

# Modern IP Licensing Practices: New Actors and New Strategies

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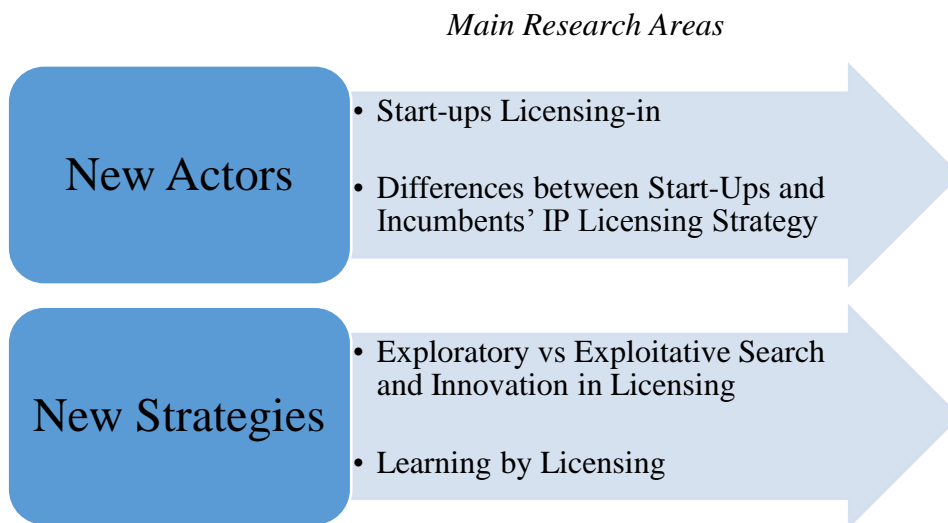
## Abstract

Traditionally, Patents, trademarks and copyrights have been considered important appropriation tools that protect the results of firms' innovative efforts from the competition, improving competitive advantage and thereby encouraging investments in R&D that bring about essential progress for society. However, with the advent of a new digital age, with increasingly distributed knowledge sources and phenomena such as global competition that place pressure on technology lifecycles, managing know-how has become increasingly strategic for companies throughout the entire product lifecycle. Within this context, firms are required to critically re-examine their IP management strategies as a key tool in the broader scope of their business strategy. Technology licensing is recognized as one of the most affirmed practices for the exchange of IP among different actors including private individuals, universities, research centers and firms. Licensing-out was traditionally pursued to obtain additional financial gains from internal innovation, to create technological standards or for entry into new markets, while Licensing-in occurred as a result of patent infringement or as a means to fill technology shortcomings with respect to the competition. Nowadays, licensing often accompanies broader Open Innovation strategies, as a means to ensure that the benefits of collaborative innovation are shared, and the participating firms are able to maintain a competitive advantage. For this reason, licensing is no longer a hallmark of large incumbents, with broad R&D portfolios or relevant market entry that would enable them to immediately exploit external technologies. New actors, such as entrepreneurial start-ups, with more specialised knowledge and higher flexibility, are increasingly playing a part in these markets. Moreover, long-term strategic goals are being pursued not just by them, but by the more traditional actors who now see these markets as an additional channel to gain access to essential knowledge and to create longer term collaborations with the best innovators.

The dissertation is organized as a collection of four papers. The first two concentrate on providing different insights of the same phenomenon - technology in-licensing by start-up companies, also compared to incumbents. The third and fourth concentrate on new IP management strategies in license agreements, which is one of the main themes emerging from literature, with a focus both on the licensing opportunities disclosed to the licensor and the licensee. Throughout the dissertation, different methodologies were used. The first paper contains a purely qualitative exercise using case studies, the

second includes an exploratory mixed-methodology using both qualitative and quantitative data, while the last two are purely quantitative.

The first paper explores the phenomenon, of start-ups acquiring external technology at an early stage of their activities, performing a broad investigation into different facets of the start-up firms' in-licensing activities such as contractual aspects, core and non-core technologies, and technology push vs demand-pull perspectives. The second paper, which follows on directly from the first one, focuses on IP in-licensing strategies for Start-ups accessing external technology at the outset of their lifetime, evaluating which technologies are acquired and which IP management strategies are successively implemented, and key differences with respect to incumbent firms, combining markets for technology, open innovation and entrepreneurship theory. The third paper presents a quantitative analysis to evaluate how in-bound technology which is explorative or exploitative with respect to the firms' existing know-how, has a differing impact on incumbents and start-ups' technology trajectories and innovation activities, using open innovation and resource-based theories of the firm. Finally, the fourth study, focuses on the topic of learning in licensing contracts, to evaluate when the licensee's follow-on innovation activities can become a learning opportunity for the licensor, from the point of view of vicarious learning and open innovation.



All together the works aim to provide a picture of key aspects of modern-day markets for technology, which encompass both new actors and new strategies. A short abstract of each paper is presented below.

1. **Start-Ups and Licensing Agreements: New Insights from Case Studies.** The first study approached the field with an exploratory mind-set, aiming to ground the dissertation in real-life occurrences, tying them to existing literature, while sharpening the focus towards

interesting areas of study that could be informed through this line of research. The paper was built on interviews with start-up companies that licensed-in an external technology within the first two years of their lifetime. It discusses *under which conditions technology licensing between a licensor and a start-up can be beneficial to both parties*. The theoretical analysis encouraged a focus on the role of contractual clauses, the relationship between licensor and licensee, the role of the licensed technology in the products/services of the start-up and the role of a technology push versus demand-pull scenario in the licensing deals. The results indicated four interesting areas for research around start-ups and technology in-licensing activities. First of all, as an input to the licensing process, contractual clauses and their combination were considered very important and consequential both for licensors and licensees. Even more interesting, several potential outcomes of the licensing process, which were mentioned by the start-up firms, caught our attention. Results showed that a licensed technology can be much more for start-ups than a legal instrument, having a strategic role in their initial development and in their future technology trajectories. This is also in line with Graham et al. (2009) who report that start-ups are accessing external IP mainly for learning purposes rather than to avoid litigation. Therefore, the remainder of the dissertation was focused on expanding knowledge of two key outcomes of start-ups' in-licensing activities, and more generally examining organisational learning in licensing settings.

2. **Walking into the room with IP: Exploring Start-Ups' IP Licensing Strategy.** The interviews developed during the previous qualitative study were used to complement the empirical analysis in this second paper, which explores IP management strategies for Start-ups accessing external technology at the outset of their lifetime, evaluating which technologies are acquired and which IP management strategies are successively implemented. Open innovation (OI) strategies are increasingly applied by firms as they attempt to bring novel products and services to market. In order to reap the benefits from shared innovation processes, appropriability is becoming an even more pressing concern for, carving out an increasing role for formal intellectual property (IP) management. This argument is particularly relevant for start-ups, for whom not only the liability of smallness but also the liability of newness pose challenges in the execution of OI practices. The setting of patent licensing, which is one of the most frequently used methods to exchange IP, was chosen to examine which type of IP is being acquired by Start-up firms, as well as their successive IP management strategies. Attempting a new perspective within a relatively well-studied field,

an exploratory study, based on a mixed research was chosen, setting the stage for further research. Findings demonstrate that start-ups indeed pursue different IP management strategies than incumbents when accessing external technologies, such as more exploration than exploitation-oriented strategies and less cross-licensing deals than simple technology acquisitions, executing more sophisticated IP management activities than suspected. What is mostly relevant and counterintuitive is that they do not necessarily depend on the in-licensed IP nor on the licensor's knowledge base for nurturing their future innovation activities.

- 3. Learn and Let Learn. Re-inventing the Licensing Dilemma: An Explorative Study** The final paper revisits the classical licensing dilemmas, including *the learning-argument* in the debate. Indeed the decision to license may ultimately depend on learning opportunities disclosed to both parties, which can be exploited to thrive in the current collaborative environment. Based on an original explorative study, built around an extensive longitudinal cross-industry database, we investigate the licensor-licensee dyads on several dimensions, capturing their technological profiles and the different learning paths available and exploited by them to different extents such as exploration and exploitation, knowledge spill-overs and vicarious learning. Findings offer several insights consistent with a learning scenario, thus prompting further empirical research.
- 4. Oh! The Places You'll Go! Technology Trajectories in the Presence of Externally Sourced Technology:** Following on from the previous paper, the third study aims to zoom into the relationship between exploratory and exploitative search and the resulting technology trajectories, in terms of explorative or exploitative innovation, in licensing agreements. In particular, it highlights the relationship between the technology and the final innovative output, distinguishing between exploratory and exploitative search vs exploratory and exploitative innovation, also highlighting the different types of learning occurring thanks to the license. We show four different scenarios that can play out and evaluate whether start-ups and incumbents have different likelihoods of participating to each scenario.