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Patenting by Entrepreneurs:

An Empirical Study



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SUMMARY			
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Abstract

The University of California Berkeley School of Law held in 2018 the first extensive survey on the connection between patenting and entrepreneurship in the United States. The survey considered approximately 15,000 start-up and early-stage companies in the fields of biotechnology, medical device, information technology hardware, software and internet.¹ The present article aims to analyse the results of the survey, demystifying concepts and beliefs about start-up patenting.

Keywords

Patent; start-up; small firms; survey; licence; investor; biotechnology; software; hardware

Summary

The authors start with a presentation of theories regarding the reasons why inventors and companies decide to patent. In particular, they refer to the following theories:

A. Earning supernormal profits

The first theory comes from the classical concept that the exclusivity right granted by the patent incentivises businesses to innovate due to the financial gain that it provides to the firms and the inventors. With this exclusivity right, companies are able to set higher prices than the competitive market would bear.²

However, start-ups and early-stage technology companies may be subject to a different cost-benefit scheme when deciding to file for a patent. Start-ups, besides having limited IP budgets, may be R&D specialists that invent not yet marketable products.³

B. Generating Licensing Revenue

¹ *Ibid*

² *Ibid*, 111

³ *Ibid*, 113

The second motivation for patenting is earning revenue in form of licences or royalties from authorized third parties and/or damage awards in patent litigation.⁴ Usually companies follow this path when licensing will generate more revenue than developing and commercializing their inventions, or due to their lacking capacity to meet the whole market demand for their patented products and services. Sometimes the costs and uncertainty of patent litigation are so high that even when firms think they would win in court, they might settle for a license.⁵

There is one type of small firm licensor known as patent troll, which earns its profits through licensing or damages awarded in infringement suits.⁶

C. Developing an Arsenal for Cross-Licensing

The third theory suggests that a firm holds a well-stocked arsenal of patents to be in a stronger bargaining position.⁷

D. Securing Investment and Financing

Studies have shown that intensive patenting by acquisition targets is associated with increases in purchase prices, even if the patent is not valuable to the start-up.⁸ Also, patents are valuable assets to companies and can signal that the company has a high industrial expertise.⁹

E. The best defence is a good offense: patent as shields

Companies often raise counterclaims in patent litigation. This can lead the plaintiff and the defendant to analyse the possible damages considering the threat of an injunction and settle instead of moving forward with the litigation.

F. Patent Bullying

Firms with large patent portfolios can enter into a patent war against their competitors as a way to undermine their business.¹⁰ The authors illustrate an example of patent bullying, namely the story of Vonage, a company founded in 2000. Vonage was one of the first of a new wave of telecom start-ups to provide voice services over the internet through traditional headphone handsets.¹¹ The company had a significant success during its first 6 years on the market until Verizon, AT&T and Sprint asserted several patent infringement claims against the company. Vonage settled for \$200 million, which, however, affected their marketing expenditures and caused nearly a 90% decline in the company's value.¹²

G. Blocking and Preemptive Patenting

Companies can seek patents to preempt competitors from gaining patent protection over the company's own inventions.¹³ Blocking is a common practice among big firms: by improving an

⁴ *Ibid*, 118

⁵ *Ibid*, 119

⁶ *Ibid*

⁷ *Ibid*, 120

⁸ *Ibid*, 122

⁹ *Ibid*

¹⁰ *Ibid*, 126

¹¹ *Ibid*

¹² *Ibid*

¹³ *Ibid*, 127

existing patent of its competitors, the latter can be prevented from realizing the full value of their own patents.¹⁴

H. Patents as Foils

The authors describe this theory as an approach used by companies to mislead their competition that they are pursuing a technological path that they are not actually taking. For instance, a company can file for a patent and, with the disclosure, direct their competitor's attention to something that they are not actually working on.

I. Patents as substitutes for non-disclosure agreements

Companies with strong employee turnovers may require a stronger protection of confidential information than the one a non-disclosure agreement can offer. A patent can be a solution, since it prevents the technology to be copied by anyone and it provides the inventors with a stronger coercion of injunctive remedies.¹⁵

Start-ups and small firms have more incentives for using patents in this way, especially in their relationships with larger firms, but the lack of financial resources can again inhibit them to follow this strategy.¹⁶

J. Image is everything

A patent can be seen as a sign of technological expertise in a specific field, so inventors may seek to patent for personal and professional reasons related to their image or prestige.

K. Reasons for not Patenting

Five main reasons make companies decide not to patent. The first is that **technology is erroneously perceived as unpatentable** by the inventors. Usually they believe that it is either outside of the scope of the patent law's subject matter allowance or obvious in view of the prior art.¹⁷

The second reason not to patent is the **high cost of patent litigation**.

The third reason is the **perception that patents will provide weak protection** due to the belief that patents can easily be designed around. However, some evidence suggests that it can be difficult to design around patents, regardless of the underlying technology.¹⁸

The fourth reason is the **fear of disclosing valuable trade secrets**. The authors suggest that if an invention can be easily copied or reverse-engineered, it is not advisable to expect much value from trade secret protection.¹⁹

The last reason why start-ups may not patent is that they might believe that **other types of protection** (legal or non-legal) may fit better to their business strategy.²⁰

¹⁴ *Ibid*

¹⁵ *Ibid*, 130

¹⁶ *Ibid*

¹⁷ *Ibid*, 132

¹⁸ *Ibid*, 135

¹⁹ *Ibid*, 136

²⁰ *Ibid*, 137

The characteristics of the 2008 Berkeley Patent Survey.

The Berkeley Patent survey of 2008 was the first survey in the United States targeting startup and early-stage companies' interactions with the patent system.²¹ The survey includes a variety of questions centered on how patenting, patent licensing and patent litigation relate to company innovation, capital formation, business strategies, competition and alternative forms of intellectual property protection.²² The sectors analyzed were biotechnology, medical devices, software and hardware. The sample frame used on the research was drawn from the databases Dun & Bradstreet and VentureXpert using the Standard Industry Classification and North American Industry Classification System to identify companies in relevant industries.²³ The total effective response rate was of 12.3% being 10.7% for D&B firms and 16.6% for VX firms. In the study, the responses were segmented by patenting rates and total revenue, which lead it to discern and generally compensate for several potential sources of biases.²⁴

Major Results Regarding Motivations and Hindrances to Patenting.

The survey separated the reasons for seeking patent protection and divided the scale of importance between 1-4, meaning 1 not important at all, 2 slightly important, 3 moderately important and 4 very important. The results are the following:

- Prevent others from copying – 3.59
- Improve chances of securing investment – 3.27
- Obtain licensing revenues – 2.4
- Improve chances/quality of liquidity – 3.23
- Prevent patent infringement actions – 2.93
- Improve negotiating position – 2.95
- Enhance company's reputation – 3.12²⁵

Although the main reason for seeking patent protection is to prevent others from copying the patented invention, its effectiveness depends on a number of different factors. The first factor is the expected level of consumer demand for the innovation.²⁶ The second factor is the ease of reverse engineering and copying the innovation with design around.²⁷ As the authors' analyze it, it is necessary to observe the nature and degree of competition in the marketplace, followed by the risk profiles of the innovator and its competitors and, finally, the amounts of capital the innovator and potential infringers have available to enforce a patent or defend against patent infringement.²⁸ In the survey, biotechnology and medical device firms list preventing copying as very important while hardware and software firms place less emphasis on this reason.²⁹

Securing financing and improving valuation are seen by the authors as important drivers to patent. Biotechnology and medical device firms list patenting to secure investment and to improve the

²¹ *Ibid*

²² *Ibid*

²³ *Ibid*, 149

²⁴ *Ibid*, 152

²⁵ *Ibid*,

²⁶ *Ibid*, 155

²⁷ *Ibid*, 154

²⁸ *Ibid*, 155

²⁹ *Ibid*, 159

chances and quality of a liquidity event as more important than hardware firms and much more than software firms do.³⁰

The respondents reported that the importance of securing licensing revenue was significantly lower than the other reasons.³¹ Also, the high revenue entrepreneurial firms reported that licensing is a less important reason to patent when compared to low-revenue firms.³²

When it comes to the reasons for not patenting, a large amount of the respondents reported that the cost of obtaining a patent as the main reason, followed by the cost of enforcing the patent. As it can be observed previously, these reasons equally apply to small companies and start-ups.

Cost is the major Hindrance to Startup Patenting

On a scale from 0%-60% companies refrained from patenting for the following reasons:

- No need for legal protection - 17.50%
- Believe technology was not patentable - 37.54%
- Cost of enforcing patent - 45.49%
- Believed trade secret was adequate protection - 35.63%
- Competitors could invent around patent - 44.64%
- Cost of getting patent - 56.63%
- Did not want to disclose information - 34.99%³³

After the patent examination process, only about 70% of the patent applications become a patent. This is one of the reasons why a high number of the respondents claimed that it believed that the technology was not patentable.³⁴ The authors argue that the lack of experience of the new firms with the patent office can lead these companies to have a misconceived idea about the reason mentioned above and the ability to others design around a patent.

Firms were also very reluctant to disclose their information to their competitors and, therefore, use trade secrets instead of patents as a form of protecting their intellectual property. The authors expect small firms to fear more that larger competitors will use their proprietary information.³⁵

³⁰ *Ibid*

³¹ *Ibid*, 163

³² *Ibid*

³³ *Ibid*, 167

³⁴ *Ibid*, 171

³⁵ *Ibid*, 174