

digital intellectual property

Burak Galip ASLAN, PhD

facts

Do entertainers
have the right to
control who sees
and hears a
performance of
their music?

Also troubles
about cover
music and dance
music

BUSINESS

Phone Recordings of Concerts Are More Than Just Annoying, They're Potentially Illegal: Guest Post

3/17/2017 by [Rachel Stilwell](#), [Makenna Cox](#)



Michael Tullberg/Getty Images

Atmosphere shot of a cluster of cell phones at the 'LAoki' concert in Downtown Los Angeles on May 16, 2015 in Los Angeles.

facts

- about 40% of software installed on personal computers worldwide and about 80% of software in China was obtained illegally

HIGHEST PIRACY		LOWEST PIRACY	
Georgia	95%	United States	20%
Zimbabwe	92%	Japan	21%
Bangladesh	91%	Luxembourg	21%
Moldova	91%	New Zealand	22%
Armenia	90%	Australia	25%
Yemen	90%	Austria	25%
Sri Lanka	89%	Belgium	25%
Azerbaijan	88%	Finland	25%
Libya	88%	Sweden	25%
Belarus	87%	Switzerland	25%

- is it fair for some people to pay full price for software when so many others are getting the same programs for little or no money?

facts

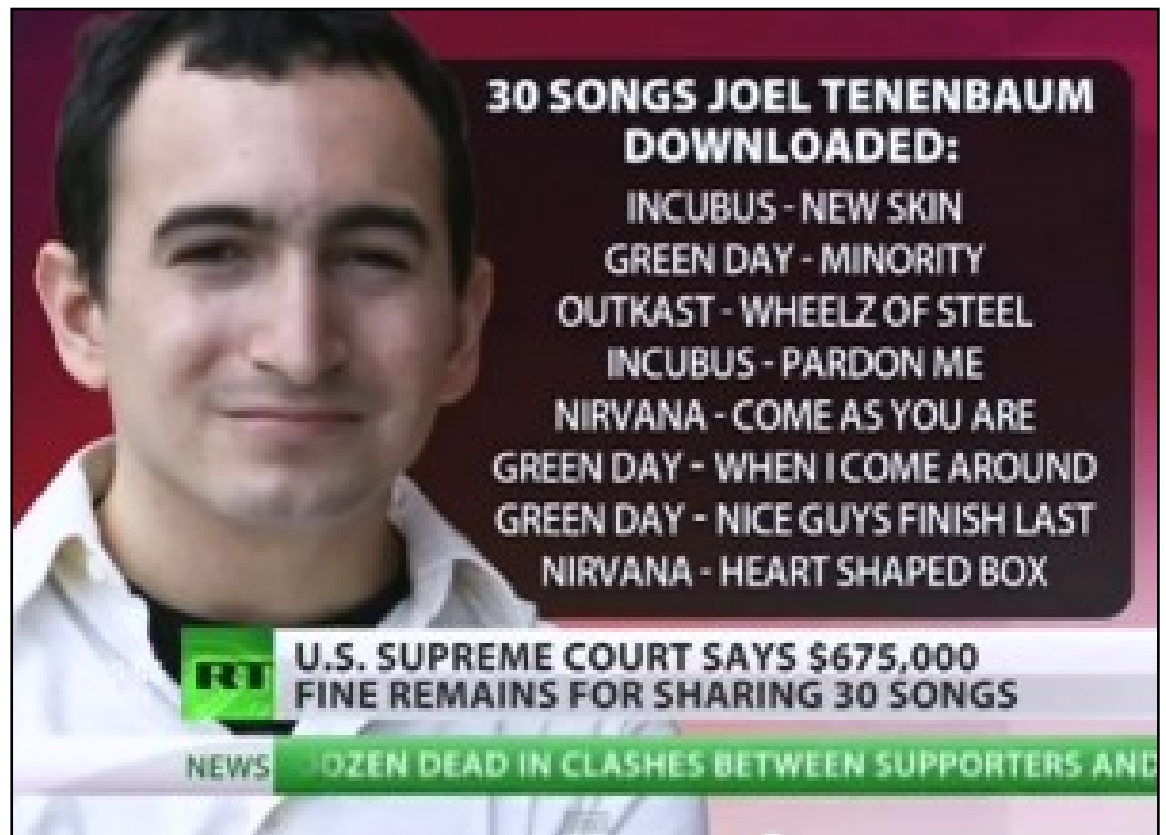
- half of teenage Internet users in America admit to downloading music files



- The Recording Industry Association of America (RIAA) identifies file sharers and lawsuit -> but settle for \$3000 to \$5000

facts

- Boston University grad student Joel Tenenbaum didn't settle and found guilty by downloading and sharing 30 songs and fined by \$675.000
- 2003-2007-2016
- Started with;
- \$3500 vs. \$500



facts


- meanwhile The Electronic Frontier Foundation runs a “LET THE MUSIC PLAY” campaign to change copyright laws!

Tired of being treated like a **criminal for sharing music online?**

You're in good company. Over 60 million other music fans use peer-to-peer programs like Kazaa and Morpheus to share their favorite tunes. Yet the record labels are bullying ISPs and hunting down college kids in an effort to shut down file sharing.

Isn't it time for a new approach? The Electronic Frontier Foundation thinks so. We believe the answer lies in a model that fairly compensates artists while supporting music lovers. Join EFF today so the music can play on.

**File-Sharing:
It's Music to our Ears**



The image shows five people of varying heights standing in a line against a white wall with a height chart. From left to right: a woman, a man, a woman, a man, and a man. The height chart on the wall has markings for 4, 5, and 6 feet. The people are standing on a blue floor.

 **Stand up for your right to share the music you love!**
Join EFF today at www.eff.org/share.

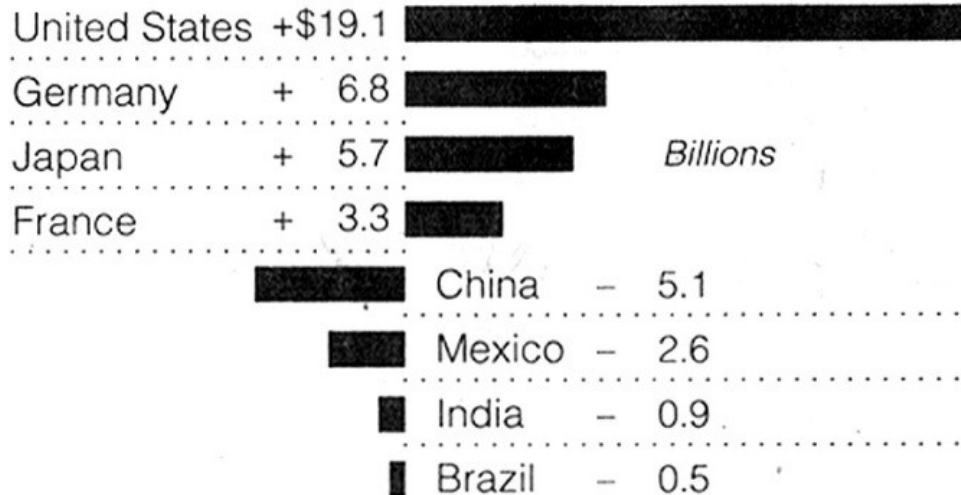
facts

creating the **first copy** is very expensive...

The Rich Would Get Richer

If a global agreement on intellectual property rights goes fully into effect, the developed nations, led by the United States, would gain the most, according to World Bank estimates. But developing nations would pay more.

Estimated annual changes in net receipts and payments for patent licenses and royalties as a result of full application of the World Trade Organization's Trade-Related Intellectual Property Rights Agreement.



Source: World Bank

The New York Times

duplicates cost almost nothing...

what is intellectual property?

any unique product of human intellect (books, songs, movies, paintings, inventions, chemical formulae, and... computer programs) -> i.e. NOT the piece of paper!



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people have right to own property... but do they have the right own intellectual property as well?



the complexities of digital property

10/135

mainly from reproducibility, no notice from
copying

the complexities of digital property^{11/135}

mainly from reproducibility, no notice from copying

definitions: hw, sw, algorithm, source “human read”, object “computer read” (binary expression in machine language),
compilation source -> object

the complexities of digital property^{12/135}

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rivals target algorithm

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sw -> new type of entity

the complexities of digital property^{14/135}

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Internet is a very serious threat to copyright owners, case after case

protecting property rights in software^{15/135}

uncertainty in cases, proprietary software could not be fit anywhere exactly

protecting property rights in software^{16/135}

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copyright, trade secrecy, patent

legal tools create proprietary software

protecting property rights in software

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also FOSS (Free and Open Source Software) movement

copyright

no reproducing without permission

**idea cannot be copyrighted, expression of
ideas can!**

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1. idea v.s. expression doesn't cover functionality or behaviour

2. what is an infringement? (replacing variable names???)

copyright

five principal rights of owner:

1. reproduce the copyrighted work
2. distribute copies of the work to public
3. display copies of the work in public
4. perform the work in public
5. produce new works derived from copyrighted work

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sell a license to high school drama club or fee from each broadcast on radio over ASCAP, BMI or SESAC (*all like MÜYAP*)

copyright

infringement -> burden of proof on copyright holder to prove infringement (1984, Franklin v.s. Apple case, object code copied)

Apple vs. Franklin

Franklin Computer copied Apple ten years before Microsoft's Windows 95 and 25 years before Google's Android.



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in addition, the need for proving “access” to programs v.s. “not on their own”; easy for marketed, harder for internal

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Digital Rights Management (DRM), preventing copying by software and hardware locks



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controversary, DRM not like copyright, no year limit and violation sanctions are heavy, especially scientists are worried (2001, Russian programmer, Dimitry Sklyarov, arrested in US after a conference, spoke about DRM algorithms, held in prison for months, reverse engineering issue for integration, objection against DRM and esp. for DMCA)

copyright

industry relying on copyright protection law;

literature, music, theatre, film, the media,
photography, software, visual arts, advertising
services and collective management societies

In 2021, the core copyright industries added \$1.8
trillion dollars of value to U.S. GDP, accounting for
7.76% of the entire U.S. economy

The core copyright industries employed 9.6 million
American workers in 2021, accounting for 4.88% of
the nation's workforce and 5.53% of total private
employment in the United States



copyright

Basic Books vs. Kinko's Graphics Corp.

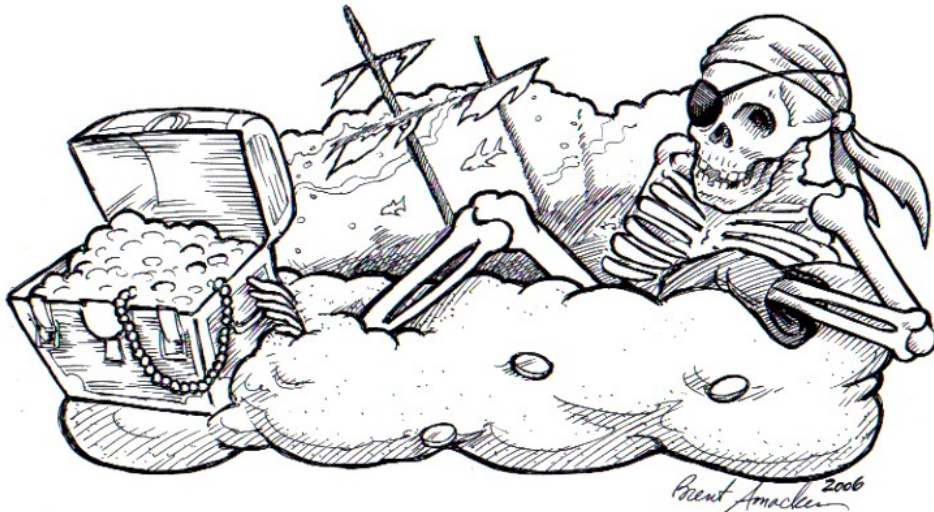
university professors contacted, readings planned in courses, packets of reading materials for students, chapters from books, 1991 Kinko infringement decision by court, Kinko pays \$510 thousand to eight book publishers, Kinko gets out of business



copyright

Davey Jones' Locker

Richard Kenadek, BBS, \$99/year for subscribers, copies of more than 200 commercial programs, 1994 indicted for infringement, 6 months home confinement, 2 years probation



copyright

No Electronic Theft Act

1994, David LaMacchia, MIT student, posted copyrighted sw on a bulletin board in university computer, users downloaded more than million dollar worth sw in less than 2 months, case dropped because he didn't profit, loophole fixed by No Electronic Theft Act legislation in 1997

criminal offense -> simply to reproduce or distribute more than \$1000 worth of copyrighted sw in a six-month period



copyright creep

threatening the chain of creativity and innovation

Sonny Bono Copyright Term Extension Act of 1998

- if work published before 1978

author life time + 70 yrs after death

- if the work is a **Work made For Hire**

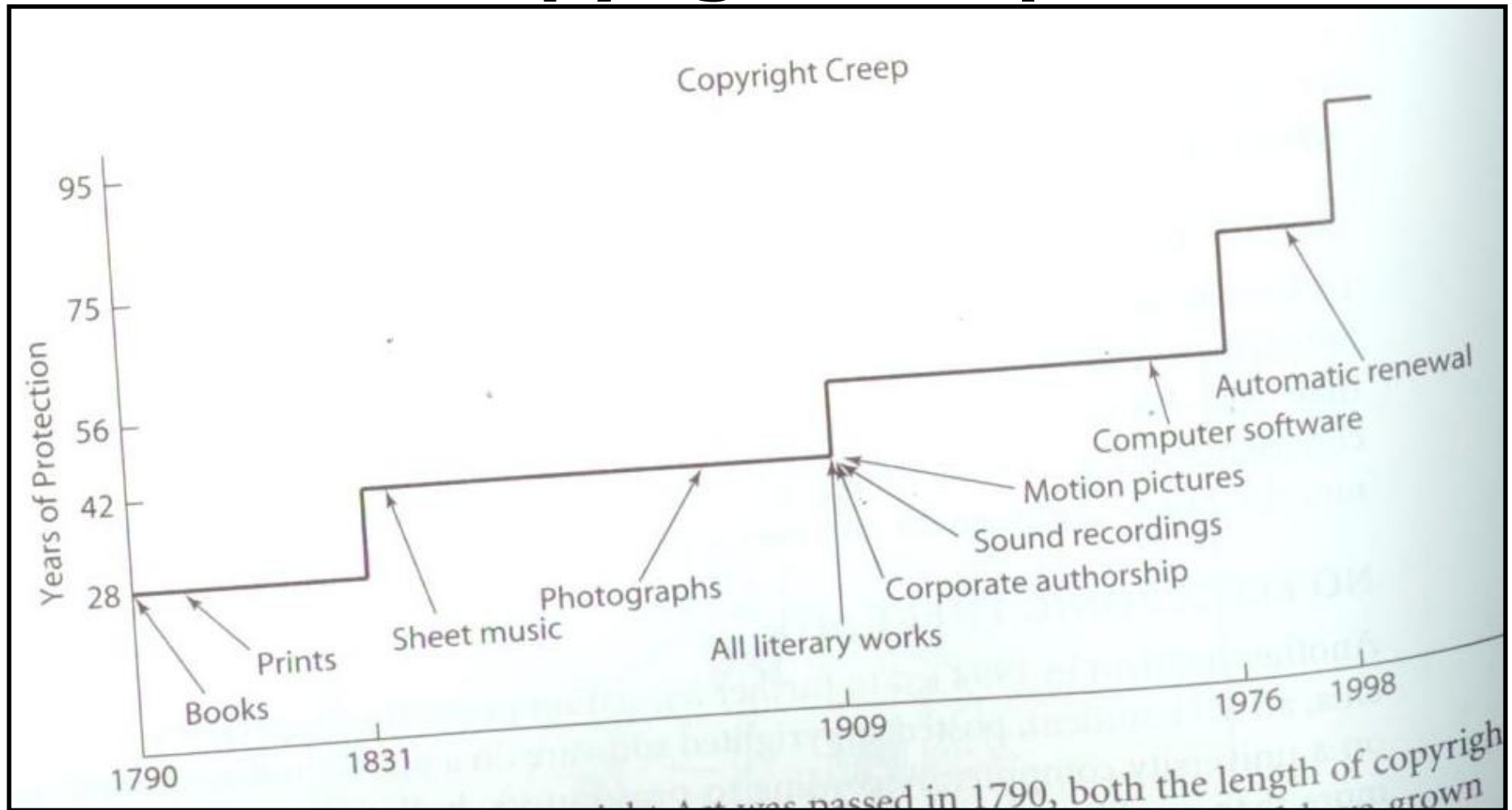
(WFH – author owns not the employee)

publication + 95 yrs

creation + 120 yrs



copyright creep



"Happy Birthday to You" song (1893), Clayton F. Summy Co. (now a subsidiary of Time Warner) copyrighted the song in 1935, TV networks must pay Time Warner to air it, about \$2 million revenue each year

fair use

- 1- purpose (educational < commercial etc.)
- 2- nature of work (nonfiction < fiction)
- 3- how much of work (brief < entire chapters)
- 4- affect the market (out-of-print < readily available work)

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example 1: journal articles from lib, some students take them, others complain, posts them in website with pw to class (+,+, -,+)

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example 2: art professor, photos from reproduction book in slides, (+, -, -, ?)

fair use

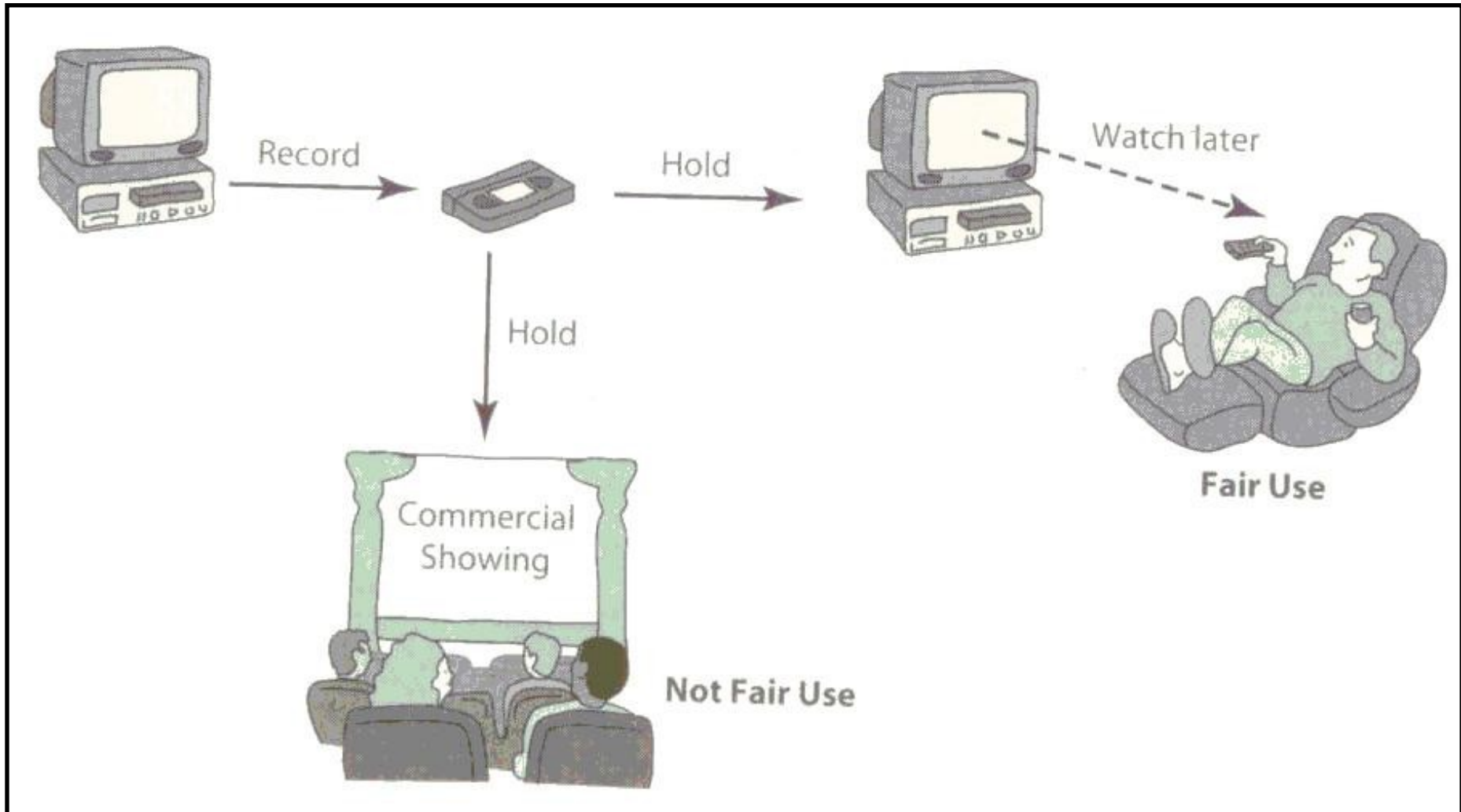
Sony vs. Universal City Studios

1975, first consumer VCR, "time shifting"
practice, Universal sued Sony (+,-,-,.....+)

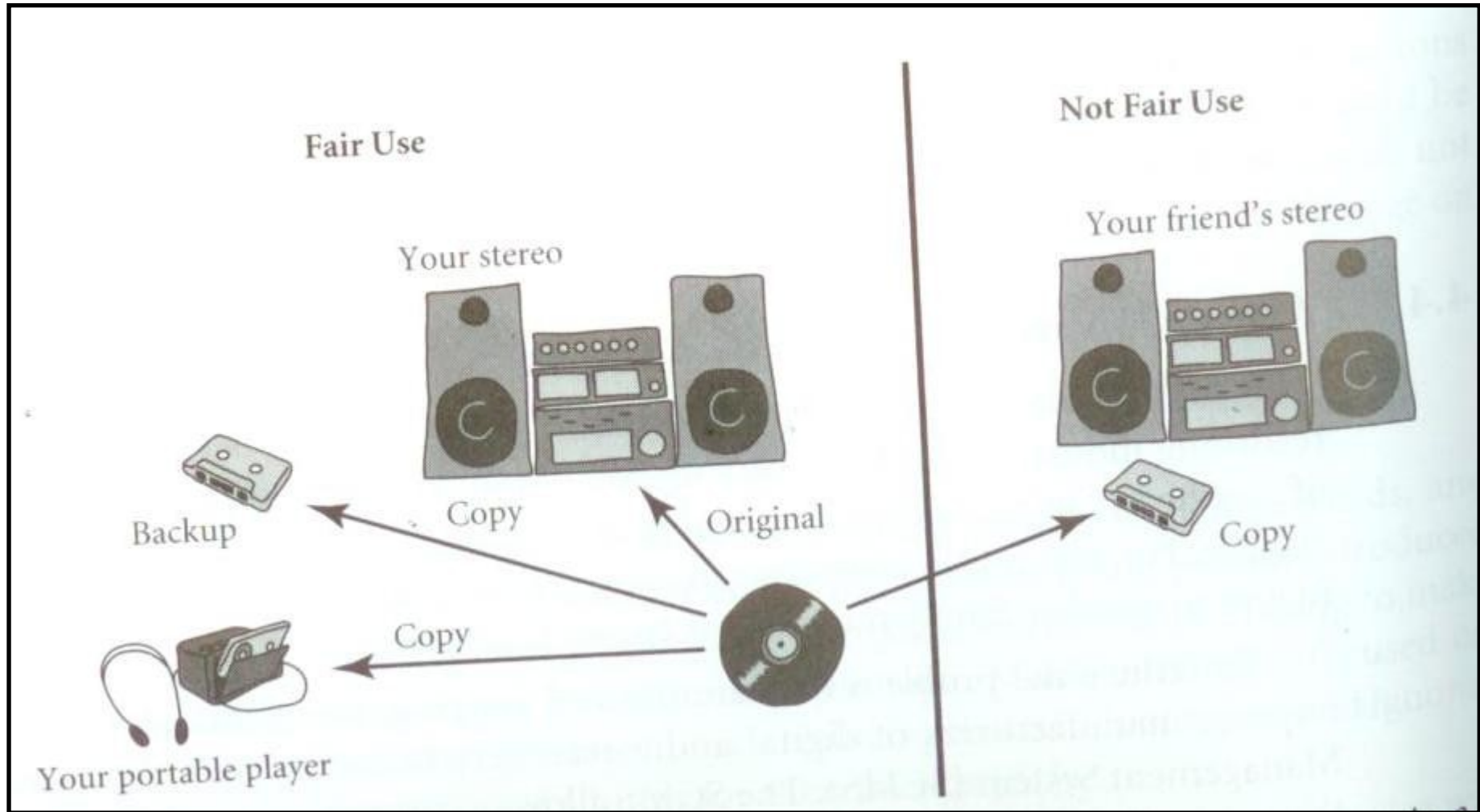
the supreme court ruled 5-4 decision for fair
use

The Sony logo, consisting of the word "SONY" in a bold, black, sans-serif font.

time shifting fair use



space shifting fair use



peer-to-peer networks and more

universities had been caught in the middle...



trade secrecy

widely different, in general give companies the right to keep certain kinds of information secret, supporting competitiveness (*Google keeping search engine algorithms secret*)

e.g.

formulas, processes

proprietary designs

strategic plans

customer lists

... other collections of info



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in court, trade secrecy

- 1) have novelty
- 2) represent an economic investment to claimant
- 3) have involved some effort in development
- 4) company must show effort to keep it secret

adv: they do NOT expire by any means

disadv: confidentiality problem (movie, reverse eng.)

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software: nondisclosure clauses in contracts of employees, licensing agreements for end users (*no copying or revealing for employers even after leaving, customers not selling or giving away copies*)

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- widely different, even in same country; no protection for taking general knowledge

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some companies using web-based (server-based) programs, remote-working (*web search engines*)

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bottomline: for trade secrecy to be licensed and used, some form of the software often has to be put into public realm, **powerful yet impossible or at least impractical**

patent protection

strongest protection -> monopoly on the use of invention (usually for 20 yrs)

exact opposite of trade secret -> needs detailed description of the invention is put on public

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utility patents, design patents and plant forms

utility patents for sw (17 yrs + 5 yrs)

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patent protection for fostering and invention and innovation (rewarding is a means but not an end from Kantian perspective)

sharing inventions in public realm with patent protection

patent protection

1-encouraging invention

2-inviting inventions to public realm

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1-permissible subject matter

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1-permissible subject matter (problem here)

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(sw fits to process or a part of process)

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what subject matter is transformed by sw? mental steps?

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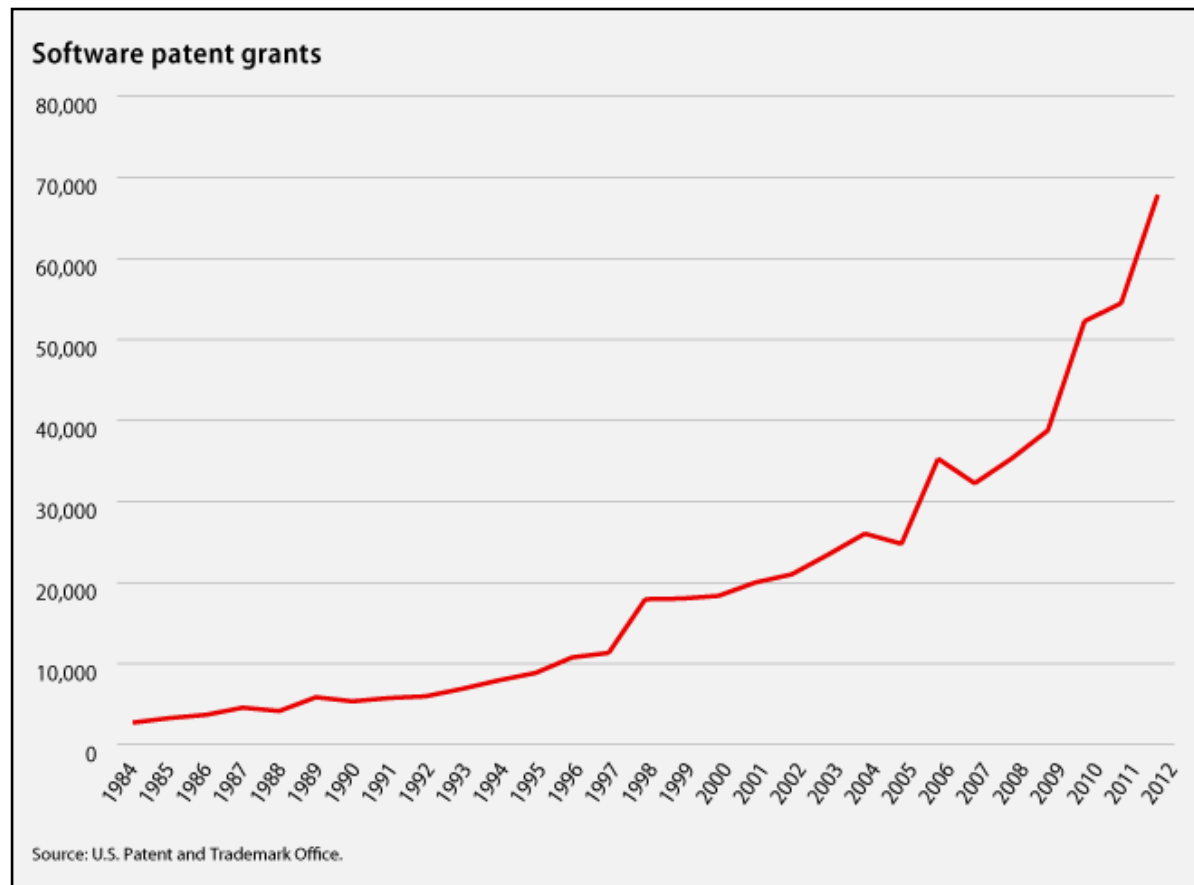
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~9000 sw patents (1960s – 1992), +1300 of patents in 1992, +11600 in 2004, +40000 in 2007, as of 2015 500.000 software patents in 23 different categories in US alone

patent protection

concerns about too much sw patents nowadays
building blocks of sw are becoming proprietary
via patents

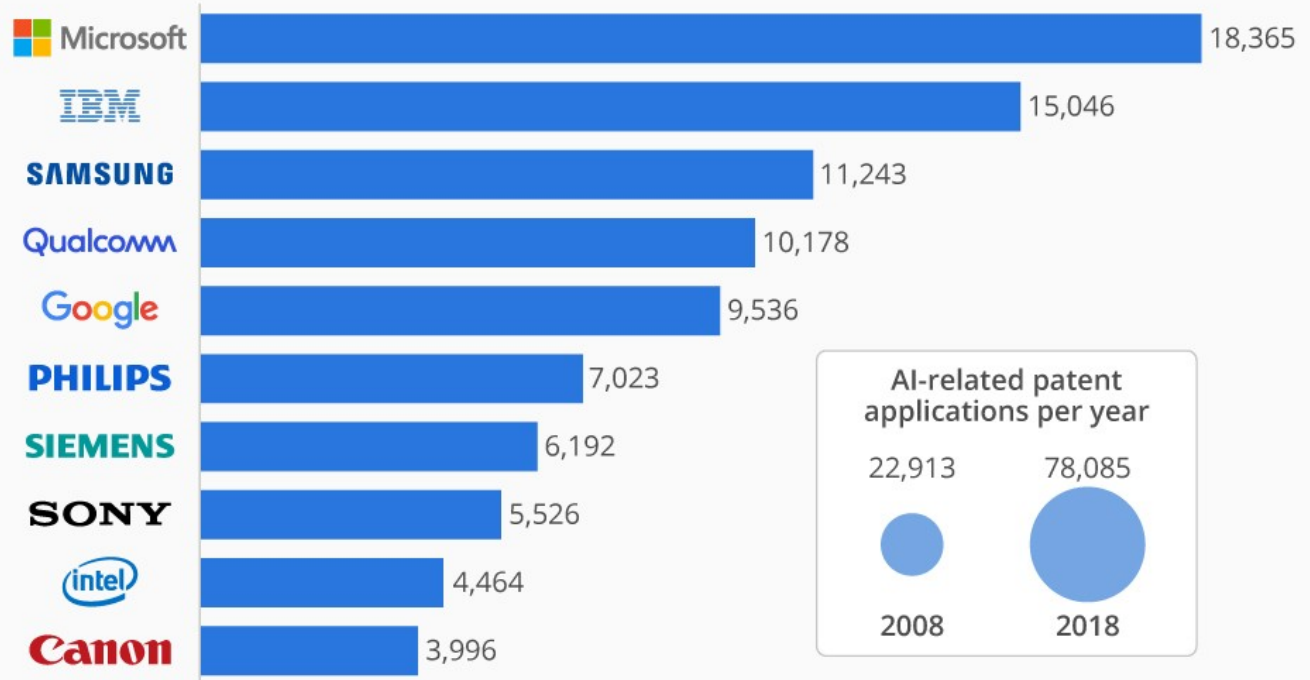


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The Companies With the Most AI Patents

Companies with the most artificial intelligence-related patents*



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investment cost in sw dev < patent search <
lawsuit costs (if infringement)

serious barrier for small businesses

patent protection

Polaroid vs. Kodak, Kodak first instant cam (60 secs) in 1976, 1985 court decision Kodak infringed 7 of 10 patents of Polaroid, +6 yrs Kodak paid Polaroid \$925 million and left business



Dr. Edwin H. LAND

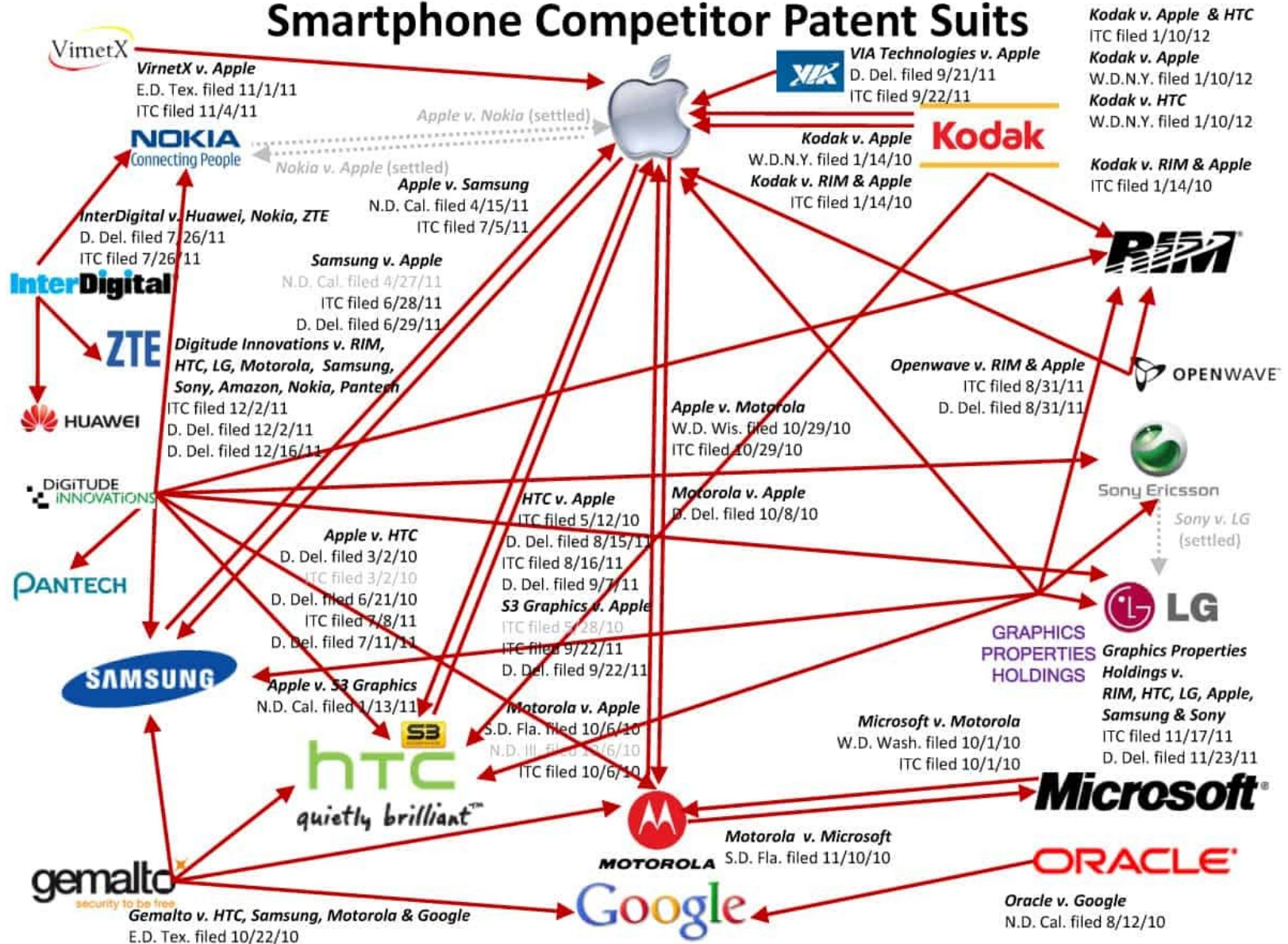
(1909 – 1991)

American scientist and inventor



patent protection

Smartphone Competitor Patent Suits



trademarks and service marks

trademark: word, symbol, picture, sound, color or smell used by a business to identify goods

service mark: mark identifying service

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governmental right, brand name, “aspirin”, “xerox”, “google” ... latter distinctive product is disadvantageous – try to keep it by ads!

avoid usage of nouns and verbs

promote adjective use

yo yo, aspirin, thermos, brasserie, *selpak(?)*, *jilet(?)*, *bankamatik(?)*, *pimapen(?)*; promote as *dove* *nemlendirici?*

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“photoshopping” images, Adobe Photoshop trademark, slang users are warned, Adobe doesn’t need to contact anyone before sueing, protected by law

free and open source software

track 1: proprietary sw (PS) protected by copyright via copyright, trade secrecy and patent

track 2: produced and distributed under FOSS categories (transparency, user-customization)

Richard Stallman's criticisms

- copyright systems designed in an era when copying was hard. Digital tech. made copying trivial -> leading to **harsh measures** -> leading to infringement on our liberties



Richard Stallman
(1953 -)
software freedom activist

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 - owning intellectual property!?
- friends vs. owners
- "cooperation is more important than copyright"

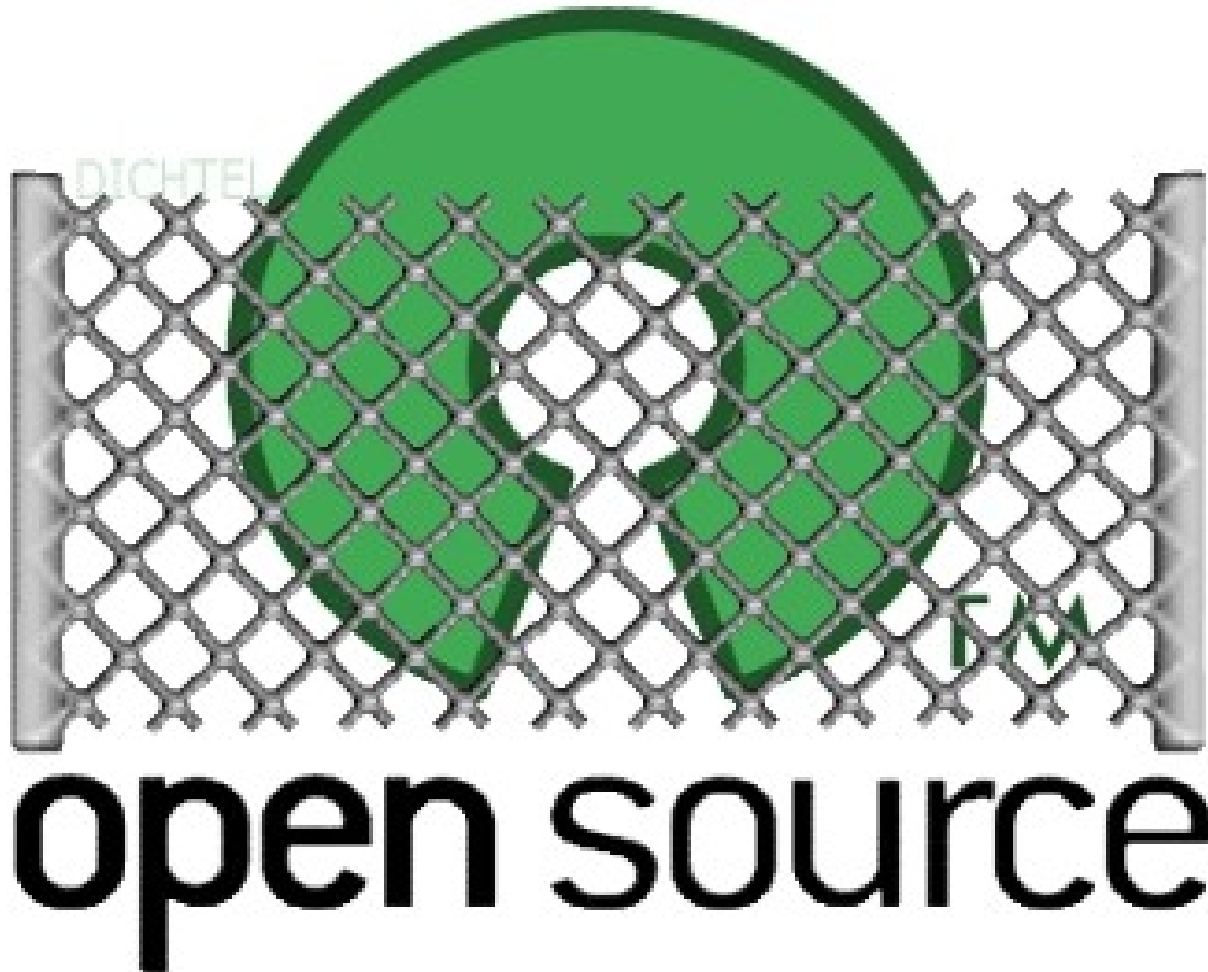


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LEADING to OPEN-SOURCE SW MOVEMENT



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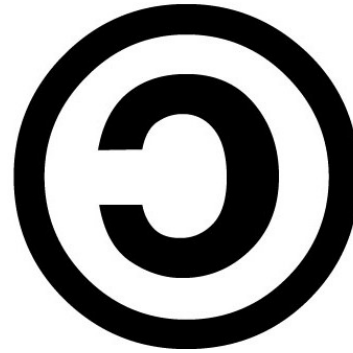
FOSS encourages user to run, redistribute, and modify the code (also restrictions on reuse of code)



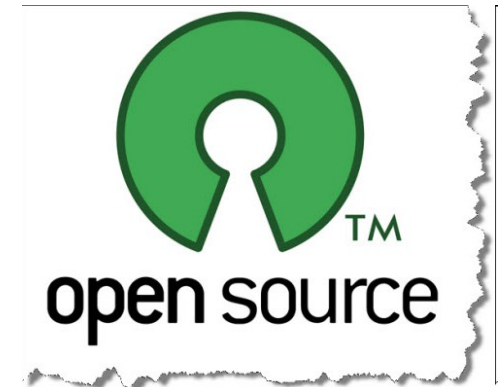
free and open source software

three important approaches to digital “sharing”

1- free software (FS)



2- open source software (OSS)



3- creative commons (CC)



free software (FS)

users run, copy, distribute, study, change,
improve sw (FS Foundation – FSF)

the key is when FS licensed, the code
incorporated to another programs also have
to be FS (“copyleft”) – “viral” scheme that
free quality of code infects whatever code it
touches

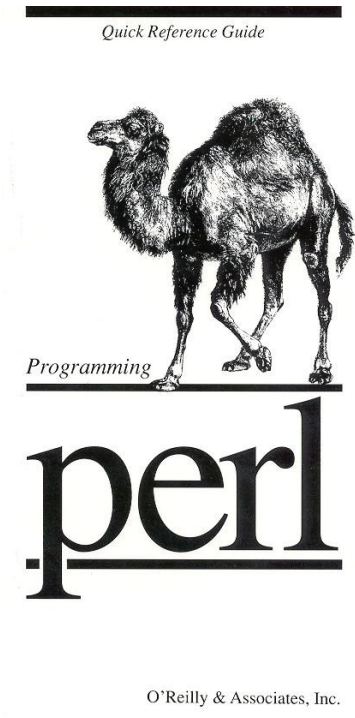


open source software (OSS)

open source initiative (OSI)

no restrictions like FS

(not licensed with General Public License)



open source software (OSS)

success story: GNU's Not Unix -> GNU

THE GNU PROJECT: leading to **GNU/Linux**

Unix-like OS consisting entirely of open-source software ... Richard Stallman (most of necessary components), Donald Knuth (TeX typesetting system), MIT (x-window system), Linus Torvalds (kernel)



Massachusetts
Institute of
Technology



impact of open source software

“Linux is **SUBVERSIVE**. Who could have thought even five years ago that a world-class operating system coalesce as if by magic out of part-time hacking by several thousands of developers scattered all over the planet, connected only by tenuous strands of the Internet?” – 1998, Andrew Leonard



tech. journalist

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- hard pressure on Unix
- serious pressure on MS and Apple

(popular retailers selling linux equipped PC's for \$300)



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ipped PC's for \$300)

- 90% still MS but! summer 2002, email to senior managers to hold onto govn and large institutions **AT ALL COSTS!**
authorized special funding – leading to large discounts, even free! – **“UNDER NO CIRCUMSTANCES LOSE AGAINST LINUX”**


critique of the open source software

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- usually weak GUI leading to less user-friendly atmosphere -> hence preferred more on servers rather than desktops (end-users)
- poor mechanism for innovation, OSS lacks innovation, they only duplicate what has been invented (LibreOffice -> MS Office etc) they never implemented anything new!



creative commons (CC)

the need for an **alternative system**:

“It’s fine if you use this photograph, as long as you give me credit for taking it.”

Lawrence Lessig, Hal Abelson, James Boyle, Eric Eldred, Eric Saltzman, 2001, “there is a benefit to resources held in common and the Internet is the best evidence of that benefit...”



creative commons (CC) (how?)

you've taken a photo? ->

www.creativecommons.org



answer two questions:

- allow commercial uses of your work? (yes / no)
- allow modifications of your work? (yes / no / {yes, but as long as others share alike})

website creates html code with proper CC license that you can paste and use for yourself





in 2008, 130 million different CC licenses on intellectual property with CC licenses,

in 2009, principal content license of Wikipedia

























creative commons (CC)

The original set of licenses all grant the "baseline rights". The details of each of these licenses depends on the version, and comprises a selection of four conditions:

-  **Attribution** (by): Licensees may copy, distribute, display and perform the work and make derivative works based on it only if they give the author or licensor the credits in the manner specified by these.
-  **Noncommercial** or **NonCommercial** (nc): Licensees may copy, distribute, display, and perform the work and make derivative works based on it only for noncommercial purposes.
-  **No Derivative Works** or **NoDerivs** (nd): Licensees may copy, distribute, display and perform only verbatim copies of the work, not derivative works based on it.
-  **ShareAlike** (sa): Licensees may distribute derivative works only under a license identical to the license that governs the original work. (See also [copyleft](#).)

Combinations

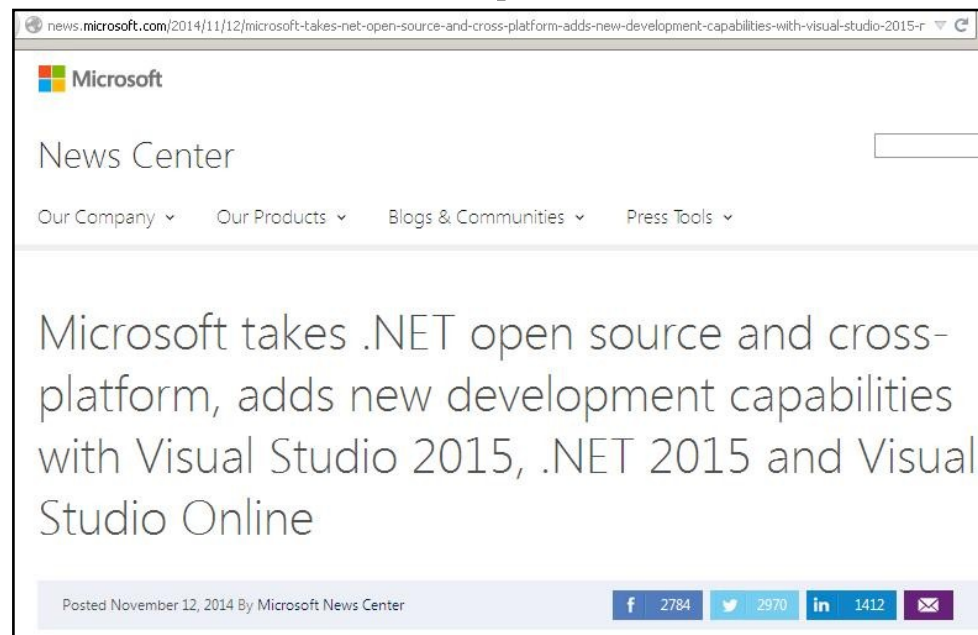
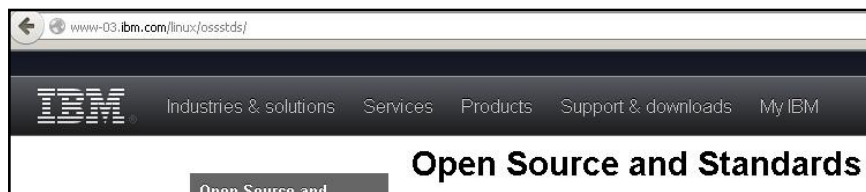


		Can someone use it commercially?	Can someone create new versions of it?
Attribution			
Share Alike	 		Yup, AND they must license the new work under a Share Alike license.
No Derivatives	 		
Non-Commercial	 		Yup, AND the new work must be non-commercial, but it can be under any non-commercial license.
Non-Commercial Share Alike	  		Yup, AND they must license the new work under a Non-Commercial Share Alike license.
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free and open source software

common misconception: no distribution cost

people still make money from distribution and customizing FOSS, main distinguishment from PS is the right to view and modify the source code (corps such as Sun (Oracle), IBM and even MS also in this business)



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major corps and small businesses are into FOSS, make money by providing customization and maintenance services

the philosophical basis of property

property -> what can or cannot be owned...
based on laws, different topics require
different rule sets (land and automobile
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patent and copyright law -> utilitarian
(fostering creativity, innovation and
encouraging disclosure)

but often defended as a matter of natural right
(loosely connected with Kantian and John
Locke's Labor Theory)

natural rights argument

individuals own themselves so they own their labor

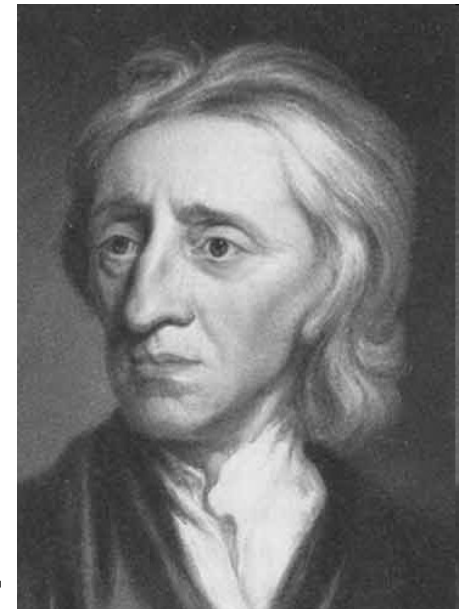
individuals have a natural right to what they produce with their labor

core of John Locke's labor theory of property

John Locke

(1637 – 1704)

English physician and philosopher



natural rights argument

farmer – slave example, **really?**



critique of the natural rights argument

appealing but not flawless

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what is the problem then?

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economic right ---> PS and FOSS both want economic benefits but have different visions

debate focus: **which system is best for the production and distribution of sw?**

(best consequences, most robust environment for sw devs, best sw creation, widely accessibility.... which system does these?)

a natural rights argument against software ownership

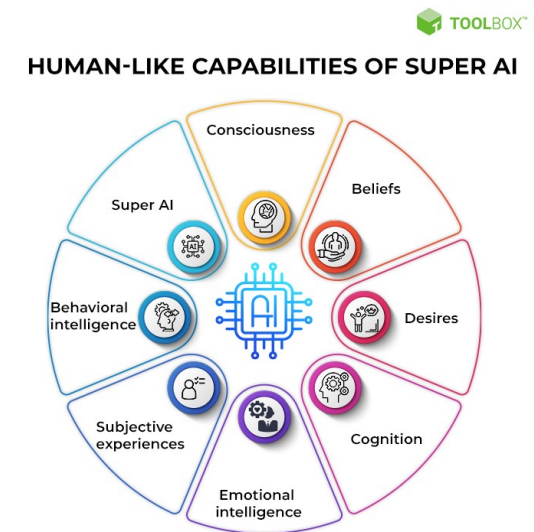
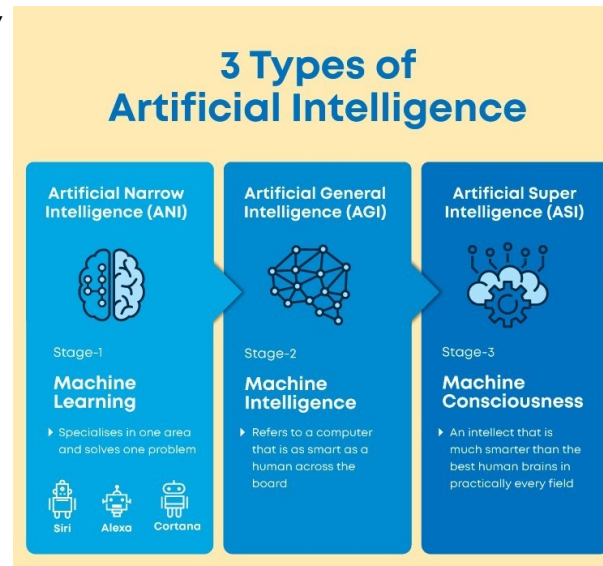
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not implausible but increasing artificial agents and expert systems open up a new frontier – one should be careful about legal status of machines that “think”



PS versus FOSS

best system -> best consequence

PS -> no motivation without protection

FOSS -> credit system (sth like rep :)

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utilitarian approach -> best consequence

unfinished debate, both ways can be analyzed easily atm

is it wrong to copy PS software?

get back to reality, today -> many legally
protected PS

is breaking PS or FS rules wrong?

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- 1- backup copying is generally not illegal (though not universally accepted, few exceptions)
- 2- individual issue can extend to collective level in companies (multiple copy licenses)

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Quite common in general: individuals who would not break other laws will make illegal copies of software

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it is immoral to do something illegal (for
this case!)

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you have to rationalize the following....

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(1) is hard (go for e.g. MS for monopoly, easier). If (1) is shown (2) will be plausible.

whatever the case is mostly sw owners claims are much stronger than PS copier

breaking rules, no rules, and new rules

from sw to music and movies...

“perfect” copying easier with web (not possible before)

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no rules (impossible) -> instead new rules
(CC)

breaking rules, no rules, and new rules



middle man is eliminated -> now there is
middle thing! (the Internet)

breaking rules, no rules, and new rules

bottomline: there are at least two creative responses to weaknesses in traditional ideas: FOSS and CC



references

