


Computing and Intellectual Property #2



Lecture 7

Understand what intellectual property encompasses

Discuss some current computing related issues associated with the protection of intellectual property

Lecturer YANG Lu

Previous Lecture

- What is Intellectual Property?
- IP Protection Framework
- IP Protection Duration
- IP Infringement and Fair Use

How Do I Protect My Copyright?

Some tips

- Keep good records of the creation and modification of your work
- If you are not the only person involved in the work, ensure that you have come to an agreement with the other people involved as to ownership
- Mark your work with a copyright notice
- Consider registration in countries where registration is possible
 - e.g., USA

How to proof originality?

In practice, authors have resorted to a number of means to preserve their interests. They may have:

- deposited a copy of their work with their solicitors or a depository;
- sent a copy of their work to themselves by post leaving the envelope unopened on its return so that the date stamp and the unopened work could establish the date of existence and the work as it existed at the relevant time; or
- made a declaration stating the facts of ownership and the date of creation before a Commissioner of Oaths.

These are, however, by no means foolproof methods of proving authorship as they do not prove that the work is original or created by the author. In a dispute, the Court will decide whether there is sufficient evidence to prove the authorship.

In an action, it is presumed that copyright subsists in the work and that the plaintiff is the copyright owner unless the defendant (alleged infringer) challenges that. If the defendant challenges in good faith whether copyright subsists in the work or whether the plaintiff is the copyright owner, the plaintiff will have to file an affidavit with assertions of relevant facts to show that copyright subsists and that he is the copyright owner.

This Week Agenda

- Global IP Protection
- IP-related movements in software domain

Global IP Protection

Global IP Protection

General agreement on Tariffs and Trade (GATT)

- A multilateral agreement governing international trade
- The agreement also creates the World Trade Organization (WTO) in Geneva, Switzerland
- A section covering copyrights
 - The agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS)
 - Many countries IP laws were amended to be essentially consistent with GATT
 - However, still, copyright protection varies greatly from country to country

Global IP Protection

The WTO and the WTO TRIPS Agreement (1994)

- **WTO**
 - A global organization that deals with the rules of international trade based on WTO agreements that are negotiated and signed by representatives of the world's trading nations
- **The agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS)**
 - A treaty signed by more than 100 nations that entered the force on Jan 1, 1995
 - Establish *minimum levels* of protection that each government must provide to the intellectual property of all WTO members
 - It requires member government to ensure that IP rights can be enforced under their laws and that penalties for infringements are tough enough to deter future violations.
 - Developed nations had 1 year to bring their domestic laws into compliance, developing nations were afforded an additional grace period of up to 10 years.

Global IP Protection

Summary of the WTO TRIPS agreement

Form of IP	Key terms of agreement
Copyright	<ul style="list-style-type: none">• 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	<ul style="list-style-type: none">• Patent protection is available for any invention, whether a product or process.• Discrimination is not allowed based on the place of invention or whether products are imported or locally produced.
Trade Secret	<ul style="list-style-type: none">• 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.

Global IP Protection

The World Intellectual Property Organization (WIPO) Copyright Treaty (1996)

- **WIPO**
 - An agency of the United Nations established in 1967, with 191 member nations
 - Dedicated to “the use of intellectual property as a means to stimulate innovation and creativity”
- **The WIPO Copyright Treaty (1996)**
 - The treaty ensures that computer programs are protected as literary works
 - Provides additional copyright protections to address electronic media (e.g., online service provider safe harbour provisions)



Global IP Protection

Online service provider (OSP) safe harbour provisions:

OSP: e.g., ISPs and other intermediaries like content platforms and social media platforms

Aim to shield an online service provider (OSP) from copyright infringement liability for transmitting, temporarily storing for transmission (caching), or storing material at a user's direction where certain conditions are met.

e.g.,

- Not receive a financial benefit directly attributable to the infringing activity, where the OSP has the right and ability to control the activity.
- Not know the material or activity is infringing or be aware of facts or circumstances that make the infringement apparent.
- Expeditiously remove or disable access to the material if it learns of the infringement, or facts or circumstances that make the infringement apparent, or receives a regulation notice.
- Designate an agent to receive regulation notifications, register the agent's name and contact information with the copyright office, and make this information available on its service.
- Accommodate and not interfere with certain technical measures used by copyright owners to identify or protect copyrighted works.

Global IP Protection

Youtube Community Guidelines

Method: Warning + Three Strikes Approach

1st strike: banned use for 1 week

2nd strike: banned use for 2 weeks

3rd strike: your channel permanently removed

<https://support.google.com/youtube/answer/2802032?hl=en>

✓ Copyright

You should only upload content (including music, videos, and artwork) that you created or that you're authorized to use; otherwise, this could result in a copyright violation. [Learn more](#).

If you use someone else's content on your YouTube channel, the copyright owner can submit a takedown request. If this is a valid request, your video will be removed from YouTube and you'll get a [copyright strike](#). You can wait for a copyright strike to expire, seek a [retraction](#), or submit a [counter-notification](#). If you get three copyright strikes, your channel is subject to termination.

Alternatively, if you upload a video that contains copyright-protected material, you could end up with a [Content ID](#) claim issued by the party who owns the music, movies, TV shows, video games, or other copyright-protected material. A Content ID claim may result in a takedown or lost revenue depending on the actions specified by the copyright owner (but you can [dispute](#) a claim you believe is wrong).

We believe it's important to keep YouTube a platform that inspires vibrant creativity and protects creative rights. If another channel uploads your content without your permission, you may file a copyright complaint via our [webform](#).

Global IP Protection

Overseas Protection for Copyright Works Created in Singapore

A copyright work created by a Singapore citizen or resident is protected in many countries overseas by virtue of international agreements. Generally, under these international agreements, the work of a Singapore citizen or resident would be protected in countries that signed the agreements as though the work was made there. Some countries such as Canada and the United States of America provide for registration to facilitate proof of copyright in infringement proceedings.

But whether and to what extent the foreign country protects the work for which enforcement is sought remain complex issues.

Global IP Protection Issues

The reality of copyright protection across borders is more complex

1) Difficult to enforce globally, needs considerable international cooperation

- e.g, Pirate Bay (Bittorrent site) trial
- Key issue
 - “unlike the previous generation piracy sites like Napster, it doesn’t host infringing files, nor link to them. Instead, it hosts “trackers”, files which tell users of individual BitTorrent apps which other BitTorrent users to link to in order to download large file- usually copyrighted materials”
 - Does safe harbour provisions apply to it?
 - European court of justice (ECJ) believes that Pirate Bay goes further than a protected site should, by offering not just a search feature, but also categorising files, deleting faulty trackers, and filtering out some types of content
 - blocked and seized, its offices raided, and its three founders fined and jailed.
 - Current status?



Global IP Protection Issues

Enforcement / monitoring for online copyright infringement

Singapore: IMDA regulation

e.g., Internet Code of Practice

PREMIUM

53 piracy websites blocked in battle to curb copyright breach



The Pirate Bay and Solarmovie.sc are two out of the 53 piracy websites that have been blocked in Singapore. PHOTOS: THE PIRATE BAY, SOLARMOVIE

Global IP Protection Issues

The reality of copyright protection across borders is more complex

2) Many developing countries have taken the position that that these international treaties favours developed countries and transnational corporations at their expense. They argue that these international treaties imposes higher costs on developing countries in the form of more expensive drugs, agricultural products, and foreign-owned technologies.

- Matthew effect of accumulated advantage
- The rich get richer and the poor get poorer

Matthew Effect

✦ The Matthew effect (or "accumulated advantage") in sociology is the phenomenon where "the rich get richer and the poor get poorer". Those who possess power and economic or social capital can leverage those resources to gain more power or capital.

"For to all those who have, more will be given, and they will have an abundance; but from those who have nothing, even what they have will be taken away."

—Matthew 25:29,

Global IP Protection Issues

Piracy

Software Piracy in China

e.g., Software piracy, music illegal downloading

Potential reasons

cultural issue, economic issue, etc

Cases

e.g, Microsoft continuous battle with China government regarding software piracy

Search

Bloomberg

Sign I

Politics

U.S. Accuses China of Continuing IP Theft as WTO Launches Probe

By Shawn Donnan and Jenny Leonard

21 November 2018, 6:50 AM SGT Updated on 21 November 2018, 9:04 PM SGT

The U.S. accused China of continuing a state-backed campaign of intellectual property and technology theft as the World Trade Organization said it would establish a dispute panel to rule on the complaint.

The new accusations came in a detailed 53-page report released by U.S. Trade Representative Robert Lighthizer's office just 10 days before President Donald Trump is due to meet Chinese President Xi Jinping on the sidelines of a Nov. 30-Dec. 1 Group of 20 summit in Buenos Aires.



















"China fundamentally has not altered its acts, policies, and practices related to technology transfer, intellectual property, and innovation, and indeed appears to have taken further unreasonable actions in recent months," the report said.

Separately, the WTO agreed on Wednesday to launch a dispute investigation into the U.S. allegations. The Geneva-based trade organization will task a panel of three experts to determine whether China's policies violate WTO terms. A decision could be rendered as soon as next year.

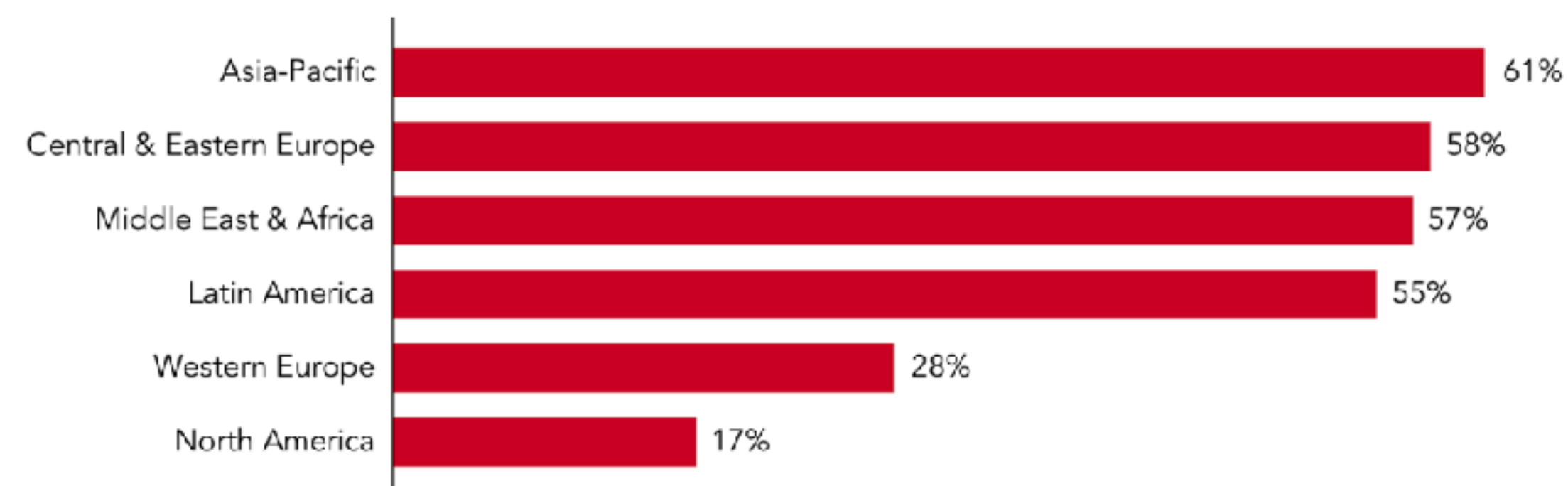
Global IP Protection Issues

BSA GLOBAL SOFTWARE SURVEY May 2016

RATES UNLICENSED SOFTWARE INSTALLATION

	2015	2013	2011	2009
ASIA PACIFIC				
 Australia	20%	21%	23%	25%
 Bangladesh	86%	87%	90%	91%
 Brunei	66%	66%	67%	67%
 China	70%	74%	77%	79%
 Hong Kong	41%	43%	43%	47%
 India	58%	60%	63%	65%
 Indonesia	84%	84%	86%	86%
 Japan	18%	19%	21%	21%
 Malaysia	53%	54%	55%	58%
 New Zealand	18%	20%	22%	22%
 Pakistan	84%	85%	86%	84%
 Philippines	67%	69%	70%	69%
 Singapore	30%	32%	33%	35%
 South Korea	35%	38%	40%	41%
 Sri Lanka	79%	83%	84%	89%
 Taiwan	36%	38%	37%	38%
 Thailand	69%	71%	72%	75%
 Vietnam	78%	81%	81%	85%
Other AP	87%	91%	91%	90%
TOTAL AP	61%	62%	60%	59%

Average Rate of Unlicensed Software Use



Source: https://www.bsa.org/~media/Files/StudiesDownload/BSA_GSS_US.pdf

IP right index: <https://www.internationalpropertyrightsindex.org/countries>

Global IP Protection Issues

Drug Patent Infringement in India

IP protection vs. Public health

Patent Act, 1970, came into force on 20 April 1972

1995 joined WTO

Prior to 2005, no patent was granted on medicines in India, which resulted in the growth of the generic drugs manufacturing industry that helped treatment diseases like HIV/AIDS, tuberculosis, cancer, etc. around the world.

2005, required to comply and enforce TRIPS
(Trade-Related Aspects of Intellectual Property Rights)

Landmark cases:

1. On 1 April 2013, pharmaceutical giant Novartis **lost a six-year legal battle** after the Indian supreme court ruled that small changes to its leukaemia drug Glivec did not deserve a new patent.
 - “**Ever-greening of patent in pharmaceutical industry**”
2. India **upheld a compulsory licence** of Bayer's cancer drug Nexavar, effectively allowing generics firms to copy a patented drug, reportedly bringing the price down from more than \$5,500 (£3,540) per month to \$175 (£112).

Current Battleground in the IP War

U.S.A. context

The PIPA and SOPA Battle, 2011

Two controversial pieces of legislation

Protect Intellectual Property Act (PIPA)

Stop Online Piracy Act (SOPA)

Supporters: stronger laws are needed to enforce copyright protection online and to crack down on pirates.

Opponents: government abuse of power, potential higher Internet censorship

Results: postponed voting on these two measures.



Current Battleground in the IP War

U.S.A. context

The PIPA and SOPA Battle, 2011



Movements in IP Domain

The Free Software Movement

An idea advocated and supported by a large, loose-knit group of computer programmers who allow people to copy, user and modify their software

- Views software ownership as a form of “hoarding” that disregards the general welfare of society
- Free software foundation 1985
- Four “freedoms” are essential for free software
 - **Run** the program, for any purpose
 - **Study** how the program work, and adapt it for your needs
 - **Redistribute** copies so you can help your neighbour
 - **Improve** the program, and release your improvements to the public so that the whole community benefits



"If programmers deserve to be rewarded for creating innovative programs, by the same token they deserve to be punished if they restrict the use of these programs."

Richard Stallman

<https://www.gnu.org/philosophy/free-sw.html>

TEDxGeneva 2014: Free software, free society

https://youtu.be/Ag1AKII_2GM

The Free Software Movement

GNU (Gnu's Not Unix): a computer operating system comprised entirely of free software.

GNU General Public Licence

Protect GNU software from being made proprietary, and it lists terms and conditions for copying, modifying ,and distributing free software:

To ensure that every person who receives a copy, or derived version of a work, can use, modify, and also redistribute both the work and the derived version of the work. All derivative works of GPL software must also be licensed under GPL.

Also known as “Copyleft”

“The two major categories of free software license are [copyleft](#) and [non-copyleft](#). [Copyleft licenses](#) such as the [GNU GPL](#) insist that *modified versions of the program must be free software as well*. Non-copyleft licenses do not insist on this. “

The Free Software Licences

GNU General Public Licence 3.0

<https://www.gnu.org/licenses/gpl-3.0.en.html>

The GNU General Public License is a free, copyleft license for software and other kinds of works.

“When we speak of free software, we are **referring to freedom, not price**. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.”

How to Apply GNU GPL 3.0 Terms to Your New Programs:

Attach the following notices at the start of each source file:

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

```
This program is free software: you can redistribute it and/or modify
it under the terms of the GNU General Public License as published by
the Free Software Foundation, either version 3 of the License, or
(at your option) any later version.
```

```
This program is distributed in the hope that it will be useful,
but WITHOUT ANY WARRANTY; without even the implied warranty of
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the
GNU General Public License for more details.
```

```
You should have received a copy of the GNU General Public License
along with this program. If not, see <https://www.gnu.org/licenses/>.
```


The Open Source Movements

Software distributed or made public in source code (readable and modifiable)

- Began in 1988
- Similar with FSF in the requirements for ***the free use of their source code*** in the software development process
 - Premise: when more programmers can read, redistribute, and modify a program's code, the software improves.
- Differences
 - OSS focuses on promoting the open source model as an alternative methodology to “closed-source” development for software
 - How the software can be used downstream
 - FSF requires that all derivative pieces of software be subject to the original requirements and thus remain “open” and nonproprietary
 - OSS is more flexible with respect to its derivative software, permit programmers to alter the open source software and to release it as a proprietary product
 - “permissive” open source licenses or non-copyleft licenses

The Open Source Licenses

Open source licenses are licenses that comply with the Open Source Definition — in brief, they allow software to be freely used, modified, and shared.

<https://opensource.org/licenses>

Popular OSI licenses:

[Apache License 2.0](#)

[BSD 3-Clause "New" or "Revised" license](#)

[BSD 2-Clause "Simplified" or "FreeBSD" license](#)

[GNU General Public License \(GPL\)](#)

[GNU Library or "Lesser" General Public License \(LGPL\)](#)

[MIT license](#)

[Mozilla Public License 2.0](#)

[Common Development and Distribution License](#)

[Eclipse Public License](#)

Questions:

Can I call my program "Open Source" even if I don't use an approved license?

The Open Source Movements

Why firms or programmers would like to make their codes open source?

- Earn respect
- The need to pay back
- Revenue model
 - Billing hours
 - Maintenance fee
 - Customisation work
 - etc
- Contribute to the public
- Etc.

The Creative Commons

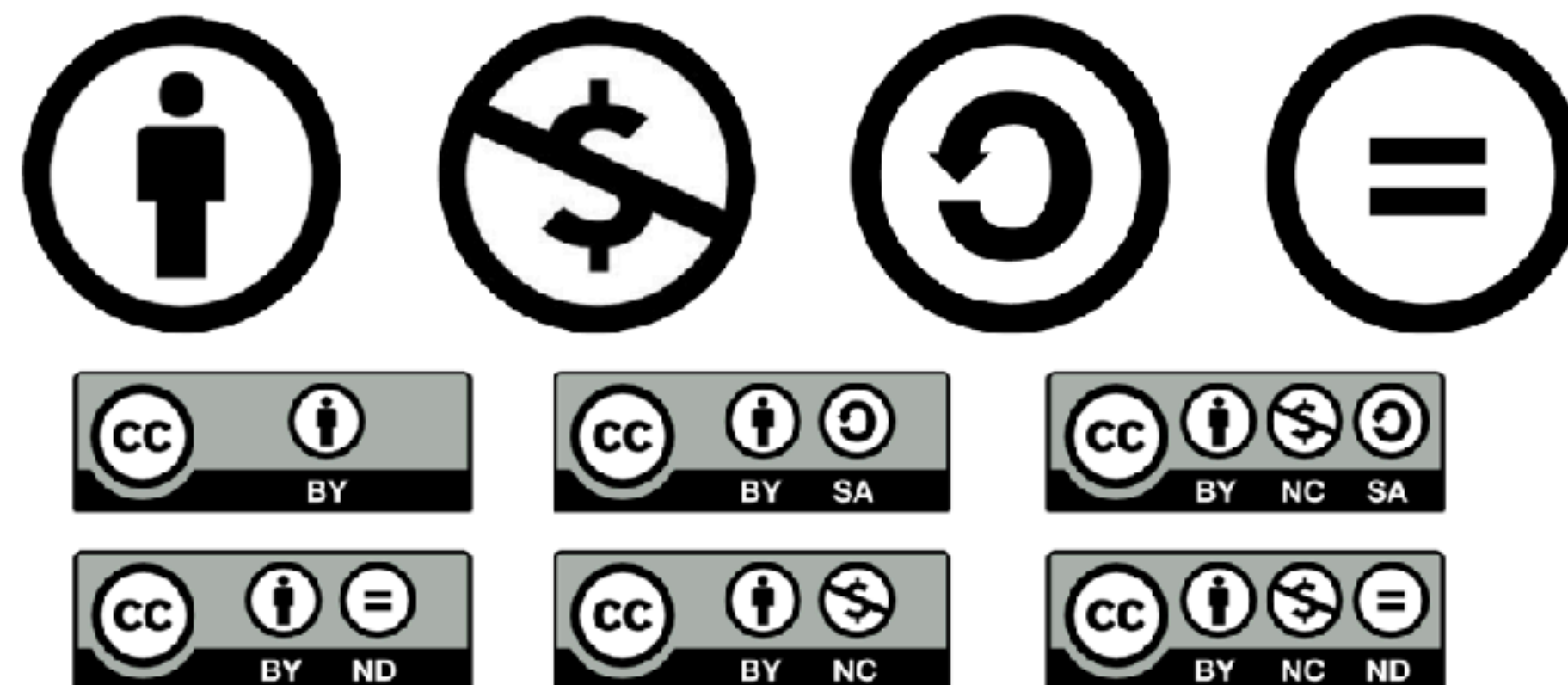
The Creative Commons, instead of copyright

Creative Commons licenses provide a flexible range of protections and freedoms for authors, artists, and educators.

<https://creativecommons.org>

Lawrence Lessig





https://www.ted.com/talks/larry_lessig_says_the_law_is_strangling_creativity



The Creative Commons

The Creative Commons, instead of copyright (cont.)

“Lessig notes that, unfortunately, the current version of copyright, which was not written for a world of digital creativity, “**restricts more than it inspires**.” Traditional copyright regimes tend to promote an “all or nothing” kind of protection scheme with their “exclusive rights” clauses. According to Thomas Goetz (2004), CC provides a “middle ground” with respect to copyright protection because it makes possible a “**some rights reserved**” approach vs. an “all rights reserved” policy.”

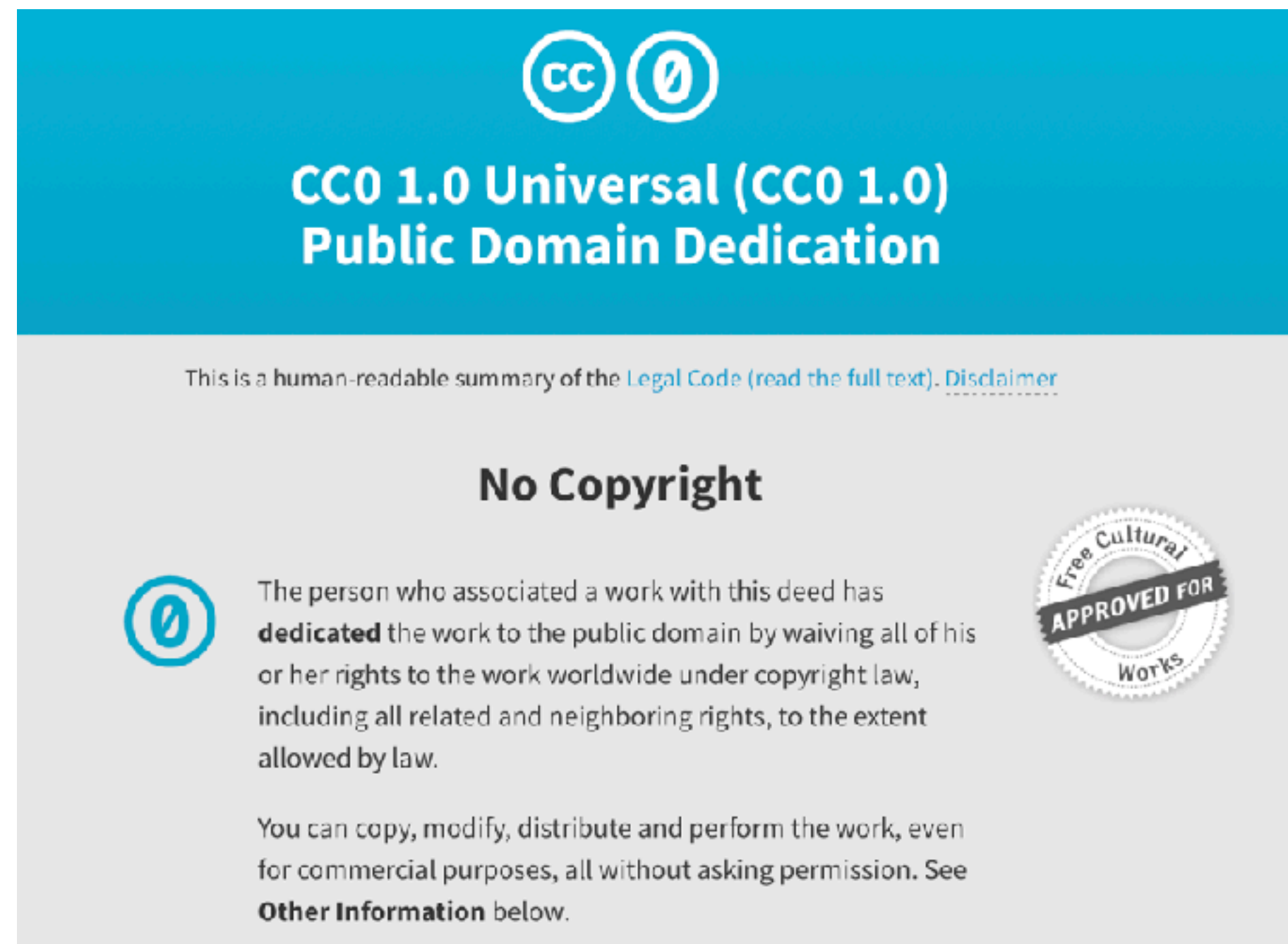
- **Attribution**—permit others to copy, distribute, display, and perform the work and derivative works based upon it only if they give you credit.  **Attribution (by)**
- **Noncommercial**—permit others to copy, distribute, display, and perform the work and derivative works based upon it only for noncommercial purposes.  **NonCommercial (nc)**
- **Derivative**—permit others to copy, distribute, display, and perform only verbatim copies of the work, not derivative works based upon it.  **NoDerivatives (nd)**
- **Share alike**—permit others to distribute derivative works only under a license identical to the license that governs your work.  **ShareAlike (sa)**

The Creative Commons

Example

CC0 - public domain dedication

<https://creativecommons.org/publicdomain/zero/1.0/>



Question:

- Should we release software using the the CC0 public domain dedication?

Recommended Materials

Singapore Patent Landscape Report 2016 <http://iposinternational.com/wp-content/uploads/2018/02/Singapore-Patent-Landscape-Report-2016.pdf>

China, Addicted to Bootleg Software, Reels From Ransomware Attack, New York Times, 2017, <https://www.nytimes.com/2017/05/15/business/china-ransomware-wannacry-hacking.html>

Global IP Index, http://www.theglobalipcenter.com/wp-content/uploads/2018/02/GIPC_IP_Index_2018.pdf

The Principles of Free Software, https://youtu.be/Ag1AKII_2GM

Lessig, Lawrence. 2004. “Creative Freedom for All: Done Right, Copyrights Can Inspire the Next Digital Revolution.” *Wired* (November): 188–89.