Economics, Law and Ethics

Part IB CST

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Lecture 5: Principles of law

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with many thanks to Ross Anderson

Overview

- Principles of law:
  - How can you end up being liable for things you do online (contract vs tort)
  - How do you make the agreements you want to, and enforce them
  - When you need advice, and the context in which to understand it
- Intellectual property
  - Patents
  - Trade marks
  - Copyright
  - DRM

What is law?

- We can't get all we want by private action because of externalities etc
- Politics: "a structure within which persons seek to secure collectively their own privately defined objectives that cannot be efficiently secured through simple market exchanges" (Buchanan)
- The main mechanism is law

What is law (2)?

- Many origins and flavours (state vs religion, common vs Roman vs Napoleon …) but two main divisions: criminal and civil
- Criminal: Alice harms Bob seriously, so the state prosecutes Alice
- Civil: Alice harms Bob, or breaks a contract with Bob, so Bob sues Alice
- Significant overlap

Criminal law

- In general a crime requires
  - A guilty act (actus reus)
  - A guilty mind (mens rea) – so legal advice or going to the ethics committee may shield you! But some offences are ‘strict liability’
- Prosecution must prove the case beyond reasonable doubt
- CPS guidelines matter (e.g. ‘hacking tools’) and agreements (e.g. with the IWF)

Civil law

- Contract – making the agreements you want
- Tort – avoiding infringement of the rights of others, and giving adequate notice to others of your rights that you may want to enforce
- Regulation – specific things you need to do to enforce your rights or avoid penalties
- International – choice of law and venue
- Arbitration, costs etc

Contract

- A contract consists of offer and acceptance by competent persons for a lawful purpose involving consideration
- Can be made in writing, orally, by conduct
- We make dozens of informal contracts every day; but an online business will usually want to formalise its standard terms and conditions (you may want advice here!)

Contract (2)

- When a shop offers goods in the window this isn't the offer but an 'invitation to treat'. The customer makes the offer for the good and the shopkeeper accepts
- When offering goods online it's wise to make this clear, in case you run out of stock
- Linking clearly to terms and conditions is in general enough (as with a railway ticket)

Contract (3)

- Many national laws require some contracts to be in writing (real estate; insurance; guarantees; in the USA, goods over $500)
- Many jurisdictions have electronic signature laws; in general electronic writing is fine as the essence of signature is intent
- The US ESIGN Act of 2000 made clickwrap licenses explicitly enforceable

Limits

- Consumer Rights Act 2015 extends previous legislation to software (you're now liable for malware you give your customers)
- Retailer has one chance to repair or replace (at customer's choice) else refund
- Can't enforce unfair contracts against retail customers
- Can't exclude liability for death or injury (a separate EU rule, applying to all products)

Globalisation

- It can be tiresome for a firm in England to be sued by a customer in Australia
- Make clear whose law is to apply, and separately where cases should be heard
- Enforcement of foreign judgments is not straightforward (the USA is almost rogue)
- One fix is to specify arbitration of disputes

Arbitration

- A contract can specify binding dispute resolution by an arbitrator
- It can also specify applicable law and set other parameters such as limits on costs
- The Convention on the Recognition and Enforcement of Foreign Arbitral Awards makes awards enforceable everywhere, even in the USA

Costs

- US system – each side pays its own costs. Can be expensive for some firms
- UK system – loser generally pays the winner's costs. May make it uneconomic for most customers to sue you, but a dispute with a rich one can be ruinous
- UK rules on costs are bad for consumer protection, and for free speech (later)

Select an online retailer and review their terms and conditions. What rights does the consumer have? Is there anything that surprises you?

Tort

- Tort is the second main way you can become liable online, after contract
- A tort (in Scotland called a delict) is a wrong which unfairly causes someone else to suffer loss or harm
- Examples are negligence (whether in product liability or in giving advice), defamation and copyright infringement

Negligence

- Arises if you break the duty of care owed by a reasonable person and cause harm directly
- Usual yardstick is the standard of the industry. Some exceptions apply
- Liability often tied up with insurance rules; e.g. car crashes, medical malpractice
- NB: if your software harms a non-customer or a child, you didn't disclaim liability to her as she didn't make a contract with you

Defamation

- Libel (if spoken, slander) is a tort, and the UK is a popular venue for forum shoppers
- Direct defamation; innuendo; linking
- Burden of proof on defendant in UK
- Also the UK system of costs shifting – loser pays winner's costs
- Defamation Act 2013 excludes trivial claims, creates public interest defence, and makes claimants pursue the author first

Patents

- Mechanism to tackle the underprovision of R&D from externality in research
- Protects an invention which must be
  - Novel ("prior art" disallows)
  - Useful (no perpetual motion machines)
  - Non-obvious (to "someone skilled in the art")
- Typical duration – 20 years
- Traditionally only physical inventions; can't protect 'the theories above, or the facts beneath'
- But the economic case is weak, except possibly in pharmaceuticals; to IT firms, patents are a nuisance

Patents (2)

- Software patents in theory not allowed in Europe: EPC Art 52 “The following shall not be regarded as inventions … rules and methods for performing mental acts, playing games or doing business, and programs for computers”
- Don’t you believe it! The courts keep stretching it
- In general, innovation in CS is incremental: a large program can use thousands of ideas, while a blockbuster drug is a single patentable molecule
- So far only four CS patents earned serious money
- Microsoft has just open-sourced its collection!

Trademarks

- Marks capable of distinguishing your goods or services from others (e.g. ‘IBM’)
- May be registered (®) or not (™) – registering can make litigation easier
- Registered trademark owners usually win domain name disputes
- Can sue infringers, but have to show a misrepresentation that damages your business
- Pitfalls – some companies are very aggressive about registration and enforcement (McDonalds)

Copyright

- Since Statute of Anne (1709–10), copyright has protected your literary works – extending from novels and drama to art, music
- Is the main protection for the software you write
- No need to register – but asserting copyright ("© RJ Anderson 2018") can make litigation easier
- Duration – has steadily increased and is now author's lifetime + 70 years (was 50 years for sound recording rights, now 70)
- Protects against copying etc; but "fair use" and "fair dealing" get-outs for criticism, parody…
- Moral rights remain yours even if copyright sold

Copyright (2)

- There are many orphan works – books, pictures etc whose owners aren't known
- Stalled Google Books project – see web page!
- How do you avoid software becoming a similar 'anti-commons' of competing claims?
- Stallman – GPL; BSD license
- Creative Commons gives a general framework for sharing (attribution, commercial use, share-and-share alike, ...)
- Collecting societies vs YouTube etc
- Generative AI

Other ‘IPRs’

- Specialist rights
  - Database rights (EU only)
  - US Semiconductor Chip Protection Act
  - Plant breeder’s rights
  - Design rights
- Rights based on contract
  - Materials transfer agreements
  - Confidential information; NDAs
- Limits – e.g. an employer can’t restrict knowledge that’s become part of the ‘tools of your trade’

DRM

- Copyright owners panicked at printing, audiocassette, videocassette … and the Internet
- Huge push to introduce DRM over last 20 years
- But it shifted power to Apple, Google, Amazon from old-style record companies
- US law made it illegal to mess with DRM mechanisms even when used for technical lock-in
- Lexmark v SCC case allowed reverse engineering for compatibility
- October 2018: US Copyright Office said it's also OK for repair, but selling tools is illegal
- Open-source tools a grey area still...

Strategy

- 'IPR' often a combination (biochip h/w patent + software copyright + MTA on reagents …)
- IT industry strategy: patent portfolios mostly defensive, used to get access by cross-licensing
- Compound models, e.g. GPL the linux version, sell the Windows version, charge for support…
- Startups: VCs like to see some IP (mantra is 'global sustainable competitive advantage')
- Incumbents worry about lock-in: network effects, two-sided markets, distribution moats, control of platforms and interfaces. Challengers can be more creative, but must try to think ahead!