LAW AND ECONOMICS

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Week 4

Intellectual property

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Sturcture of the week

I. Incentives – basic issues of gathering and distributing information
II. Patents
III. Copyright
IV. Trade secrets
V. Personal information

I. Incentives:
economics of information

- Cost of information – distributio after gathering?
  - Gathering, R&D: sunk cost
  - MC: reproduction (e.g. publishing books)
- Social benefits from information
  - Consumer surplus:
    Assume: constant MC
  - i.e. if P_4 => $P_4 - 1 - 3$
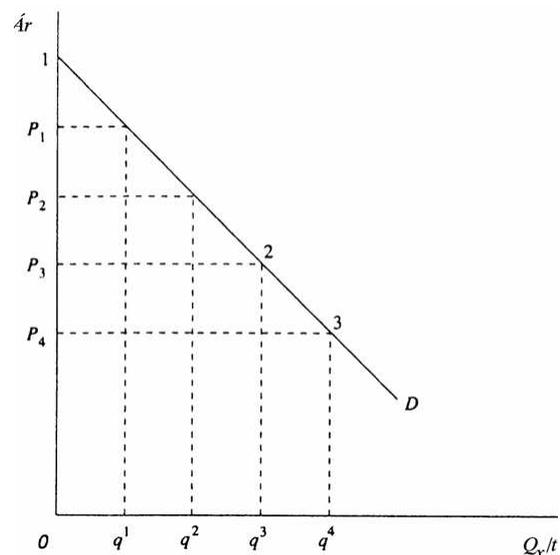
- Social optimum: Cost of innovation (gathering) < Consumer surplus
- Property rights?
    - If exist, higher price
        - Intellectual property is a form of monopoly
        - Suboptimal use (e.g. price increase to P_3)
    - If not, what incentives of innovator, author?

- *Paradox of compensation:*
    - As in case of expropriation with compensation:

	Innovation	Distribution
Intellectual property	Optimal	Too slow
No intellectual property	Suboptimal	Optimal

- BUT: other incentives? – only property, monopoly, rent?
    - Time for reproduction
        - First mover advantage – first sales
        - If reproduction is hard (e.g. recipes are often not patented but trade secrets)
    - Time: network externality
    - Non-pecuniary benefits
        - Reputation, fame (many innovations, books, painting, music, etc. BEFORE intellectual property! Venice: c. XV.; England c. XVII., some European countries c. XIX.)
        - Transformation to income: e.g. concert, exhibition, advertisement, etc.
- Government purchase?
    - Deadweight loss due to taxation (because of paying innovators, authors) – is DWL smaller?

II. Patents

1. Monopoly for a given period
2. Transferable, option to sale (rent),
3. Public

BUT requirements of use:
enforced transfer, if not use, the court requires…
…to give permission to others
…to sell at a given price

Requirements:
1. non-trivial (non basic science, non abstract!)
2. new
3. non-obvious
4. useful

- Time?
    - More useful innovation => higher rent per year => smaller period
    (+ higher social loss – DWL)
    - May be prolonged
- Breadth?
    - Larger breadth => shorter period
    - Future development?
        - Direct benefit + rent from future progress (bargaining vs. cooperation in development?)
        - Basic research - no (other rewards!), but not required to be complete (ready to go to commerce)
        - Government purchase: solution (and free use)
- What? Usefulness?
    - Non useful – who would want to protect?
    - Protecting consumers? (Other, cheaper options – e.g. information policy?)

Incentives:
- Wasteful competition (i.e. first possession) – too early + bargaining cost
    - First takes it all (see future development) – BUT: non-trivial; non-basic research (others may discover it, too…)
    - BUT government purchase is no solution – being first pays, being second no

- Administration costs:
  - Public registry vs. secret (control, protection)
  - Control, administration
    - Sale is public
    - How to use? More potential forms of use – less protection (i.e. basic research)
    - Many patents (high search cost before research => trade secret)
    - Government purchase: no administration cost, BUT setting prices?
- Requirement of use? Enforced transfer
  - If patent only for constraining other uses

III. Copyright

- „Physical" difference from patent:
  - Easy to reproduce – in case of patent: reengineering
  - BUT: patent may be simple – e.g. hula-hoop
- Legal differences – requirements
  - *Recorded* – control is easy (e.g. what plagiarism of Romeo and Juliette?)
  - *Original,* not new, not trivial – expression, language matters (machine: originality, look are not important); new: reducing searching cost?
- Period (life + 70 years):
  - Why longer?
    - Smaller revenue – sure?
    - Other incentives – e.g. fame, exhibitions, concerts
  - Why not infinite?
    - Future: (present value of) small revenue, weak incentive
    - High cost – also for authors (new based on older)
    - No congestion (i.e. objects – required to have a well-defined owner)

- Differences in extent
  - *No requirements of use*
  - *Free: fair use* (video, copying, parody)
    - Small reduction of return (incentives) vs. great benefit (if copying forbidden, none wants to buy the book)
    - Forms of payment: CDs, etc.
    - Advertisement: complementary goods – negative critics? (advertisement + useful information for consumers)

- *Derivative products* (translation, film, theatre)
  - Original author or his agent (based on contract)
  - Incentive: reducing wasteful competition (e.g. first translation – The Gulag Archipelago)

IV. Trade secret

- No administration, no period
- No protection against reengineering
  - Not protected as property (absolute) right – contractual right
    - If information comes from contract: the violator pays damages.
    - Plus criminal sanction: spying!
  - No protection if someone else learns from usage (reengineering)
  - Protection as personal right
- Sometimes the only solution – patent is too dangerous (publicity)

- Choice: private vs. social optimum
  - Patent provides more information
  - Trade secret protects against wrong administrative decision,
i.e. when patent process starts, the information is public
- Too high cost of protection? (i.e. incentive in loss and recovery)
  - Only if small chance of reengineering.
  - Obvious: no reason to spend a lot on protection
    - BUT no patent either

V. Personal information

- Trade secret considering personal virtues.
- Reason of protection – creating scarcity
  - If the name (person) appears too frequently – its value is reduced (static)
  - BUT no incentives – no investment in fame because of this income (dynamic)

Practice

Problem

Trade marks are acknowledged by the law in the following manner: names and signs used by firms to mark their products are protected by the law. If another producer markets a product under the same name (or a very similar name), a court may prohibit this and punish the 'trade mark encroacher'.

Names or phrases which are used in everyday language are not protected by the law. For example, 'traditional detergent' or 'home kitchen' cannot be enforced as trade marks. (Anyone may market products under such names but may not prevent others from doing so.)

Is this distinction efficient?

Solution

- Increase competition in market (i.e. protection would reduce substitution)
- Constrain wasteful competition
- Externality: language is not constrained
- Reduction in administration costs
- Problems in distributing information (other label is necessary)
- Smaller incentives for higher quality products
- Constrained competition in quality

Revision

- What is the Coase theorem?
  - Strong version
  - Weak version
- Why (when) are transaction costs high according to Williamson?
  - What is the meaning of…
  …specific investment (idiosincrasy)
  …complete contract
  …opportunism
- What kind of contracts are (according to Williamson)…
  …classical contracts?
  …neoclassical contracts?
  …relational contracts?)
  …unified solution?

Discussion questions for contract law

- What is a contract?
- Contract = legally enforceable promise
- What is 'legally' enforceable? What other options for enforcement?
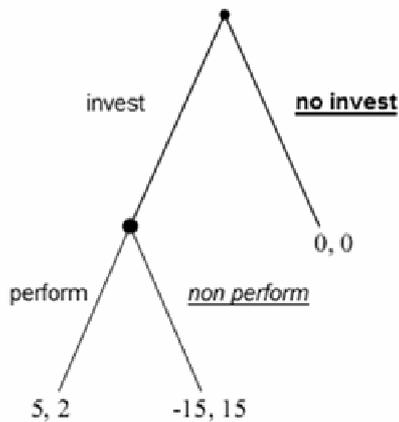- First: why contracts?

Why contract?

Trust game

Example: Willingness to pay for a house: maximum 20 million Fts; constructor: 15 million Fts (cost 13 + 2 million profit). Constructor starts building AFTER the price is fully paid.
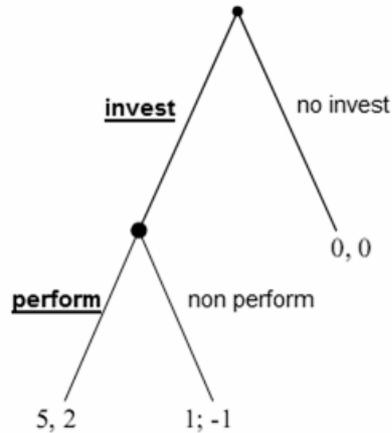
„Enforceable contract": If constructor breaches, he must (i) pay back the price (15 million), and (ii) damages: 1 million!

Equilibrium changes: without contract: no investment, with contract: cooperation
(investment, perform)

Trust game, no contract   **Trust game with contract**

Non-legal options

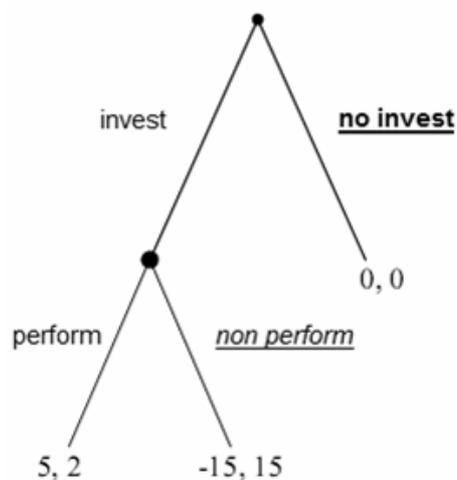**Other (non-legal) options for enforcement:**
*   *Morality*
*   *Repeated game*
*   *Reputation*
*   *Assurance – specific investment*

Morality

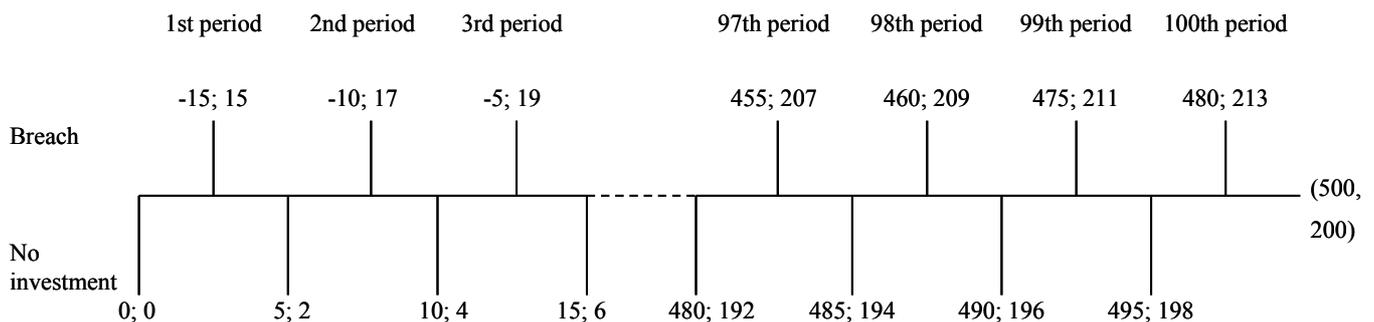The constructor is „moral":
if breach, guilty conscience.
Performance without contract
–   Information about his
    morality: from where?
–   Signalling: „moral groups"
    (e.g. religious groups, clubs)

Repeated game

- No other businesses.
- Simple form: no future business – gain now vs. present value of missed contracts
- Infinite game: gain from breach now (15 million) vs. present value of contracts ($2/r$)

	1st period	2nd period	3rd period		97th period	98th period	99th period	100th period

Breach: -15; 15   -10; 17   -5; 19   455; 207   460; 209   475; 211   480; 213

(500, 200)

No investment: 0; 0   5; 2   10; 4   15; 6   480; 192   485; 194   490; 196   495; 198

- Endgame problem – if final period is known. No incentives for performance/investment even in the first period – backward induction.

Repeated game:
final period is unknown

Present value of next period depends on probability of continuation (*p*)

1. Gain from breach now: 15 million Fts.
2. Perform in every period: discount for every single year:
$$\delta^t = \left(\frac{p}{1+r}\right)^t$$

- Cooperation, if *15 < 2 / (1–δ)*,
  from which *13 / 15 < δ*
- ceteris paribus: if (i) lower discounting, (ii) the probability of continuation high

Reputation

- Only a single contract between the parties, BUT contracts with others
- If full information => single breach, no future contract.
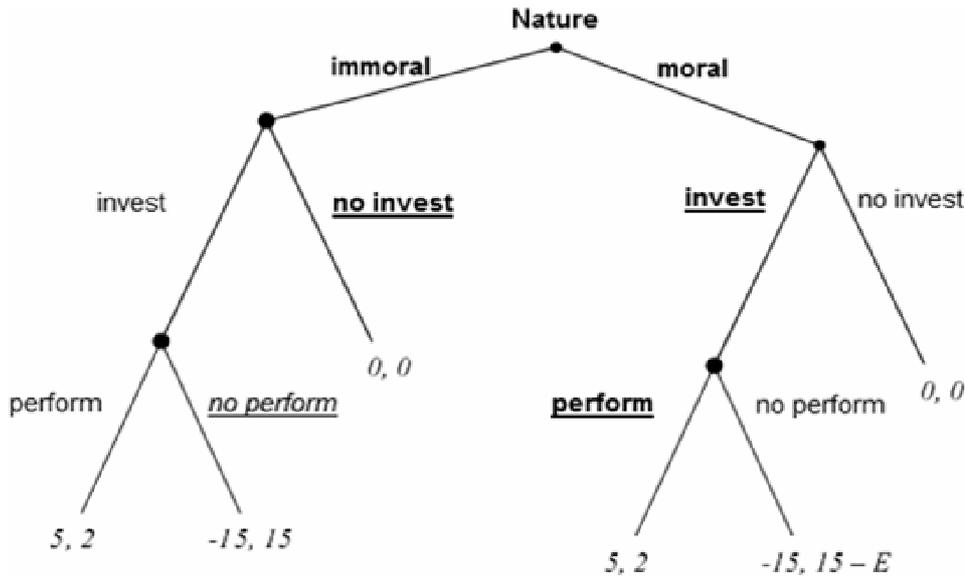
Assurance – specific investment

- Possession, return only if performance – i.e. hostage.

- *Specific investment*
  - Example: no advance payment, no payment if specific needs of the buyer are not fulfilled, the constructor is able to sell to others, BUT at a maximum price of 11 million Fts.
  - Idiosyncrasy: 4 million Fts. Strong incentives for high quality performance.
- Bilateral? (e.g. other constructor finishing the building for 17 million Fts). Neither party is interested in breach.

- Unilateral? May thwart rather than facilitate business.
    - Example: After advance payment, the constructor may require an additional payment.
    - Buyer may pay up to 19 million Fts: then he receives a 20 million Ft building for a sum of 34 million Fts (his loss is 14 million).
    If no – his loss is 15 million.