil Government.

LONDON,
Printed for *Awnsham Churchill*, at the *Black Swan* in *Ave-Mary-Lane*, by *Amen-Corner*, 1690.

Profit off property without labour

Open Source Report
Joe Brockmeier

Anti-competitive Apple policies kill iOS app, company

Developers: Don't bet your future on Apple

By Joe Brockmeier on Wed, 05/11/11 - 11:45am.

The Seattle Times | **Microsoft**
Winner of Eight Pulitzer Prizes

44°F

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Originally published May 11, 2011 at 9:37 PM | Page modified May 12, 2011 at 7:53 AM

Comments (0)   E-mail article   Print   Share

Long antitrust saga ends for Microsoft

Microsoft has spent 21 years — more than half its lifetime — fighting antitrust battles with the U.S. government. Both sides will finally be at peace Thursday, when an antitrust consent decree expires.

Profit off property without labour

- 'The Network of Global Corporate Control':
  - A small core of companies control most other large companies.
  - Banks & financiers.

THE WALL STREET JOURNAL.

WSJ BLOGS

The Wealth Report
Robert Frank looks at the culture and economy of the wealthy.

September 22, 2011, 1:53 PM ET

Are We Entering the Age of Inherited Wealth?

Utilitarian Theory of Property

- Economic/material benefits.

  - Incentivise production.

- Intellectual property:

  - Incentivise invention.

  - Incentivise realising ideas.

- But can work other way:

  - Patent trolling.

  - Fear of litigation → reduced innovation.

Patent wars

SILICON VALLEY BUSINESS JOURNAL

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Mar 26, 2014, 6:33am PDT

Apple wins another patent case against Samsung — in Japan

Sarah Drake
Contributor-
Silicon Valley Business Journal

Apple Inc. has won another patent ruling against rival Samsung Electronics Co., this time in Japan. A court ruled Apple does not owe damages because it did not steal Samsung ideas.

cnet   Search CNET   Reviews   News   Video

CNET › Internet › Patent trolls curb innovation and cost the U.S. $29B in 2011

Patent trolls curb innovation and cost the U.S. $29B in 2011

A new study shows that patent lawsuits are not only costing the country billions of dollars but are also placing the burden on small and medium-size companies, which slows invention.

by **Dara Kerr** @darakerr / June 26, 2012 5:41 PM PDT / Updated: June 26, 2012 6:56 PM PDT

23 / 0 / 0 / 0 / more +

Patent lawsuits seem to be getting more common -- continually there are daily headlines of this company suing that company over intellectual property rights.
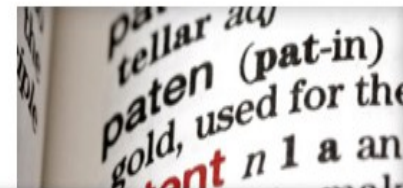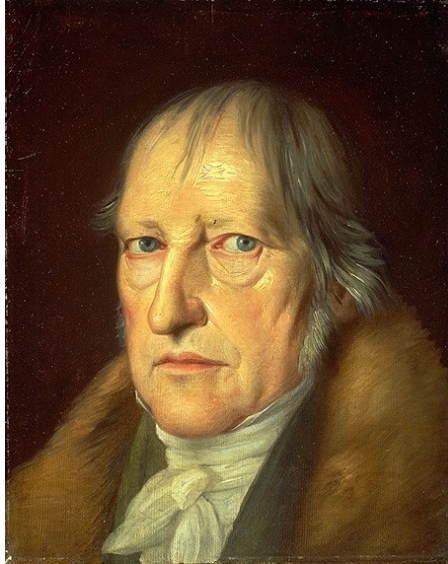
Like 1.5m   Follow @CNET   CNET

Software copying

- Where is the harm?
  - Lost opportunities?
  - Deprivation of property rights itself harm?
- Organised vs personal copying?
  - Scale.
  - Slippery slope?
    - (careful of slippery slope arguments)
  - Universality / deontology.
- Developing countries: excusable?

Personality Theory of Property

Hegel 1821:

1. Right to own personality, will inalienable.

2. Creations = expressions of personality, will.

3. Hence, right to those expressions.

Lennon/Beatles song "Revolution" used in Nike commercial after Lennon's death.
- Political song used for advertising.
- Is this okay?

Personality Theory of Property: Scenarios

- You develop privacy enhancing software,

  its owner sells it to an advertising company.

- You release open-source positive social game,

  it is used to build a shoot-em-up.

- You publish a computing article,

  - republished by publisher as excerpts.

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Intellectual Property

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Trade Secrets

TOP
SECRET

- Include:
  - Formulae.
  - Processes.
  - Designs.
  - Customer lists.
  - …
- Criteria:
  - Maintain competitive advantage.
  - Measures are taken to keep secret.
    - Non-disclosure agreements.
- Lapse:
  - Legally, never.
  - Except if secret escapes.
    - Reverse engineering = lapse.

Are Employment NDAs compatible with labour/ personality theory?

Trade secrets in recent news

- Microsoft employee.

- Gave away in-house software.

- Plea bargaining:
  - $22,500 restitution.
  - 3 months prison.

Additional detail:
MS looked at his Hotmail
email and IM for evidence...

COMPUTERWORLD PJM 1937-2014

Home > Management > Legal

News

Ex-Microsoft employee pleads guilty to trade secret theft

Prosecutors will recommend three-month prison sentence for insider who allegedly shared info with French blogger

By Gregg Keizer
April 1, 2014 02:45 PM ET   2 Comments

http://www.computerworld.com/s/article/9247358/Ex_Microsoft_employee_pleads_guilty_to_trade_secret_theft

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What is copyright? ©
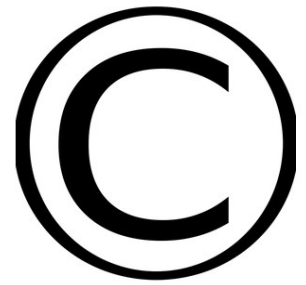
- Exclusive right over an **expression**.
  - Copying (e.g. photocopying book).
  - Deriving new works (e.g. editing book).
  - Distributing (e.g. selling book).
  - Performing (e.g. singing a song).
  - Displaying (e.g. showing art).
- Aim:
  - Encourage creators.
  - Should ultimately pass into public domain.

> **Algorithm = idea.**
>   - Not copyrightable.
> **Program = expression.**
>   - Copyrightable

What is copyright? ©
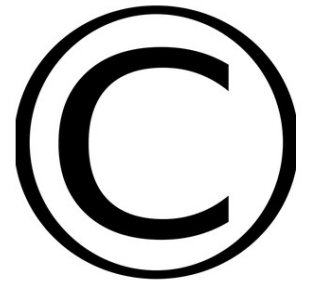
- Work needs to be:
  - Original.
  - Fixed in medium (e.g. paper, vinyl).
  - Non-functional (functional is for patents).
- Copyright generally transferable.

Case study: function

Lotus 1-2-3 vs Borland 1995:

- Menu layout "method of operation".
- e.g. buttons on a VCR.

Case study: `medium`

- MDY vs Blizzard 2008:

  - MDY sold "bot" to play Blizzard game.

    - Violates license agreement.

    - 2008: Copying program to RAM is copying:

      - Copyright infringement.

    - 2010 appeal: Copying program to RAM use - not copying.

      (but download of material from Blizzard's servers is)

See also: MAI Systems Corp v. Peak Computer, Inc. (in RAM is fixed in medium)

Do you copy a painting into your brain/retina?

Period of copyright

- Turkey/Europe:
  - Lifetime of author + 70 years.
- US: complicated.
- Maximum:
  - Lifetime of author + 100 years.

Case Study: Project Gutenberg.
- Transcribe classic books online.
- Follow US copyright law.

Case Study: Eric Eldred.
- Published classic (out of copyright) books online.
- DMCA made these again copyright.
- Lost his court case.
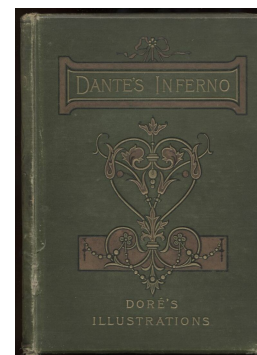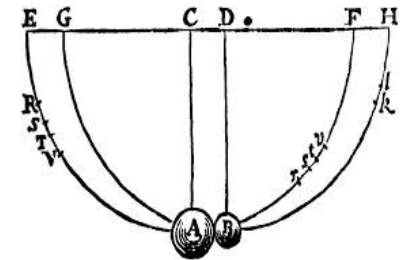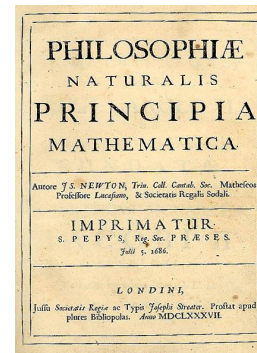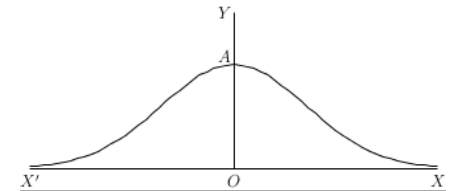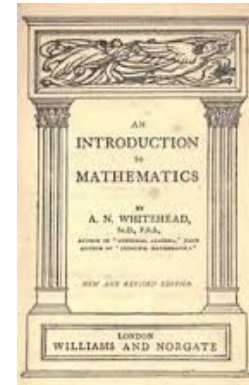
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Exceptions to copyright I: Principle of Fair Use

- Limited use for:
  - Comment.
  - Criticism.
  - Teaching.
  - Research.
  - Scholarship.

Example:
Showing Dilbert cartoon in class studying cartoon styles?
Showing Dilbert cartoon in math class to add levity?
Showing Dilbert cartoon in a business meeting to illustrate math idea?

Exceptions to copyright I: Principle of Fair Use

Considerations:

- Transformative quality.
- Commercial vs non-commercial.
- Nature of original: Factual? Fictional?
- Substantiality of original.
- Effect on use of original.

Generally allows reverse engineering.

Exceptions to copyright II: Principle of First Sale

- Buyer can:
  - Give away.
  - Resell.
  - Destroy.
- But much software governed by single-use licenses.

Example:
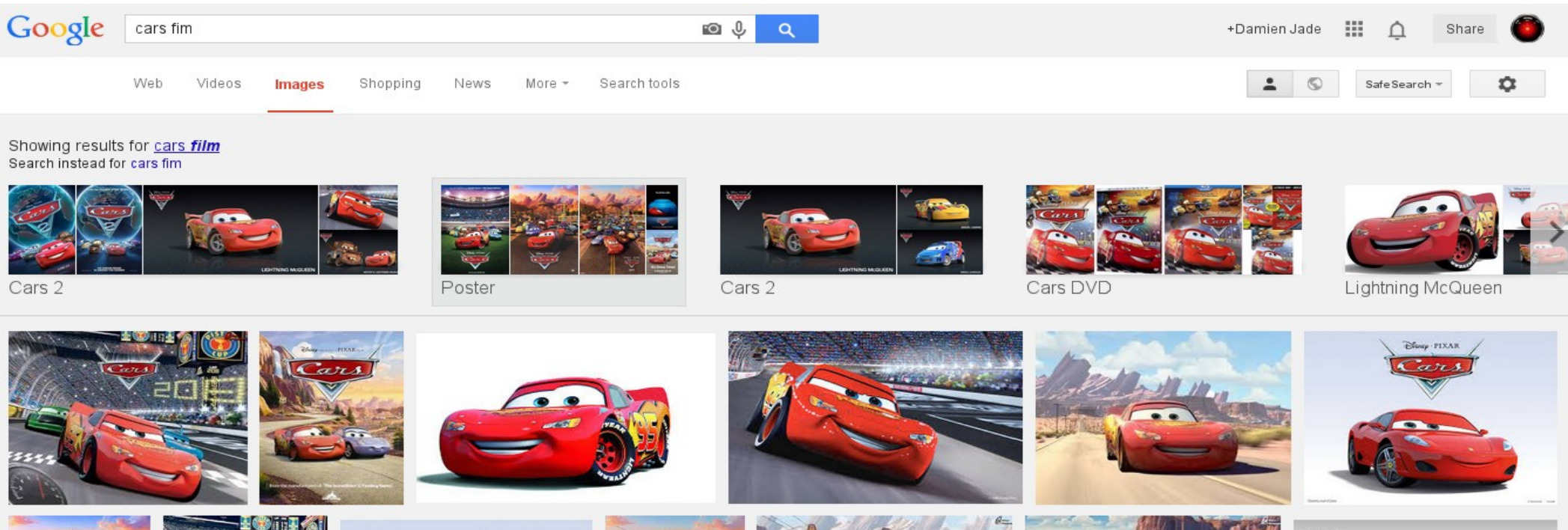Buy textbooks and give to class?
Buy textbooks and photocopy to class every year?

Fair Use example

- Perfect 10 v. Amazon et al.
    - Thumbnail images "highly transformative".
    - Inline images pass "server test" (this time).

Direct linking not permitted

An anti-hotlink measure

API copyrights a "threat" to tech sector, scientists tell Supreme Court

At stake: "Unprecedented and dangerous power over the future of innovation."

by **David Kravets** - Nov 9, 2014 4:00pm EET

APIs Copyrightable?

◆ <u>Oracle</u>: API = text: copyrightable!

◆ <u>Google</u>: API functional.

◆ <u>Appeals court</u>: No. Could have been different (expression) at *time of expression*.

API re-use fair use?

◆ <u>Google</u>: Interoperability.

◆ <u>Oracle</u>: Android not a drop-in replacement for Java.

◆ What about WINE, Samba project?

  ◆ Competition law instead?

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Reverse engineering

- Normally allowed:
  - Principle of Fair Use: research, scholarship.
- US DMCA: except circumventing digital protection.

Case Study: Adobe Software v. Dimitri Skylarov 2001
- Sklyarov & co. reverse engineered Adobe eBook reader.
- Traveled to US to present results at conference.
- Sued by Adobe, US government.
- Let off: lack of intention to allow piracy.

History of Copyright Protection

- Early 19th century:
  - Human readability made a requirement.
- Conceptual muddles - code:
  - Machine code readable?
  - Medium for expression?
  - Functional?
- 1980s - now:
  - Policy vacuum.
  - Intellectual property laws getting stronger.

Contributory infringement?

- Sony vs. Universal Studios 1984:
  - VCRs used to copy material.
    - Contributory infringement.
  - Legitimate purposes exist:
    - Saving for later.

- Universal City Studios vs. Reimerdes 2000:
  - *deCSS* for accessing region-locked DVDs.
  - DMCA > fair use.
  - In Norway: won appeal.

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Distribution/indexing vs. copyright

- A&M records inc. v. Napster:
  - **Napster:** Index for P2P network.
  - Shut down: contributory copyright infringement.

- Safe harbour (from DMCA):
  - Protects legitimate service providers.
  - Take-down notices.
  - *Napster benefiting materially from illegal copying.*
    (not eligible)

Napster Successors		
Service	**Intention**	**Legal target**
Gnutella	Fast transfer protocol	Individuals
Torrents	Distribute responsibility	Trackers, individuals

ISOHUNT – safe harbour not applicable

ars technica

IsoHunt's Fung helped users infringe, blew off "red flags," say judges

File-sharing services face a practically unbroken string of court losses.

Where is the onus to take down copyright content?

- Users?
  - Frequently don't know what fair use is.
- Content providers?
  - Not in the business of understanding content.
- Copyright holders?
  - Police the whole internet?

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DMCA Procedure for copyright infringement

1. Copyright holder → Content Provider:

   Takedown notice.

2. Content Provider complies.

3. Sharer → Content Provider:

   Counter notice.

Napster, Isohunt ineligible for safe harbour because benefiting directly from illegal content.

Case study: takedowns

Lenz v. Universal Music Corp.

- Lenz posts Video → Youtube.
  - ♀ *Prince* song playing in background.
- Universal Studios → Youtube:
  - Takedown notice.
- Lenz → Youtube:
  - Counter notice.
- Sued Universal: misrepresentation.
- Judge: Copyright owners must consider fair use.
  - Only minimal research required.

Is my use of this video in this slide allowable under copyright law?

DMCA notice compliance: Overzealous?

Content providers frequently take down more content than necessary. E.g.

- Website hosting.
- Blog hosting.

techdirt

Textbook Publisher Pearson Takes Down 1.5 Million Teacher And Student Blogs With A Single DMCA Notice

from the *38-year-old-content-in-a-5-year-old-post-equals-1.5-million-dead-blogs* dept

techdirt

UPDATED: The True Damage Of An Illegitimate DMCA Takedown Goes Much Further Than Simple 'Inconvenience'

from the *we're-done-breaking-your-stuff,-you-can-have-it-back-now* dept

DMCA notice compliance: Potential for abuse?

Many spurious notices sent.

- E.g. silence opponents, critics.
- E.g. automatic search & takedown.

arstechnica

Site plagiarizes blog posts, then files DMCA takedown on originals

Stories about a disgraced researcher get pulled by WordPress.

by John Timmer - Feb 6 2013, 1:33am EET

COPYRIGHT SCIENCE POLICY AND EDUCATION 109

cdt KEEPING THE INTERNET
OPEN • INNOVATIVE • FREE
CENTER FOR DEMOCRACY

CDT Releases Report on Meritless DMCA Takedowns of Political Ads

October 12, 2010

Email this page

Filed under *Digital Copyright, More Issues in Digital Copyright*

Content providers pro-active take-downs

- Content providers take down content without court order.

    To avoid being sued later.

- User: no legal recourse (license).

Forbes

Paul Tassi, Contributor
News and opinion about video games, technology and the internet
+ **Follow** (965)

TECH | 12/11/2013 @ 9:15AM

YouTube Unleashes Strange Storm Of Copyright Claims On Video Game Content Producers

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[-Theory-] [----Pratice-----]

Private Property Model

- Source code trade secret.

- Machine code distribution copyright controlled.

- Use permitted by license.

  - Not selling program → selling *use of program*.

Private Property Model: Typical licenses

- Right to return product.

- Activation, change of machine controlled.

- Reverse engineering as far as law requires.

- No guarantee.

- No liability.

Open Source Model

- Software can be customised.

- No lock-in.

- "Cathedral v. bazaar" philosophy.
  - "Many eyes".

Open Source Model: Typical license: GPL

- Any use possible.

- Any distribution possible (including sale).

- Any alteration possible.

    - GPL: *Share-alike restriction*.

- No guarantee.

- No liability.

Other Open Source licenses

- Non share-alike:
  - BSD.
- Dual licensing:
  - QT, MySQL (Java).
- Also:
  - LGPL, Apache, Mozilla...

- Documentation:
  - GNU Free Documentation License.
- Creative Works
  - Creative Commons.

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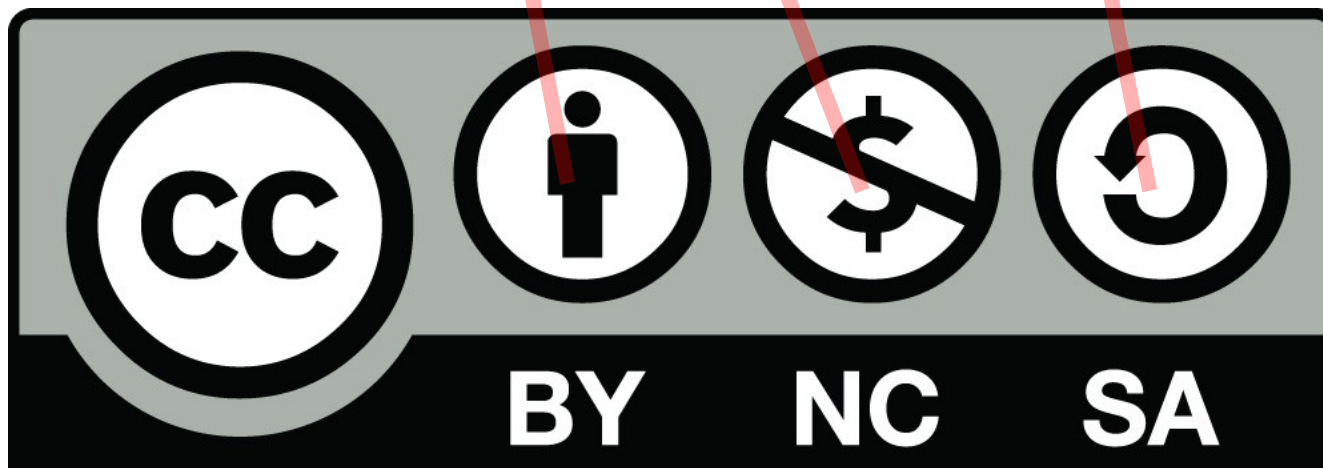
US court says software is owned, not licensed

Software company Autodesk has failed in its bid to prevent the second-hand sale of its software. In a long-running legal battle it has not been able to convince a court that its software is merely licensed and not sold. | 05 Oct 2009

Topics ▶ E-commerce and the internet | General contract and boilerplate | Corporate | Software | TMT & Sourcing

Like many software publishers Autodesk claims that it sells only licences to use its software and that those who pay for it do not necessarily have the right to sell it on. It sued Timothy Vernor, who was selling legitimate copies of Autodesk software on eBay, for copyright infringement.

The US District Court for the Western District of Washington has backed Vernor, though, in his claim that he owned the software and had the right to sell it on.

First-sale often upheld in courts.

http://www.out-law.com/en/articles/2012/july/downloadable-software-can-be-re-sold-by-purchaser-ot-for-different-number-of-users-than-originally-licensed-ecj-rules-/
http://www.itproportal.com/2009/10/26/us-court-says-software-owned-not-licensed/

53

Channel Register

High Court rules software liability clause not 'reasonable'

Supplier should have given more appropriate demo

A software company's stipulation that customers could not take action against it for the poor performance of its software was unfair and could not be enforced, the High Court has said.

The software company should have alerted its customer to problems with the product when demonstrating it and chosen more demonstrations for it that more closely matched the customer's own business requirements, the Court said.

Licenses need to be reasonable.

http://www.channelregister.co.uk/2010/05/12/red_sky_liability_ruling/

Computer Ethics (English)
Spring 2014
BLG412E
Intellectual Property

[-Theory-] [----Pratice----]

> **Contents of today's lecture**
> **Intellectual property:**
> - Definitions.
> - Theories of Property:
>   - Labour.
>   - Utilitarian.
>   - Personality.
>   - Application: Piracy.
> - Trade Secrets.
> - Copyright.
>   - Intro & criteria.
>   - Exceptions: Fair Use & First Sale.
>   - Reverse engineering.
>   - Copying v. distribution.
>   - Licenses.
> - Patents.
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>   - Software Patents.
>   - Design Patents.
> - Principles of Sharing:
>   - Natural law.
>   - Intellectual Commons.

Patents

- Patents: For inventions.

- Criteria:

  - Novelty.

  - Applied to technical problems.

  - Non-obviousness.

- Design Patents (EU: RCD):

  - Novelty.

  - Non-functionality.

  - Non-obviousness.

Independent invention? *Irrelevant.*
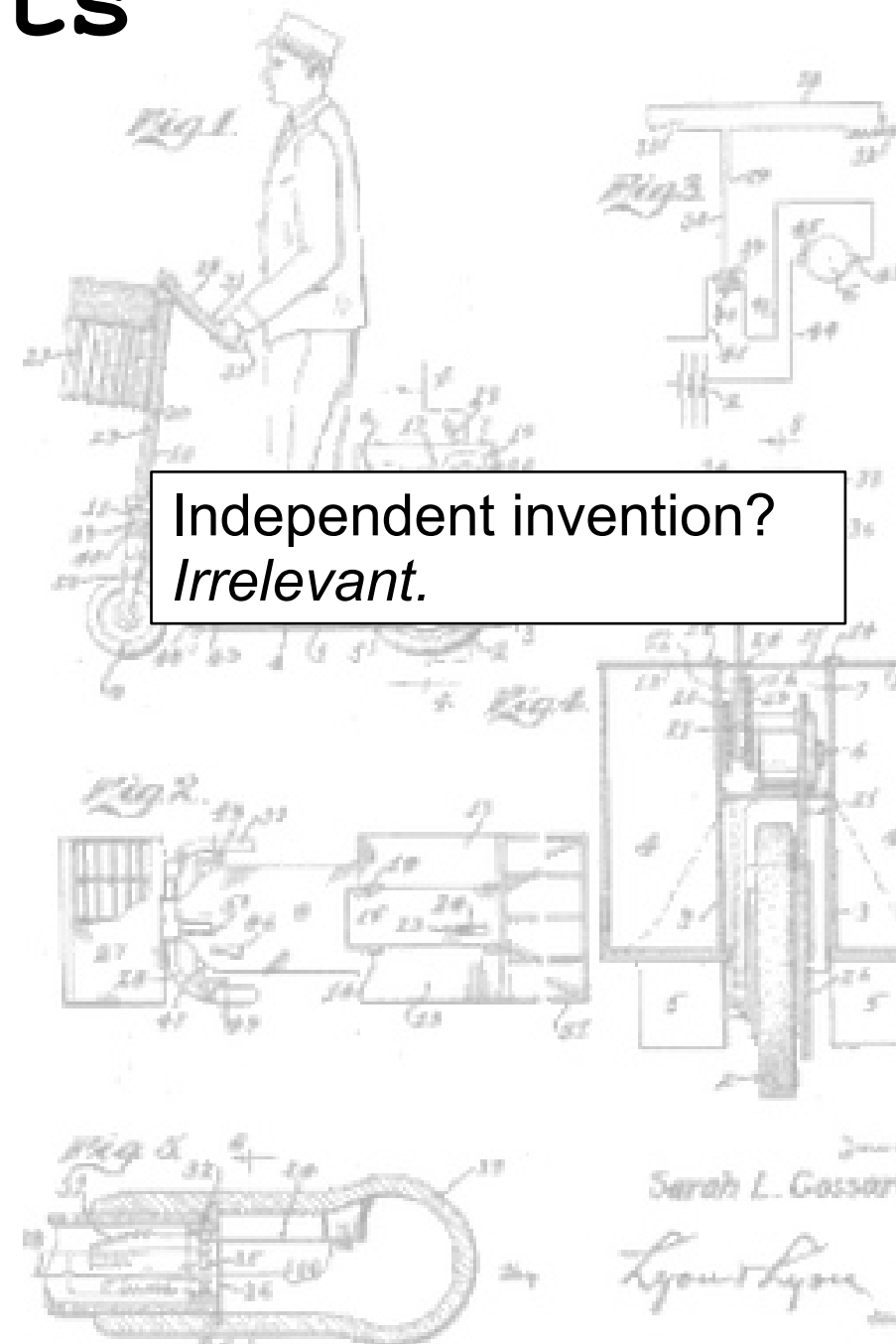
Patents protect...

- Manufacture.
- Use.
- Sale.
- Right to license.

  For about 20 years (varies).

Patenting process

- Time-consuming.
- Expensive.
- Hard to evaluate.
  - (Prior art search).
- **Patent acceptance ≠ court acceptance.**

Patent problems

- Un-patentable patents given.

- Used to prevent competition.

    - "Patent pools".

    - Licensing terms should be fair, reasonable, non-discriminatory.

Patent problems

- Defensive patenting → offensive (Apple).

- Patent trolling:

  - Not to use, just to sue.

  - Use only after popularity increases.

- This is not what patents are for!

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Software patents:
possible somewhere, sometime

- Gottschalk v. Benson 1972:

    - Decimal-binary conversion algorithm.

    - Judge: Algorithm abstract like math.

- But frequently granted (e.g. LZW, RSA).
- 1994: US Federal court: programs not abstract.
- EU: "programs for computers excluded"

- More relevant than copyright?

http://www.oreillynet.com/pub/a/network/2005/03/08/softwarepatents.html

http://cpip.gmu.edu/2013/09/18/a-brief-history-of-software-patents-and-why-theyre-valid-2/

GIF case

- GIF uses LZW compression, patented.

- 1994 Unisys licensed LZW to Compuserve for GIF.

- PNG alternative.

- Patent now expired.

  - Never was tested in court.

Web browser plugins

◆ Eolas v. Microsoft.

  ◆ Web browser plugins patent.

  ◆ 2005 settlement.

  ◆ 2009 Eolas sued 22 companies.

  ◆ 2012 *Viola* creator demonstrated prior art.
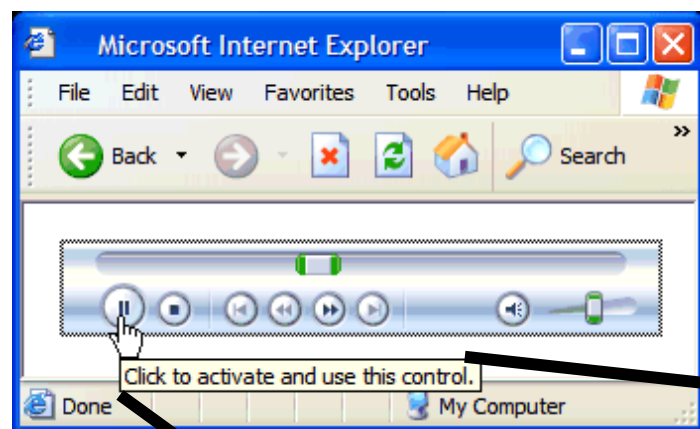
Click to activate and use this control.

(a defensive legal measure)

Case study: Amazon 1-click.

- 1999 patent:

    - 1 click shopping (using cookies).

- In the US: enforced.

- In the EU: denied on appeal.

    - Too obvious.
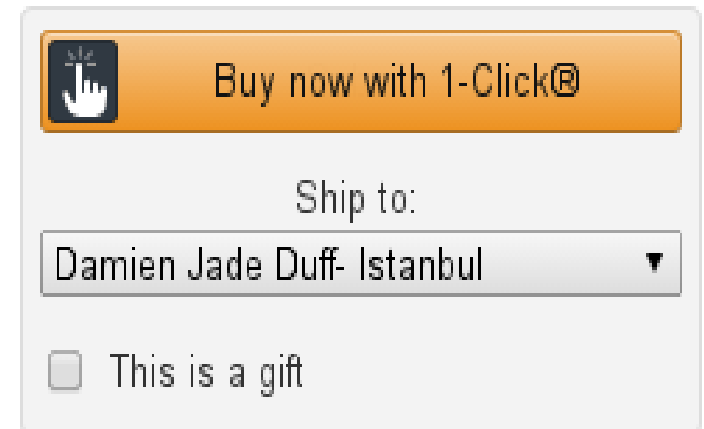
Alice Corp. v. CLS Bank International.

Process patented:

Safe trading with trading software + intermediary (pseudocode).

Cons:

- Known approach but on computer.
- Abstract, trivial.
- Judge: Patents not increasing competition.
- Alice Corp: Far from trivial.

IBM:
Worry about novelty not abstractness.

CNNMoney 🌐 **FORTUNE** ▾

Supreme Court to decide when ideas become too 'abstract' to patent

FORTUNE

Microsoft patent 2010: personal data mining
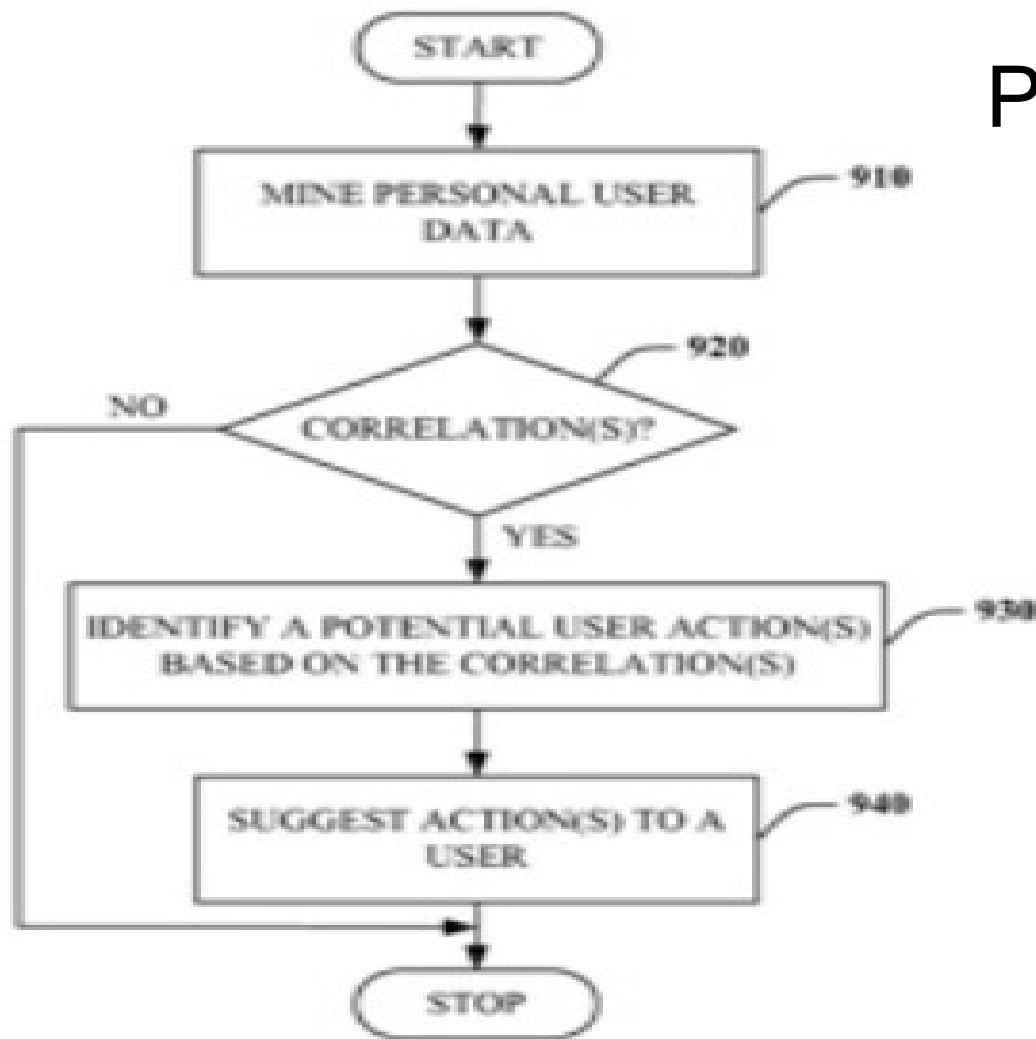
Patent-worthy?

2012:
Microsoft buys 800 patents from AOL.

Google patent 2011: notification of delivery time
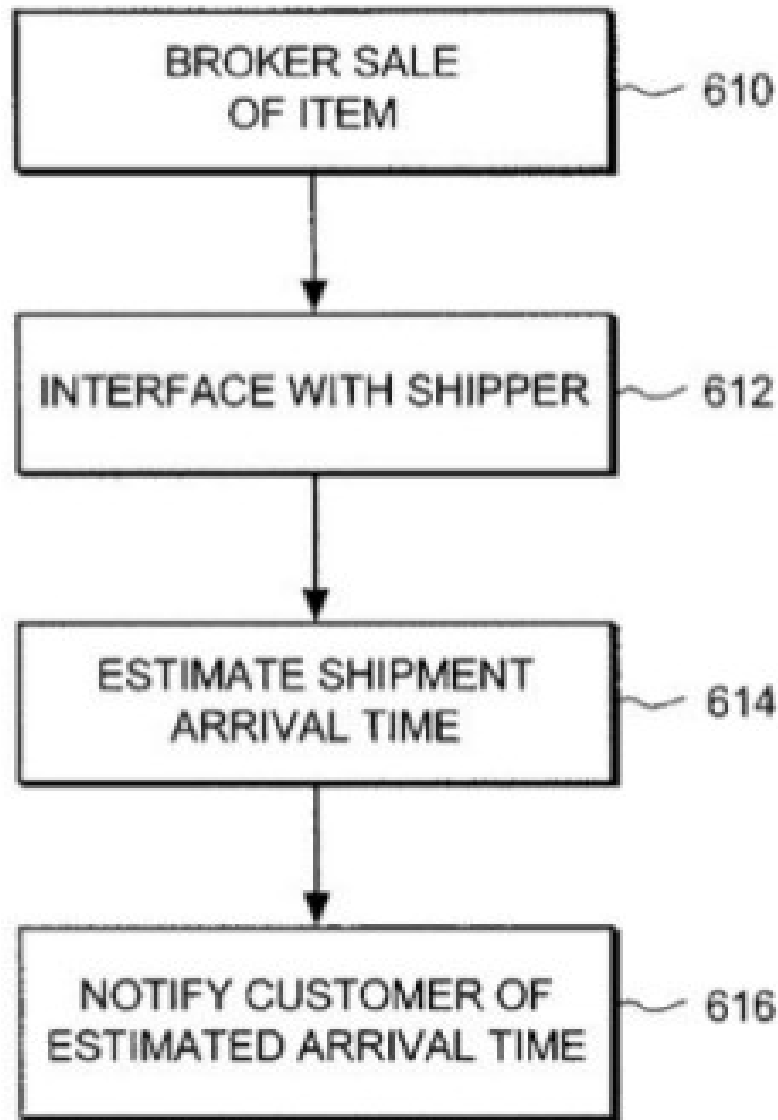
Patent-worthy?

Apple & google patented slide-to-unlock 2011,2010
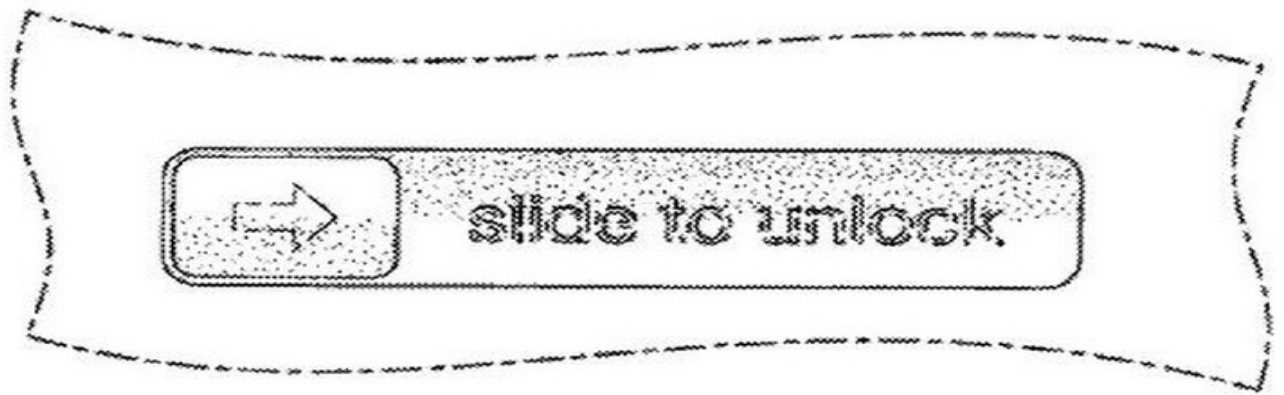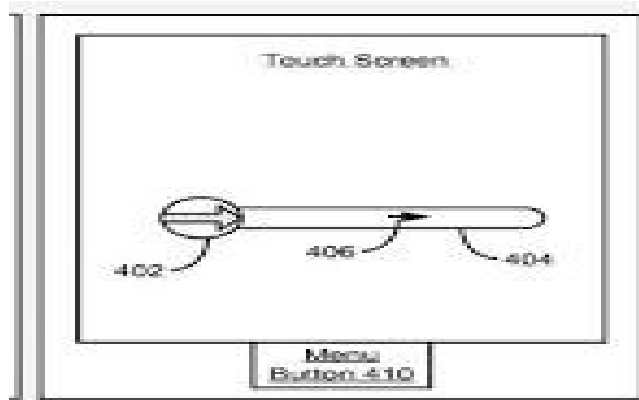
1991 demo.

Prior art?

Apple v. Samsung, HTC

- Apple tablet & phone *design patents (RCDs)*.
  - Tablet with rounded edges, ornament-free.
  - Phone with rounded edges, thin rounded back, single button.
  - Phone with rounded edges, smooth button.
  - ...
- Courts around the world.
  - Some wins, some losses.
  - Filing more patents.
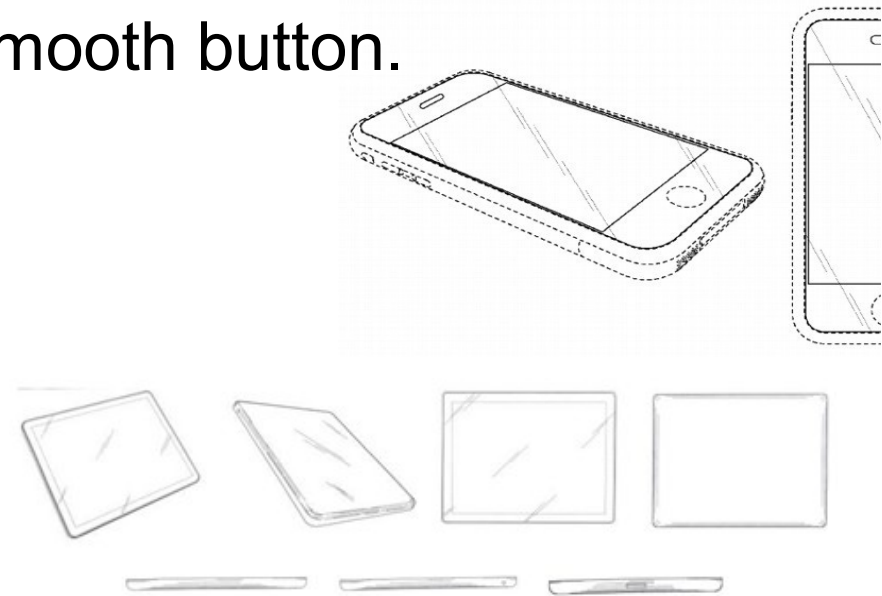
Response

PCWorld » Blogs » Today @ PCWorld

Recommend   0 Comments   Print

TODAY @ PCWORLD

Apple to Samsung: Don't Make Thin or Rectangular Tablets or Smartphones

By Melanie Pinola, PCWorld   Dec 5, 2011 8:50 AM

EU: rounded edges "banal".

But: many wins for Apple.

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Interests and ethical positions: paradox?

	Business lobbyists	Individual rights activists
Position on privacy	Pro-sharing	Pro-protection
Position on intellectual property	Pro-protection	Pro-sharing

"Information Wants to be Free"
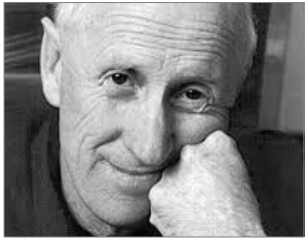
Descriptive (Brand):

Information <u>is</u> difficult to keep secret.

(even though it is valuable)

Normative (Stallman):

Useful information <u>should</u> be distributed.

(because it is valuable)

Both privacy and intellectual property would need to be enforced.
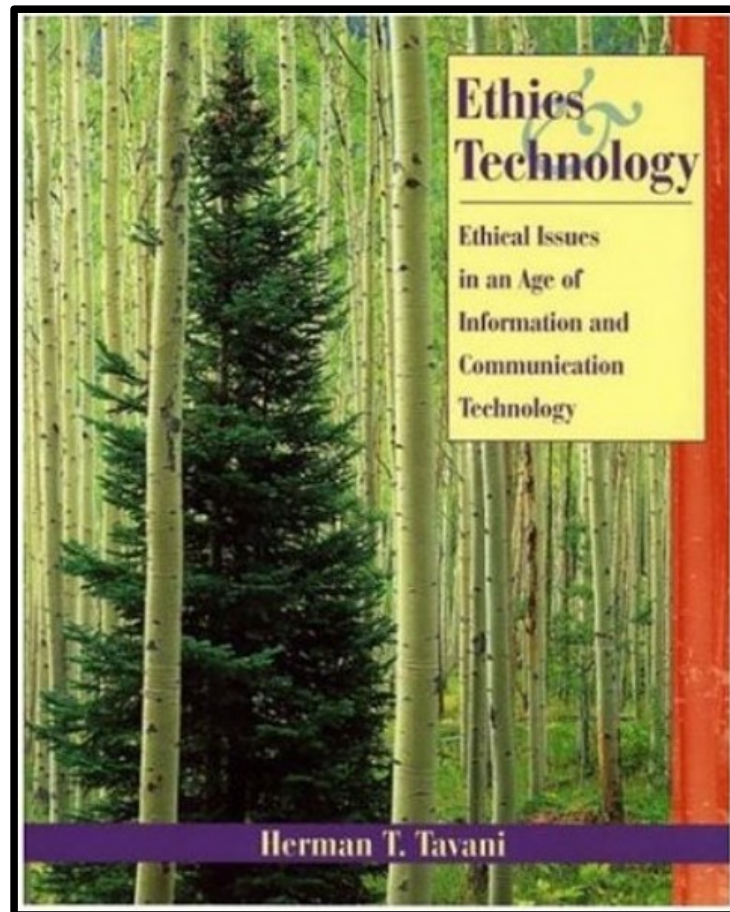
Intellectual Commons

- Tragedy of the Commons.
- Mouse:
  - Xerox → Apple → PC
- HTTP:
  - Never patented...
- Gotshalk v. Benson 1972
  - ...what if?
- analogy with environment – commons v. property rights

Reading:

Tavani Chapter 8: Intellectual Property Disputes in Cyberspace
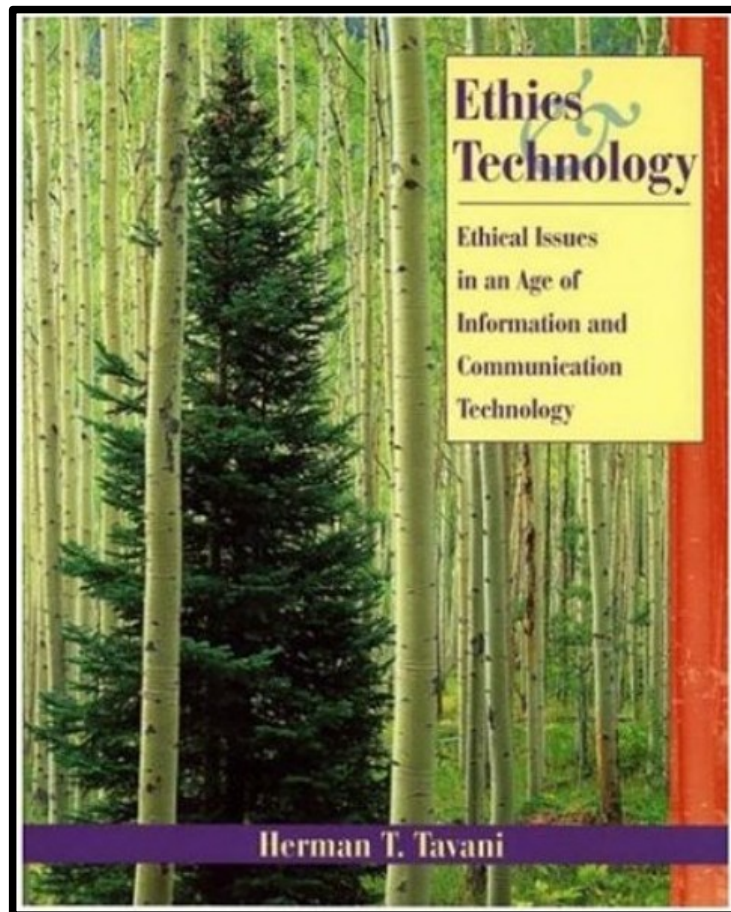

8

Also see:
Picker, R.C. (2012). The yin and yang of copyright and technology.
Communications of the ACM. 55(1). 30-32.

Reading for next time:

Tavani Chapter 9: Regulating Commerce & Speech in Cyberspace

Tavani Chapter 11: Community & Identity in Cyberspace. Sections 11.1 & 11.2.

10

11.1

11.2