

Licensing Games

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1. Aineas Mallios
Patent Licensing and Duplication in Cournot Structures
2. Aineas Mallios
Licensing Patent Rights and Trade Secrets
3. Aineas Mallios
Patent Licensing, Imitation, and Litigation



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Patent Licensing

Patents are legal instruments that protect ideas, and the rise of a knowledge-based society was inevitably accompanied with their increased economic importance. As a result of this growth, patented technology became an indispensable element of firms, governments, and modern economies. Nevertheless, patents preserve their economic value only if they can be enforced in court, which is, in fact, a trait common to various instruments designed to protect intellectual property. However, contract enforcement is often imperfect. Therefore, the protection offered by patents is not absolute, raising a number of implications for their use.

This thesis studies the use of intellectual property rights, with a focus on technology transfer through licensing. In particular, it examines the choice of a licensing mode by a patent owner when the protected technology can be transferred and imitated. Additional emphasis is put on the impact of patenting and secrecy on the strategic behaviour of innovating firms, specifically on the incentives to license and imitate. It also analyses the litigation of patented technology that is prone to imitation when the legal protection is imperfect. The main results derived from the analysis can be summarised as follows.

First, the analysis shows that the licensing mode of intellectual property is a strategic choice primarily driven by the relative magnitudes of the per-unit production costs, the magnitude of innovation - the reduction in the per-unit cost because of the new technology - and the imitation cost. Particularly, licensing by way of a per-unit royalty might be preferable to licensing by way of a fixed fee from the viewpoint of a patent owner, while fixed-fee licensing might be at least as good as royalty licensing for consumers. Additionally, licensing might be used to prevent imitation, but might not be used to strategically select competition before patent expiry.

Second, the analysis finds that the availability of a choice of protection affects the strategic behaviour of innovating firms and the type of inventions licensed in the industry. Patenting might be more or less preferable than secrecy from the viewpoint of a technology owner, depending on the efficiency of the imitation technology and the strength of intellectual property protection. Furthermore, highly inefficient imitation technologies might render licensing preferable to imitation, while highly efficient imitation technologies might lead to more imitation than licensing. Acknowledging that a trade secret might leak to the public and also considering that the probability of leakage might increase with the number of firms practising the secret, the analysis suggests an increase in the attractiveness of patent protection.

Third, the analysis also finds that licensing, imitating, and litigating over a patented technology is dependent on the magnitude of innovation, the efficacy of imitation, and the strength of the judicial system: the degree to which increased litigation spending can influence the outcome of the court. When litigants expect to settle the dispute out of court, a sufficiently small magnitude of innovation might lead to licensing before imitation (an ex-ante licence), while a sufficiently large magnitude of innovation might lead to licensing after imitation (an ex-post licence). In addition, a patent owner benefits by taking no action against a highly imperfect imitation.