Why Technology Start-Ups Should Be Paying More Attention To Patents

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Abstract

Technology start-ups are key drivers of innovation. However, patents are often not their priority, especially in Europe. Key reasons for this are their strong focus on rather short-term objectives like winning paying customers and raising money from investors. Other complicating factors are the very divergent time-frames involved in the patent business and in growing a technology start-up with its regular strategy adjustments (pivots).

The best lever to motivate technology start-ups to invest in patent portfolios is through their investors. Therefore, more awareness and insights should be created among venture capital firms on the value of patents for their portfolio companies.

Introduction

In today's world, technology start-ups and (later-stage) scale-ups play a crucial role in innovating many industries, either by bringing breakthrough products or services to market or by helping established companies substantially improve their products or processes. Technology start-ups that drive innovation contribute strongly to productivity and economic and job growth. According to the 2017 report by the Center for Economic Studies at the U.S. Census Bureau,[1] "high growth output firms are disproportionately young and make disproportionate contributions to output and productivity growth." As technology start-ups are so important for innovation, to what extent should they be concerned with patents and combining them with other intellectual property (IP) rights?

Technology Start-ups Have Other Priorities

Start-ups are usually still very small organizations with founders who have to take care of all aspects of the business, with limited time and especially with (very) limited budgets. So they have to set priorities on a day-to-day basis. Their main priorities are usually paying customers and investors who provide the capital they need to survive the coming months. Thus, it is not surprising that many technology start-ups are not prioritizing the development of an optimal patent portfolio since this requires time and money and may not bring any additional revenue in the short term.

What Arguments Can Convince Technology Start-ups to Pay More Attention to Patents?

Of course, the first consideration has to be whether patents or other IP rights could be relevant for the products and business of the technology start-up. For high-tech companies, the answer to this is usually "yes." According to the 2019 study "High-growth firms and intellectual property rights" by the European Patent Office and the EU Intellectual Property Office,[2] high-tech SMEs that filed European patents are 10 percent more likely to experience high growth (over 20 percent revenue growth for at least three consecutive years). Therefore, there are several reasons why technology start-ups should pay serious attention to their patent portfolios. For SMEs, a well-developed patent portfolio can:

a. Support obtaining freedom to operate, *i.e.*, an SME can run its business without the risk of being confronted by patent infringements;

b. Protect their inventions from copycats, which gives them a sustainable competitive advantage;

c. Improve their negotiation position when licensing technology to B2B customers;

d. Strengthen their negotiation position in standards development or cooperation projects;

e. Generally improve their reputation;

f. Allow using patents as collateral for securing loans; and,

g. Increase their attractiveness for investors (which we come back to below).

For a more extensive overview of the reasons to patent and several concrete case studies, please refer to "4 Reasons to Patent" by the 4iP Council.[3] The motives for filing and maintaining patents by SMEs (a much broader group than just start-ups) can be found in the Patent Commercialization Scoreboard of the European Patent Office.[4]

However, each technology start-up is unique, and the importance of IP protection may differ in each case. If the start-up is targeting B2C business development, trademark and design rights might be more important than patents, which are generally more relevant for B2B businesses. The business model also plays a crucial role. To generate revenue from licensing the technologies, hav-

1. John Haltiwanger, *et al*, "High Growth Young Firms: Contribution to Job, Output and Productivity Growth, CARRA Working Paper Series," Working Paper 2017-03, *Center for Economic Studies at the U.S. Census Bureau*, February 2017.

2. "High-Growth Firms and Intellectual Property Rights," European Patent Office and EU Intellectual Property Office, May 2019, *epo.org/high-growth* (accessed 01.04.2020)

3. "4 Reasons to Patent," 4iP Council, *4ipcouncil.com/4smes/4-reasons-patent* (accessed 01.04.2020).

4. Patent Commercialization Scoreboard European SMEs, in Market success for inventions, European Patent Office, 2019, *epo.org/scoreboard-smes* (accessed 01.04.2020).

ing patents can substantially increase negotiation power, while for selling complete products it might be more important to fend off copycats through patents in combination with trademarks. In very fast-moving industries where speed is crucial, such as the software industry, patent protection might be less suitable than in industries with longer technology cycles, such as pharma. Also, if the business relies on technology standards, freedom to operate is key, and a strong patent portfolio could help influence standard-setting. Last but not least, items such as the ambitions and financial situation of the company, any plans for regional or international expansion, and especially any exit scenarios that are foreseen may also have a significant impact on the creation of the optimal intellectual property rights (IPR) portfolio.

What Interest Do Customers of Technology Start-ups Have in Patents?

The freedom-to-operate issue is important for potential customers in the B2B space, as they need some certainty that they will not face indemnity issues *vis-a-vis* third parties. Also, they need certainty that the technology start-up will be able to continue its operations, which is in all cases a big question for young technology start-ups. However, technology start-ups often tend to avoid the issue, especially as a comprehensive prior art search can be time consuming and expensive, while not giving 100 percent certainty.

The current patent and other components of the IPR portfolio of a technology start-up might be of interest to potential customers for a very different, less noble reason: to assess whether they could develop a similar product or service themselves, having all the resources and know-how of an established company, and thereby avoid making themselves dependent on a small technology start-up. Unfortunately, this is not just a hypothetical scenario, although most large companies have come to realize that they are probably too slow for this strategy and would be better served by getting the solution from a fast technology start-up.

Why Should Investors Care about Patents?

From an investor perspective, freedom to operate is important to enable successful growth potential for the company. Beyond that, the start-up's patent and IPR portfolio are also relevant for investors for several reasons:

a. Defensive use: having a potential negotiation position in case of infringement by potential customers or competitors. However, the power of a very small portfolio is usually limited.

b. Offensive use: preventing other companies from offering a similar product or service. This is a more realistic scenario.

c. Negotiation position with customers, partners and standardization efforts.

d. Flexibility to pivot to other business models (*e.g.*, from selling products to licensing technology).

e. Exit value: a strong patent and other IPR portfolio can increase the ultimate sale price of a technology start-up at exit (sale to a large corporation or private equity).

f. As a security asset for the investor: a patent portfolio could generate some financial return if the start-up does not survive, thus somewhat reducing the loss or providing a second chance for a restart in a new setup. See Table 1.

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So, Why and When Should Technology Start-ups Invest Resources in Patents?

The response to this question seems to be rather diverse across the globe. While some technology start-ups in Silicon Valley file patents on a wide range of ideas at the start of their company, of which they will only implement a few in the end (or none at all due to their regular "pivoting"), many European technology start-ups consider patent filing too expensive and distracting from their short-term focus on obtaining paying customers.[5] They also often take the position that they can only decide what to patent once they have sufficient customer feedback—which is generally too late from a patent applica-

Table 1. Summary Of Patent Relevance For Key Stake Holders

	Relevance For Investors	Relevance For Start-Ups	Relevance For Customers
Freedom To Operate	High	High	High
Preventing Imitation	High	High	Low
Negotiation Position	High	High	Low
Standards Contribution	Medium	High	Medium
Increased Reputation	Medium	High	Medium
Collateral For Loans	Low	High	Low
Attractiveness For VCs	Low	High	Low
Security Asset At Insolvency	High	Low	Low
Company Exit Valuation	High	High	Low

5. Costly and time-consuming procedures were the main difficulties reported by SMEs when registering IPRs in the Intellectual Property SME Scoreboard 2019, EU Intellectual Property Office, November 2019, *oami.europa.eu/ohimportal/da/web/observatory/sme-scoreboard* (accessed 10.04.2020).

tion perspective. The situation is often different for spinouts from universities, where first patents have usually already been filed by the university. Here the challenge for start-ups in some countries is to get those patents transferred or licensed (exclusively) to the start-up.[6]

An often complicating factor relates to the rather different time frames between the long-term focus of patent business and running a typical technology start-up with its rapid pivoting.

One option is to indeed file a broad range of high-quality patent applications internationally early on and "clean up" the portfolio once it is clear which technologies have been successfully implemented and accepted by the market. This approach requires rather deep pockets to finance the initial patent generation and application, unusual for European early-stage start-ups. Furthermore, "cleaning up" the portfolio in a profitable way requires either a great network (from the investors) or effective market facilitators.[7]

Another, more prevalent option is to work on a trade secret basis until the solution is somewhat validated in the market, after which more specific patents are filed. Of course, this approach complicates the validation process for investors or customers (as inventive details of the technical solution cannot be shared) and carries considerable risks of either information being leaked or third parties patenting similar inventions before the start-up does.

A third example, observed among several start-ups, is to file a number of provisional patent applications in the U.S.,[8] thereby potentially securing priority for patent applications or utility model filings in Europe, and combine that within the priority year with the EP and or PCT route for internationalization. This can save cost at the beginning and "buy" about 30 months' time for businesses with limited funding, whose technology is still in the development phase. This strategy will secure an early priority date, enabling later improvement of the patent applications, once more insights about the technology and/or market feedback have been received, and potentially additional budget becomes available. It is a kind of cost-delaying strategy that can be combined with cost savings achieved by efficient engagement of patent attorneys and IP renewals service providers.[9]

6. For real examples of how universities can support IP transfer to start-ups and build the foundation for their success, see EPO SME case studies, "Orcan Energy, Recycling Waste Heat to Cool Down the Planet and Lithoz, 3D Printing Opens A New Chapter For Ceramics," European Patent Office, 2017, *epo.org/sme* (accessed 01.04.2020).

7. For more insights see the article in this issue by Bastian July and Ilja Rudyk, "Succeeding with Market Facilitators—How Buyers and Sellers Meet." *les Nouvelles* 55, no. 2 (June): p. 148.

8. For an introduction to the notion of provisional patent applications in the USA, see Gene Quinn, "The Benefits of a Provisional Patent Application," 2017, *ipwatchdog.com/2017/05/13/benefits-provisional-patent-application/* (accessed 09.04.2020).

In this context, a valid question from technology start-ups is whether to focus more on patents or trade secrets to protect their business. The trade secret approach has the advantage of saving time and money and of nothing being published, which often seems attractive to small technology start-ups that could not realistically defend their patent against big corporations. However, from an investor perspective, trade secrets are not as strong and liquid of intangible assets as patents, and are to some extent tied to the founders—who might leave the company.[10]

Once technology start-ups decide to file patent applications, they often start with only one, as this can already cost substantial time and money. However, one patent does not make a portfolio, and without a solid patent portfolio strategy, the ultimate value might be rather limited. It is therefore important to explicitly decide the intent and budget allocated for building a patent portfolio, agreed with among shareholders, which can range from focusing on trade secrets and trademarks to a fully fledged patent portfolio.[11] Most technology start-ups will need external support to develop and implement a sound patent strategy, which can be a big step toward creating real value for the technology start-up and its investors.[12]

How Can Start-ups Protect their IP While Acquiring Investors, Partners and Customers?

Start-ups often face a big dilemma in early engagements with potential investors, partners or customers. They need to provide sufficient information about their technology to demonstrate its unique value, without disclosing important details of their inventions prior to having secured IP protection.

During initial discussions, it is often sufficient to focus on the customer problem the start-up is addressing and what their solution roughly looks like.[13] However, potential investors will soon raise questions on how exactly the solution works and how it differentiates from competition and substitutes. At this stage, start-ups have to be very careful about the level of details they disclose, especially if IP protection has not yet been secured.

9. Ian Johnson, "What makes a good IP renewals provider?," 2016, *ipwatchdog.com/2016/10/23/ip-renewals-provider/id=73600/* (accessed 10.04.2020).

10. For further material about patents and trade secrets, see "IP Teaching Kit," European Patent Office, 2010, *epo.org/learning-events/materials/kit.html* (accessed 01.04.2020).

11. For an example of a strategic approach to patent portfolio development, see Martin A. Bader, "Strategic Management of Patent Portfolios," *les Nouvelles,* 2007, *brainguide.de/upload/publication/40/keuk/1ccb2dfb6036a9e6f3dc0e0ad791e020_1311535413.pdf* (accessed 01.04.2020).

12. For further material on this topic, see "IP Teaching Kit," European Patent Office, 2010, *epo.org/learning-events/materials/kit.html* (accessed 01.04.2020).

13. For more insights, see the article in this issue by Thomas Bereuter, Bastian July and Gene Quinn, "How to Market and License Your Technology." *les Nouvelles* 55, no. 2 (June): p. 152.

The default legal approach is to ask for a Non-Disclosure Agreement (NDA) to be signed by all parties prior to exchange of critical information. However, most investors might not accept this before a true due diligence phase has been reached. It also would be very hard to prove which potential investor has leaked confidential information about an invention, as usually numerous potential investors are being approached before finding the right match.

Furthermore, it should be clearly understood that pitching events and the distribution of (teaser) pitch decks to potential investors are generally not covered by any formal confidentiality agreements and, from a risk management perspective, should be considered as public disclosures.[14]

In summary, start-ups should decide before engaging with investors, partners or customers which explicit parts of the IP are really valuable and cannot be disclosed at all before IP rights have been secured. In concrete assessment stages, like a full due diligence process by a potential investor, IP needs to be protected by a water-tight NDA, which goes along with proper documentation of exchanged confidential information. However, reaching this stage can be difficult if even basics about technical solutions cannot be communicated. Therefore, early investments in IP protection can be crucial for successful fund raising and customer acquisition.

Who Should Convince Technology Start-ups to Invest in a Patent Strategy and IP Portfolio?

Investors provide capital to start-ups based on a clear agreement on the "use of funds," *i.e.*, what the capital will be used for. They can also be key advisers to start-ups, often with seats on the board, and bring in substantial experience in growing a business, deal making and exits—all situations where IPR portfolios often play a key role. Therefore, investors are in the best position to discuss the importance of patents with technology start-ups and convince them to invest time and money in developing a patent strategy and building an IPR portfolio.

An initial discussion between an investor and the start-up about existing patents and patent strategy should take place before the investment is complete, and be part of any due diligence process, which normally takes place under an NDA. The "use of funds" discussion and regular reviews of product, strategy and budget provide good opportunities to align on patent strategy and budget.

However, anecdotal evidence suggests that, in Europe, there is still insufficient awareness and focus on patents among early-stage investors. This is partially due to a focus on software technology start-ups, which can grow fast with little capital, in combination with a general belief that software technology start-ups are not able to patent their technology.[15]

Several studies report that having patents helps start-ups to secure funding, often even faster.[16] However, there are also indications[17] that venture capital investors look for patent portfolios when selecting companies for investment, but then ask these companies to focus on exploiting the existing patents rather than on extending their patent portfolio.

Recommendations for Awareness Raising

As discussed in this article, venture capitalists have an important role to play in respect to patent use by start-ups. Therefore, efforts should be increased to raise the awareness of European venture capitalists on the importance of patents and other IPRs for their portfolio companies, not only to select the most promising start-ups, but also to create long-term value drivers. This could be achieved, for instance, through an increased focus on investors as a target group for IPR conferences, as well as focused IPR sessions during regularly scheduled match-making events for venture capitalists or angel investors and start-ups across Europe. Once investors fully appreciate the value-creation potential of patent portfolios, the companies they invest in will increase their focus on implementing solid IP strategies.

Recommendations for Technology Start-Ups[18]

- Clarify why IPRs are valuable for your business
- Define your strategy for making money from your IPRs
- Determine where in the value chain you are best positioned with your IPRs
- Get your stakeholders aligned for supporting your IP strategy
- Define your budget for your IPR portfolio. ■

Available at Social Science Research Network (SSRN): *https://ssrn.com/abstract=3583013.*

14. It can even become important to document what has been disclosed publicly, to help defend the start-up in case freedom to operate is at risk, as related IP protection might have been achieved by third parties.

15. On the patentability of computer-implemented inventions, see "EPO Guidelines for Examination," *epo.org/law-practice/legal-texts/html/guidelines/e/j.htm* and for a discussion, Giovanni Zelioli, "Securing Software Patents Through the EPO," 11 April 2019, *iam-media.com/securing-software-patents-through-epo* (accessed 01.04.2020).

16. In the specific field of biotech, it was demonstrated that start-ups with at least one patent received their first venture capital investment 76 percent faster, see Carolin Haeussler, Dietmar Harhoff, Elisabeth Mueller, "To Be Financed or Not…–The Role of Patents for Venture Capital Financing," *Center for European Economic Research*, January 2009, *ftp://ftp.zew.de/pub/zew-docs/dp/dp09003.pdf* (accessed 09.04.2020).

17. Henry Lahr and Andrea Mina, "Venture capital and the technological performance of portfolio firms, in Research Policy," Elsevier, February 2016, *sciencedirect.com/science/article/pii/S0048733315001481.*

18. These recommendations were provided by the expert panel on "Making Money from Technology" at the High-growth Technology Business Conference in Dublin, organized in November 2019 by the European Patent Office and Licensing Executives Society International, *epo.org/business-success* (accessed 01.04.2020).