IP Notes

* The talk is mainly about patents

Overview

* Intellectual property is a collective of different types of aspects
* Legally it’s a bundle of rights that you own as a person
  + You create or do something that is intellectual in nature
* Designs, trademarks, patents, copyright, and trade secrets are all a part of IP
* IP in general -> patents in specific -> software patents even more specifically
* Patents are trying to capture innovation as a property right
* IP is the right to the product of your mind – the ownership of your own ideas
* Patent and copyright laws acknowledge the mental effort required to formulate an original idea and protect it
* Intellectual work has been protected since ancient times, with patents originally designed to protect trades, rather than inventions.
* Designs, trademarks, patents, copyright, and trade secrets
  + They differ in what they protect, their duration, how they are acquired and how they are enforced.

Patent

* Protects functionality
* Lasts up to 20 years
* You must show your idea is new, has utility, is non-obvious, and eligible for a patent office to grant you a patent
* The patent has particular claims on it, you can only use these claims to enforce the patent.

Design

* Protect appearance
* 10-25 years
* Must show its not identical or too similar to something else
* Through showing the target is too similar or identical to yours
* You need to file for these patents before your design goes public because you could potentially lose the rights to your design if someone sees it and files before you – example of the apple employee being fired for leaking the iphone X before it was officially released.

Trademark

* Protects brands
* It’s a sign that distinguishes a trader’s goods/services. Think of the apple logo, the Cadbury purple. It is an identifier
* Infinite duration
* First come first serve, but you do actually have to be using it
* Enforce by showing target is identical or too similar (if they are similar enough that they can be confused, then bad)

Copyright

* Protects the expression of an idea (literary, artistic, musical, performance, code, etc.)
* Lasts until death +70 years afterwards
* It is implicitly acquired when the idea is materialized. If you only think about the idea then you don’t have copyright, once you implement it you do. Even if you add to someone else’s work, that is your copyright, not theirs.
* Enforced if you can show someone copied you **substantially** but it won’t protect against independent creation (dual founders).
  + Terms of service can also affect this. When you upload a photo to Facebook, they state that you own it, but their ToS say they can use it for whatever they like

Trade Secret

* Protects confidential information
* Lasts as long as it can be kept confidential
  + It is sort of an alternative to patents because you run the risk of explaining your secrets when trying to get a patent, but you may not get it, and then your secrets are known. The tradeoff is that if someone does find out your secret and you don’t have a patent, then you can’t really protect your idea.
* Confidential information is acquired via things like NDA’s, or under some other obligation of confidence i.e. you promise not to leak it
* If someone uses or discloses the information in an unauthorized manner, then you have an action against them and can potentially sue for damages
  + Trade secrets are susceptible to reverse engineering

More on Patents

* A patent fully discloses the invention. With your permission, someone should be able to replicate it via the patent
* It is an agreement between you and the government which gives you the right to exclude others from exploiting your invention, for a fixed period
* Why?
  + Encourages research and development (patent holder perspective) as it gives you insurance on your product
  + Encourages disclosure of incremental inventions (how??)
  + Can be used as a sword (royalties, cease and desists), basically you approach others
  + Can be used as a shield (deter competitors, create risk and uncertainty), basically you implicitly fend off others
  + Can be used as a treasure chest (negotiation tool, increases valuation and capital investment because it gives you credibility and protection, it’s an asset)
    - Investors wont invest if you don’t have a patent, someone else can steal the idea
* Who owns the patent?
  + If you work on a personal project on company time or as a university project, then you may not actually own the rights to it as an inventor, the company or university may
  + Ownership can be transferred
  + Licences don’t transfer the ownership, but they do give rights to use (Facebook example previously). They may be the exclusive (give exclusive rights to use i.e. not even the inventor can use the product anymore).
* Costs and benefits
  + Roughly 20k for a patent to be issued, up to 30k total for maintenance costs over the full 20 years of patent life. So, you really only want to get a patent if your idea is proven. Patents are only per country.
  + Small startup companies usually wouldn’t get a patent, it’s not worth the cost at this stage. Once they start to gain traction then they may want to.
* Assuming it can be patented, what is worth patenting
  + If it’s possible you could just opt for secrecy instead (cheaper)
  + You have to consider the costs above, as well as enforcement costs
  + Do I want to attract investors? Do my competitors patent?
  + A high-five machine was patented, whyyyyyyy

Patent validity and infringement: hypothetical - chairs

* Copyright is implicit, patents need to be explicitly applied for and approved.
* Requirements for a patent (validity)
  + Invention must be new
  + Must be inventive (non-obvious)
  + Must be eligible subject matter
* Infringement
  + Can you just change 10% of a patent and get away with it?
* Chair hypothetical
  + Originally has 3 legs
  + We put a 4th one on it to stop people falling off it
  + Is it new? Yes, chairs before this only ever had 3 legs
  + We write up a claim, stating the chair has at least 4 legs that are secured to the seat such that it is substantially horizontal
    - Note the “at least”, “secured” and “substantially” all purposely make it more general. If we said 4, someone could do 5, if we said screwed, someone could do nailed etc.
  + But then the patent office finds a citation for a chair that already has 4 legs (chair A). You can’t claim something that already exists (must be new), and so we have to change our claim.
  + We add in the fact that the chair has a back-rest or that the legs must be perpendicular to the ground. The patent office may or may not accept it at this point, as this change might not be seen as inventive (it’s too obvious)
  + Now say chair A is mass produced by your competitor, can you do anything? No! Either your patent includes their chair (and so shouldn’t have been granted), or it doesn’t and hence you can’t claim it!
  + Now competition comes up with a splayed chair (chair B). The argument rests on how splayed legs vs substantially normal legs is interpreted. You probably wouldn’t win this.
  + Note that even though a patent is granted, it doesn’t mean it’s okay. It can be challenged later down the line and revoked i.e. if the patent wasn’t actually new, inventive, or disclosed how to do said thing.
  + Competition then makes a chair with straight legs like yours, you can sue them for this.
  + Competition also makes a serving platter that resembles your chair. If you try sue them then that’s a very broad claim, and they can use this as leverage to ask why you aren’t suing all things similar to chairs, not just serving platters, and you lose.
  + If competition gets a patent in for chairs with 4 legs like yours but with arm-rests, you cannot make a chair with arm-rest, and they cannot make their chairs because it violates your 4 vertical legs. This sort of mutual exclusion must be worked out by
    - Agreeing not to sue each other
    - One buying the other out
    - Join forces to monopolize the chair world

Software (and’ business method’ patents)

* New and inventive, but also needs to be valid: must have an **eligible subject matter**
* Basically, there are certain areas that patents won’t be issued over, no matter how new or inventive the idea is. They are usually controversial areas;
  + Naturally occurring biological material
  + Genetic sequences
  + Stem cells
  + Human beings/method for creation of human beings
  + Methods of medical treatment
  + Business methods (usually include computer technology and so not valid)
  + **Computer implemented inventions (software)**
* Computer implemented inventions
  + Inventions that use computer programs to provide a business process, not a technical one, are not patentable
  + Programs that achieve non-technical advantages (business, aesthetic, presentation) are not patentable. Programs that achieve a technical advantage (processing, power, communications, ui) are patentable. Patenting the use of computers isn’t allowed – patenting a technical advantage is.
  + Some countries have specific legislation against this, whilst other leave it up to the courts to decide. It is better to leave it to the courts because technology is a rapidly changing area, and legislation simply cannot keep up.
  + Ebay is an example of computers used to improve a business process. Creating a new algorithm that does something in 10% less of the previous cycles is a technical advantage.
* Examples of technical patents
  + Pagerank by google: documents could be ordered in a hierarchy by link occurrence, as more links indicated a more popular document. The algorithm itself was old, it was just that they chose to use it in this specific context that meant the patent was granted.
  + RSA keys. Very specific application of the prime number algorithm to cryptography.
  + MP3. The algorithm was very similar to what is used in telecommunications, but because they used it for mp3 which compressed the filesize but kept the quality, they got the patent.
  + WiFi. Very specific way of using radio frequencies for computer communication.