

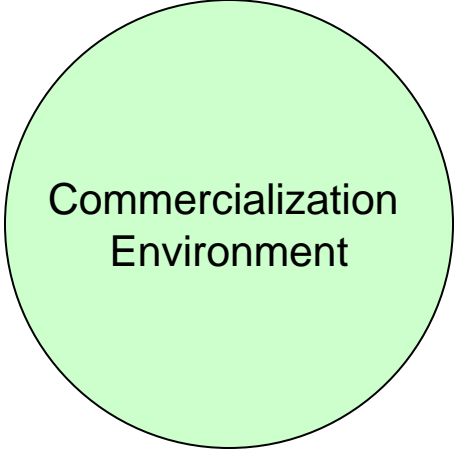
The Impact of the Patent System on the Market for Technology

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The Evolving IP Marketplace
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Questions

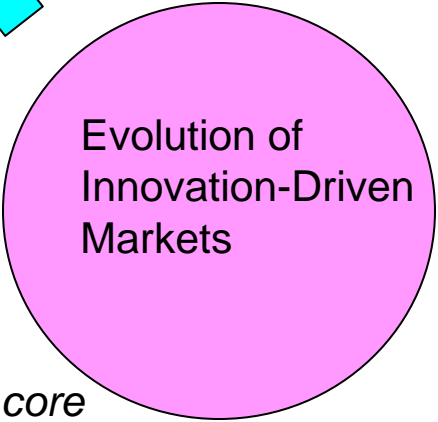
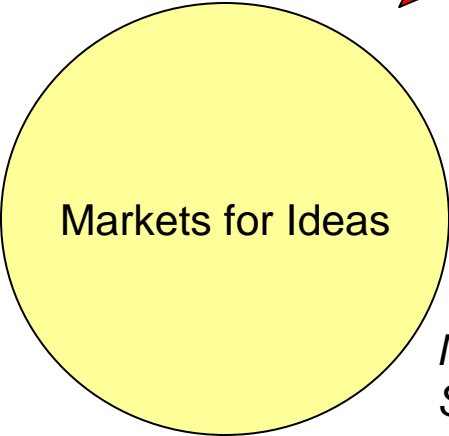
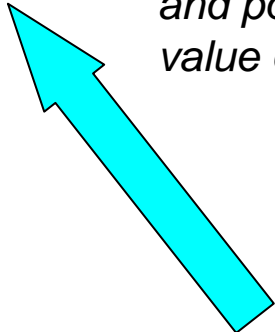
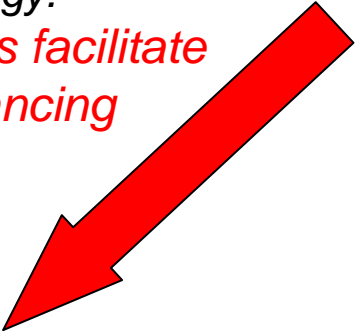
- How do ***formal intellectual property rights*** impact the ***market for technology***?
- What are key **welfare** consequences of an effective market for technology?
- How does the ***operation of the patent system*** impact the welfare arising from the market for technology?



Innovation-driven markets shape the commercialization environment, as reputations are developed, brokers are established, and through the development of institutions and policies reinforcing the value of an “IP Marketplace”

The Commercialization Environment is a crucial driver of the structure and scope of markets for ideas and the evolution of technology.

Effective IP Rights facilitate transactions, enhancing commercialization



Markets for Ideas can undermine Schumpeterian dynamics, and serve as a core driver of the evolution of innovation-driven markets. In the presence of a market for ideas, incumbent competitive advantage can be reinforced by technology entrepreneurship

The Commercialization Hypothesis

- *Effective intellectual property protection promotes trade in the market for ideas, enhancing efficient cooperative commercialization of new technologies*
- An effective market for technology can result in powerful welfare gains:
 - Rapid product market introduction
 - More effective product market positioning
 - Division of innovative labor encouraging experimentation and entrepreneurship for emerging technologies
- Potential policy concerns
 - Cooperation between innovators and established firms as an alternative to product market competition
 - The potential for inefficient hold-up and commercialization thickets for “probabilistic” patents

MIT Commercialization Strategies Survey

Figures represent the rate of cooperation within each “cell”		Do incumbent’s complementary assets contribute to value proposition from new technology?	
		No	Yes
Can invention by the start-up preclude effective development by the incumbent?	No	14%	30%
	Yes	34%	56%

Start-up innovators earn their returns on innovation through the market for ideas when there is a strong IP regime, and innovators face high relative costs in acquiring and controlling complementary assets necessary for commercialization. As imperfections arise in the market for ideas (e.g., when patents are unavailable), start-up innovators pursue competitive strategies, contributing to the gale of creative destruction.

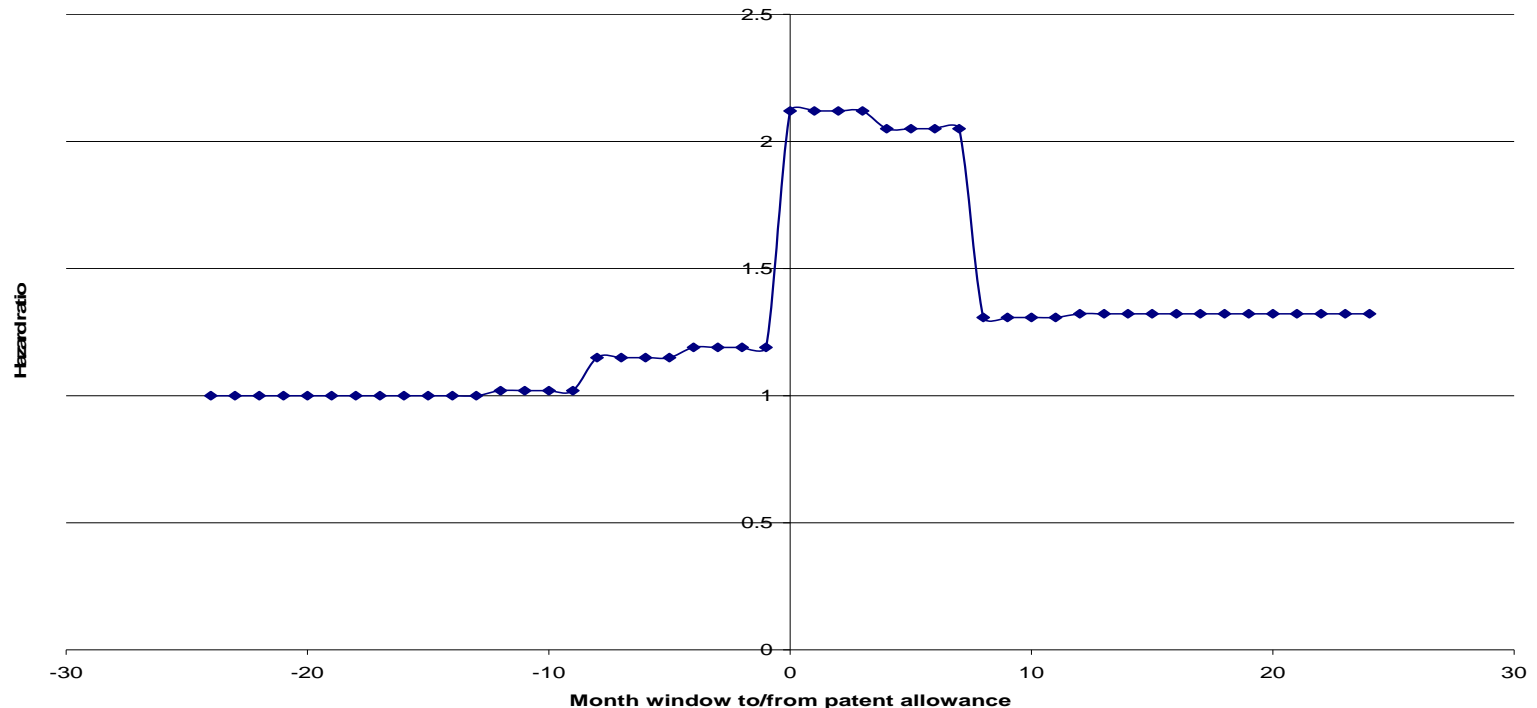
Adapted from Gans, Hsu and Stern (2002)

The Probabilistic Patents Problem

- Most theoretical and empirical research on markets for ideas assumes that the operation of the IP system establishes well-defined, enforceable and timely IP rights
- However, recent research emphasizes that the operation of the patent system results in *probabilistic* property rights (Lemley and Shapiro, 2005), resulting in uncertainty over
 - Patent grant and scope
 - Patent enforceability
 - Patentability of emerging technologies

How does the ***operation of the patent system*** impact the welfare arising from the market for technology?

The Impact of Uncertainty over IP Scope on the Market for Ideas



The timing of cooperation in the market for ideas is closely tied to the resolution of uncertainty -- the pace of licensing increases dramatically after the scope of patent rights are clarified. The dynamics and efficiency of commercialization are influenced causally by the operation of the patent system

The Impact of Uncertainty over Patent Validity on the Market for Ideas

- Contentions and ongoing debates about the impact of aggressive IP enforcement by non-producing entities
 - “Patent Trolls” versus “A Flash of Genius”
- The probabilistic nature of patents suggest that current litigation patterns may reflect a significant loss of potential social welfare from the market for technology
 - Hold-Up: Presumption of validity (alongside potential for injunctive relief) offers incentives to delay bargaining with potential technology to enhance ex post bargaining power
 - Rational Ignorance: Extremely costly for production-oriented firms to ensure ex ante freedom to operate
 - Strength of Weak Patents: Possible to use upstream-downstream licensing to implement monopoly product market outcome, even when upstream IP rights are weak

→ But what happened to the IP marketplace?

The Impact of Uncertainty over Subject Matter Patentability on the Market for Ideas

- Theory suggests the value of an effective market for ideas may be most salient for emerging technologies involving significant entrepreneurial experimentation and where the product market applications may be hard to anticipate
- But the operation of the patent system is particularly uneven for emerging technological areas and subject matter areas
 - Gene Patents
 - Business Method Patents



Implications

- Though an effective IP Marketplace has tremendous potential for the creation of social welfare through the effective commercialization and exploitation of new technologies, the maturity and efficiency of such markets are still emerging.
- Formal intellectual property protection in the form of patents plays a fundamental and causal role in the development of an effective market for ideas.
- One of the principal constraints on the evolving IP Marketplace is the operation of the patent system. The current system fails to deliver timely (if “rationally ambiguous”) rights nor does the litigation system offer sharp incentives for pro-competitive commercialization strategy.