Open source licenses and IPR protection

INF5750 - Lecture 11
Intro 1

- What is IPR?
- What are IPR control points?
- Patents
- Copyright
- Licenses
- Other control points
- Why is IPR important?
Intro 2

- Open Innovation
- Open source hardware ++
- Selling your company - due diligence

An earlier and more detailed open source presentation by Prodromos Tsiavos can be found [here](#). This presentation has parts from that presentation.
Copyright, patents, IPR and licensing is very difficult, and is really food for lawyers. If you’re doing this for real, it’s good to involve lawyers to understand all the details.

Open Source licensing is not always very clear about the limits and possibilities. Any disputes would have to be settled in or outside court.

But it’s good for everyone to have a basic understanding of what the issues are...
IPR? What???

IPR = Intellectual property rights
The rights to ‘intangible assets’.
For a company, we speak of ‘tangible’ and ‘intangible’ assets.
Tangible = can be touched
Tangible assets = property, machines etc…
Intangible assets = knowledge etc.
Intangible assets

● A company has many **intangible assets**
  ○ Designs, plans, documents, source code…
  ○ Know-how, processes, hierarchy, structure…
  ○ The intangible assets are often inside people…
  ○ Distribution networks, agreements…
  ○ Brand, customer loyalty…
  ○ Patents, copyright, design patents (formalized)

● How do you protect something non-physical?
IPR Control Points

- Control point = a way to control IPR leakage
  - Copyright
  - Trademarks
  - Patenting
  - Keep things secret
  - Branding
  - Community and distribution
  - … more?
A copyright gives the creator of an original work exclusive rights to it, usually for a limited time. Copyright may apply to a wide range of creative, intellectual, or artistic forms, or "works". Copyright does not cover ideas and information themselves, only the form or manner in which they are expressed. Creative works are not protected automatically internationally, but there are international treaties that provide some protection.
Copyright 2

- If you write something, you own the rights to that content
- But someone else could write software that does the same thing, so not a very strong protection
- Typically an individual copyright is passed to an employer
- In OS projects, many copyright holders...
- If you get someone’s source code, you may not understand it and it may be difficult to replicate it.
- Regardless of copyright, the understanding might be embedded in people
Copyright 3 - why?

- If something costs a lot to make the first time, but is very cheap to replicate!
- Should have an incentive for people to create works
- But how about those who wish to build upon it?
- Sometimes copyright is about becoming famous, not about becoming rich (recognize author)
- **Life of author + x years** (but sometimes longer)
“Moral rights are rights of creators of copyrighted works generally recognized in civil law jurisdictions and, to a lesser extent, in some common law jurisdictions. They include the right of attribution, the right to have a work published anonymously or pseudonymously, and the right to the integrity of the work.\[1\] The preserving of the integrity of the work bars the work from alteration, distortion, or mutilation.” Wikipedia
“A patent grants an inventor exclusive rights to make, use, sell, and import an invention for a limited period of time, in exchange for the public disclosure of the invention. An invention is a solution to a specific technological problem, which may be a product or a process.” Wikipedia

- A legalized monopoly of an invention.
- Has a timeout period and you must apply per country.
- Dubious status of ‘software patents’
- Lots of patents are held by patent-trolls
1. A method in a mobile telephone network having recording and positioning capabilities, wherein content recorded on a mobile device and subsequently submitted to a content platform is managed on a content platform and stored on a content database, positions of the mobile telephones are provided by means of a positioning centre, characterized in establishing a link in the content platform between a content recorded and submitted to the content platform by one of the mobile telephones and the position of the mobile telephone at the time the content is being submitted.

...
What is a license?

Permission by the owner of property to take some act that the owner has the ability to control

What is a sublicense?

- A license granted by a licensee
- The right to grant a sublicense must be expressly stated in a license and will NOT be implied
When something is public domain, it means it is completely open. Anybody can use it. No restrictions!

“Works in the public domain are those whose intellectual property rights have expired, have been forfeited, or are inapplicable.” Wikipedia
Closed vs open license

- Both are **based on ownership of intellectual property**
- Both **grant certain rights and retain others**
- Both are **governed by the same laws**
- Both may include provisions which may be incompatible with the obligations of other licenses
- License obligations can be **incompatible**, but the issue is whether the obligations are triggered
- As opposed to **public domain**, which is completely open
Source and object code

Two important concepts:

- Source code - The human-readable and editable software
- The compiled, binary software.

In some cases, there’s not really a distinction (PHP), or it is blurred (Java can be de-compiled)
Permissive vs Restrictive

- Restrictive free software licenses want to keep the software free, with same rights for future users. When distributing object code, you MUST distribute source code with same license.
- Permissive: you MAY distribute the source code when you distribute the object code, but you MUST typically mention the authors/organisations where the open source components came from.
- “Distribute” is also an important concept.
“Copyleft is a general method for making a program (or other work) free, and requiring all modified and extended versions of the program to be free as well.” (GNU Website)

Your existing code-base. Commercial, secret software or open source software.

Restrictive Open Source License
OSS can be viral
Open source licenses

**Attribution** Licenses – compliance is easy
- BSD, MIT, Apache (Example: Apple/MS use BSD IP stack)

**Weak Copyleft** licenses – more challenging
- Mozilla, EPL, CDDL
- LGPL (LGPLv2 differs from LGPLv3)

**Strong Copyleft** licenses: most challenging
- GPL (GPLv2 differs from GPLv3) - Linux Kernel etc.
- AGPL (for application service providers / Cloud)
So, if you include software with a permissive license (no copyleft), you do not have the redistribute the changed code
If you include software with weak copyleft, you have to redistribute that module’s source
If you include software with strong copyleft, you must distribute the entire software source
Distributing software

- The copyleft and requirement to distribute source is typically linked to the act of distributing the object code.
- Much OSS you can modify and use internally without requirement to distribute.
- AGPL and some other new licenses are different. If you have a service based on AGPL, must distribute source.
- If you make your own OSS, you should still claim copyright on it, but distribute it with an OSS license. The copyright gives you the right to offer it as OSS.
Not all licenses are compatible, because they impose different restrictions. For example, you cannot combine EPL and GPL.
Dual licensing

- Sometimes software is licensed under dual licenses.
- The copyright-holder can issue whatever license they want, as long as they hold the copyright to the whole source.
- Common dual licensing: A restrictive license (GPL or similar) that most commercial companies try to avoid, and a commercial license that you must pay for.
Secrecy of your source

- There are many other ways to control your IPR than just keeping your source secret.
- Publishing your source may even protect you against patents. If you keep it secret, you are not protected.
- In fact, sometimes opening your source is a great business proposition (more in later lecture).
- Which other control points are there?
Commercial impact of OSS

- If you want to sell your company, the buyer will want to go through a ‘Due Diligence’
- Due Diligence means looking into all your financials, customer, your source code etc.
- Buyers often use automated tools to go through source code, looking for undesirable OSS licenses
- Remember that if you did use OSS licenses in a way that requires you to distribute software, someone could take you to court to force you. gpl-violations.org
Using OSS in companies

- Using OSS in commercial companies is critical to most companies' businesses
- Just make sure you do it right
- Give developers OSS training, so they don’t violate the company’s strategy with a wrong OSS license
- Maintain lists of all accepted OSS licenses
- Maintain lists of all used OSS modules
- Use automatic scanning tools to detect issues
Open source hardware++

- Not only software can be open sourced. Any creative artifact, including art, literature and even hardware can be open sourced.
- A very common license for non-Software are the Creative Commons licenses.
- A ‘configurable’ license.
- [http://creativecommons.org/](http://creativecommons.org/)
Example: Thingiverse.com
Creative commons

- Attribution?
- Share alike?
- No derivatives?
- Commercial use?

Configure your own license
IPR Strategy

Identify → Analyze → Select → Implement

- Identify Technology
- Identify Products
- Identify Markets
- Patent Analysis
- Market Analysis
- Organisational Analysis
- Design Control Position
- Select Exploitation Strategy
- Patent
- Publish
- Secret
- Other
Open innovation

- Companies can no longer rely on own research only
- Companies are increasingly opening up their innovation processes, possibly retaining a level of control
- Example: Split up project and outsource
- Use external experts to solve problems. Retired/Students
- Create eco-systems, with open interfaces and APIs
- Cathedral (exclusive group of experts) vs Bazaar (developed openly) - ‘The individual wizard is where successful bazaar projects generally start’ Eric Raymond
The innovation funnel

Ideas → Product selection → Products
The open innovation funnel

Ideas → Product selection → Products