

Public Lecture: The Case Against Intellectual Monopoly

Michele Boldrin and David K. Levine

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Should we have intellectual property at all?

should we have

- patents
- copyrights

should we limit

- non-disclosure agreements
- shrink-wrap agreements

Is Intellectual Property “Property”?

What is property and why is it a good idea?

- property cannot be taken away without permission
- property can be sold
- this provides incentives to produce and trade

Why intellectual property is not property

- it is **copies** of ideas that have economic value, abstract ideas have no value
- copies of ideas are “property”; abstract ideas are not
- copies of ideas should not be taken away without permission, it should be legal to sell copies of ideas
- copies of ideas are not a public good: the fact that I can use my copy of your idea without limiting your ability to use your copy of your idea no more implies a “public good” or “externality” than the fact that I can drink from my coffee cup without limiting your ability to drink from yours
- intellectual property is about the right to control other peoples’ copies of an idea, not about the right to control your own copy of an idea
- “intellectual property” = intellectual monopoly

The Conventional Wisdom

the economics literature in general acknowledges that intellectual property leads to undesirable legal "intellectual monopoly," but generally argues that this might be a good thing

Kahn (1962) "The Role of Patents"

"This issue is not one of principle but of practical social engineering: how much protection...of what kind is required and worth paying for"

Our question: "Should we allow intellectual property at all?"

Reasons for Intellectual Monopoly

- **unpriced** spillover externalities – the example of the wheelbarrow
- prevention of secrecy – replacing private with public monopoly
- indivisibility and fixed cost

Are there Unpriced Spillovers?

Hard to see why they should be unpriced

Employees moving from firm to firm seem the most likely culprit

(from Gary Becker's textbook) "Firms introducing innovations are alleged to be forced to share their knowledge with competitors through the bidding away of employees who are privy to their secrets. This may well be a common practice, but if employees benefit from access to salable information about secrets, they would be willing to work more cheaply than otherwise."

- Evidence scarce to say the least; motivated by observations that firms in an industry tend to locate close to each other; best evidence (Ellison and Glaeser) is weak

Unpriced spillovers or simple minimization of transaction cost? Easier to transact, move and so forth when at the same location

- Are the externalities important in practice?

Secrecy

Does patent replace trade-secrecy?

- Ideas for which the secret can be kept longer than the patent term will not be patented
- Ideas for which the secret cannot be kept anyway will be patented
- Patent applications are too vague to make much difference anyway

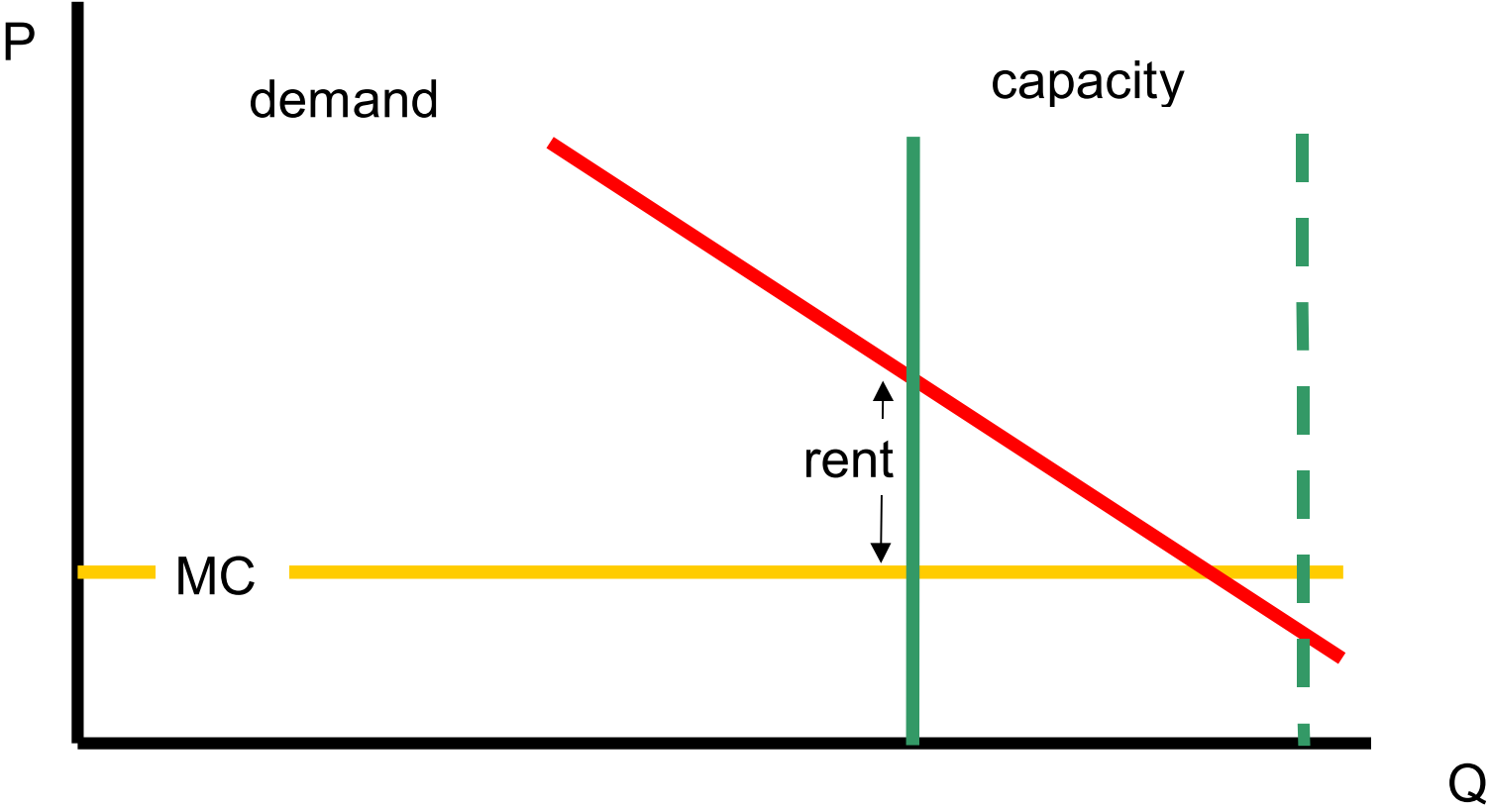
Indivisibility and Fixed Cost

- ◆ information, ideas are a “public good” means zero marginal cost of distribution → increasing returns to scale
- ◆ increasing returns to scale
 - fixed cost plus
 - constant marginal cost (nothing essential about zero) plus
 - marginal cost pricing → ***the firm loses money***
- ◆ if this were true intellectual monopoly would be necessary for the production of ideas and creations

What is Wrong with This Story?

- ◆ Build a shoe-factory, face constant mc of using it: same story; why is this not an issue?
- ◆ Shoe factories have a capacity constraint – leads to a positive return
- ◆ transmission of ideas is similarly limited by scarcity of current set of people and/or products embodying the idea
- ◆ In the shoe factory case, capacity is chosen small enough that the competitive rent covers the cost of building the factory
- ◆ With ideas there is the problem of *indivisibility*
- ◆ Indivisibility has similar implications to fixed cost, but not the same

Diagrammatics of Capacity Constraints



Ordinary Economics of Scarcity

- ◆ a new drug created by a team of (12) biomedical researcher over a period of time (1 year)
- ◆ at the end of the year the knowledge is *embodied in the researchers* (and possibly some of their writing) – no one can produce the drug unless the researchers tell them how to do it – no unpriced spillover here
- ◆ it is socially valuable to have other people know how to produce the drug
- ◆ for example: a second team of 12 expert biomedical researchers could set up a production line in Europe, while the original team sets up production in the U.S.
- ◆ transfer of knowledge is not costless – how long would it take them to explain to a group of inexpert economists how to produce the new drug? (huge literature on the problem of technology transfer...no mystery here)

two methods by which second team can obtain knowledge

- ◆ one: reinvent the wheel (1 year of team time)
- ◆ two: have the first team teach them (1 month of time for both teams, for example)
- ◆ second method minimizes team time (1 yr. 2 months), but production starts after 1 year 1 month
- ◆ first method: maximizes team time (2 yrs) but production starts after 1 year
- ◆ beginning production one month earlier has social value – this implies that the FIRST team can sell their knowledge into a competitive market and earns a **positive return** not zero as in the conventional story

The Problem of Competitive Innovation

"During the nineteenth century anyone was free in the United States to reprint a foreign publication, and yet American publishers found it profitable to make arrangements with English authors. Evidence before the 1876-8 Commission shows that English authors sometimes received more from the sale of their books by American publishers, where they had no copyright, than from their royalties in [England]" where they did have copyright.

Arnold Plant [1934] "The Economic Aspects of Copyright in Books," *Economica*, 167-195

But what happens when the internet replaces the clipper ship?

A Model of Competitive Innovation

- Innovator has one unit he must sell into a competitive market
- It sells for price q_0 , which accrues to the owner of the fixed factor
- Introducing first unit of the new good, entails some cost $C > 0$
- Innovation produced if and only if $C \leq q_0$
- Extreme case: the innovation may be freely copied and may be used while it is copied
- Each existing copy produces β new copies next period
- So the total number of units available grows exponentially at the rate β

What is the impact of reduced distribution cost

Conventional wisdom suggests that in this case rents fall to zero, and competition must necessarily fail to produce innovations

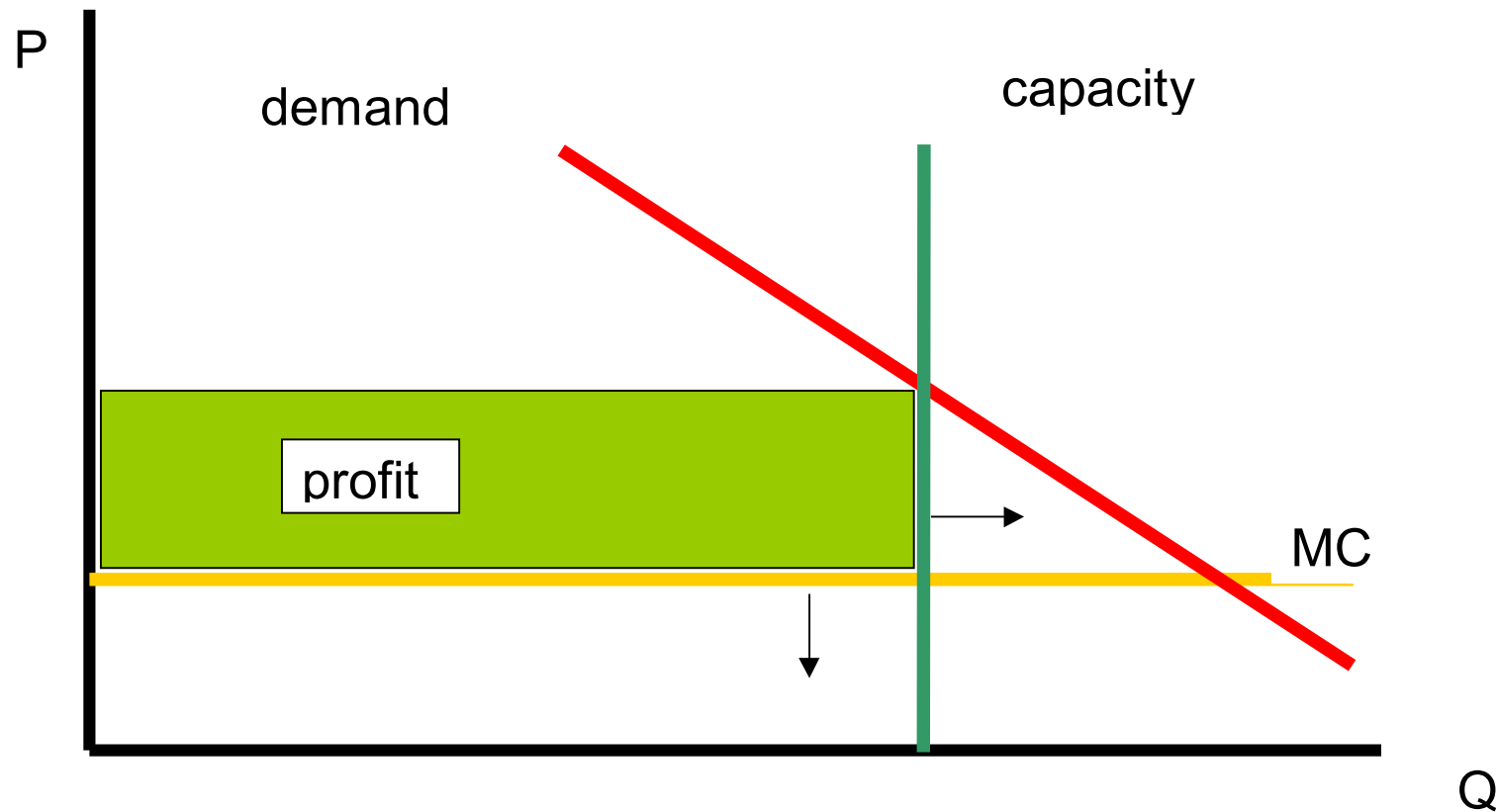
Conventional wisdom fails for two reasons:

- The first mover advantage
- Although prices may drop, profits may increase

First Mover Advantages

- Secrecy
- Encryption (DRM)
- Reputation, customer loyalty
- Reward to anticipating stock market fluctuations (Ginger/Segway)
- Time and cost required for rivals to reverse engineer
- Alternative sources of income – live or theatrical performances for music and movies, paper books

Diagrammatics of Capacity Constraints



- Conventional wisdom ignores the impact of limited capacity: price must drop, but profits may go up or down

The Size of Indivisibility

May not be relevant

- on the other hand, the social optimum might be such that saving a month in the start of production has social value exceeding a year of team time – in this case the costs of the first team are necessarily covered by the competitive rent
- the same technological change driving reduced distribution costs is greatly lowering the cost of production for movies and music

May be relevant

- it may be that (say) the team would have to produce $\frac{3}{4}$ of an idea to be able to recover costs – but this is not feasible because of indivisibility

Intellectual Property and the Scale of the Market

- ◆ growth reduces need for intellectual monopoly as it reduces the importance of the indivisibility
- ◆ even if we accept the conventional logic, expanding the scale of the market increases the incentive to innovate – the optimal policy is to reduce protection as the scale of the market expands
- ◆ world GDP has grown by a factor of nearly 100 since 1900
- ◆ WTO expands the market by nearly 50%
- ◆ the WTO, in exchange for expanding the number of countries enforcing patent and copyright protection, should agree to a reduction in the term of patent and copyright protection
- ◆ over the longer run as the global economy expands, patent and copyright protection should be phased out, as competitive rents alone will be able to do the job once the scale of market is large enough

Does Intellectual Monopoly Lead to More Innovation?

- Innovations generally build on existing goods, that is on earlier innovations – it is generally recognized that intellectual property protection has an undesirable effect on future innovation – Scotchmer (1991) for example
- Intellectual monopoly increases the rewards to innovation – but also the costs
- Intellectual monopoly make strictly lower innovation
- James Watt refused for the 31 years of his monopoly to allow innovation in the steam engine
- the Wright brothers less succesfully tried to do the same with the airplane

Rent-Seeking

- ◆ Sony Bono copyright extension (20 years retroactive) and Eldred Case
- ◆ impact of DMCA on academic research and free speech
- ◆ efforts to legally mandate computer hardware to reduce copying (the computer industry is roughly an order of magnitude greater in size than the media industry being protected)
- ◆ delay in the introduction of the steam engine and of the airplane
- ◆ spread of AIDs in Africa
- ◆ submarine patents and legal blackmail – recently Eolas; SCO

Second best argument: we have to put up with all of this, because without IP there will not be any innovation, but as we have seen this is not the case

Goals of Public Policy

- Economic theory supports the view written in the U.S. Constitution copyright only in order to “promote the progress of science and the useful arts.”
- producers must be compensated for their work, or creative works will not be produced; economic theory shows that copyright and patents are not necessary for producers to be compensated
- economic theory does not argue that producers of intellectual property should be privileged over other producers unless there are social benefits to compensate for the costs of special treatment
- economics explicitly rejects the view of some artists, and the view widespread in Europe, that creators are uniquely entitled to control of copies their own creations.

Copyright: Who are the Pirates?

- to understand arguments about economic policy: understand the motives of the parties
- imagine a mind-reading device
- every time you listen to a bit of music (even in your mind) your credit card is automatically billed for the exact level of enjoyment you receive
- suppose this device is controlled by the same five music “majors:” AOL-Time Warner, EMI, Sony, BMG, and Universal that currently control 85% of the market for music
- Who would benefit from such a device?

Shareholder, Top Executives

- every penny of benefit from listening to or imagining music would accrue to the producers
- little benefit to employees of the majors, or contractors such as sound editors, engineers, lawyers and promoters – their salaries are determined in the competitive labor market
- an enormous windfall to existing shareholders CEO's and other top executives, whose lives, careers and fortunes depend crucially on the stock price of their companies

Artists

- most artists and songwriters face an extremely competitive market
- bound to long-term contracts with the majors to whom they effectively cede the copyright to their creations
- a few very top artists have no close substitute for their creations so they too would share in the monopoly profit

Society

- consumers would receive no benefit from music at all
- more insidious social consequences:
- with the mind reading device copyright is very lucrative, so the incentive to produce a small variation and share the windfall is great
- truly original creators cannot be compensated for all the imitation their original work spawns
- example: Chuck Berry today is relatively poor; his many imitators, including the Beach Boys and the Beatles are quite wealthy
- we would expect that too many imitation works would be produced, and too few genuine innovations
- stepping away from the music industry, consider textbooks - instead of a few good books we have many mediocre ones

As expected

- we expect top music executives, music company shareholders and a few top artists to favor the mind-reading device
- other people in the music industry neutral
- pretty much everyone else to be against
- pretty much describes the parties to the modern conflict over copyright
- heads of major corporations, supported by a few top artists argue in favor of stronger protection of their intellectual property
- these corporations have vast financial resources so can mount an effective lobbying effort
- their opposition is diffuse and scattered and much less able to lobby (and buy) politicians.