

# Underutilisation of Intellectual Property by Small and Medium-sized Enterprises: An Explanation from The Business Viewpoint

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## 1. Introduction and basic considerations

### *1.1 Three representative groups of firms*

INTELLECTUAL PROPERTY rights are private economic rights, and thus need to be properly managed by their owners. Of course, they can be managed only if intellectual property owners have properly defined business strategies. As there are many definitions of the strategy, we wish first to clarify that a strategy is understood here as “[T]he determination of the long-run goals and objectives of an enterprise, and the adoption of courses of action and the allocation of resources necessary for carrying out these goals.”<sup>1</sup> Most of our discussion is limited to principal objectives only, as indicated by the title of the chapter, although a few words will also be said about possible courses of action.

Strategies can be more or less broad. A firm may have a general strategy that embraces virtually all its activities. It may have a more specific innovation strategy. Freeman and Soete distinguish six typical innovation strategies.<sup>2</sup> And there can be a narrowly defined strategy related only to the intellectual property rights. Our focus here is on this latest strategy.

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1. Chandler, Alfred, *Strategy and Structure*, (The MIT Press, Cambridge, Massachusetts, 1962), as quoted in Grant, Robert M., *Contemporary Strategic Analysis* 15 (Blackwell, Oxford, UK, 1998).
2. Freeman, Chris, Soete, Luc, *The Economics of Industrial Innovation*, Chapter 11 (Pinter, London 1997).

It is almost impossible to offer an exhaustive overview of the vast variety of business objectives that may be applicable in daily business life. Indeed, there may be as many objectives as companies! It is then clear that we need to remain on a more general level of stylised facts. In this sense, we wish to present, in a very schematic and generalized approach, two most generic sets of business objectives related to intellectual property.

The first set relates to the principal business objectives of advanced self-innovating companies, which can be conveniently labelled as 'innovation leaders'. Many large, internationally operating companies belong to this group.

The second set of principal business objectives relates to the group of enterprises that may be called 'innovation followers'. Innovation followers are companies selling self-developed products, but which have been developed with a slight time lag, after the patents of innovation leaders have been already published. Most small and medium-sized enterprises (SMEs) throughout the world and many large companies in developing countries belong to this group.

We wish to show that the business objectives of each group differ significantly from each other. Moreover, the applicability of business objectives suitable for innovation leaders is shown to be actually irrelevant for innovation followers, despite the fact that both offer self-developed products. Nonetheless, the activities required to achieve the desired objectives turn out to be the same in both cases – a claim that *prima facie* seems somewhat contradictory.

Before turning our attention to business objectives as such, it may be useful to expose some basic considerations, i.e., some guidelines common to all business strategies and objectives concerning intellectual property.

## **1.2 Priority and relevance ranking of various intellectual property rights**

First of all, every firm has to assess which category of intellectual property has priority in terms of relevance to its business. For example, patents, industrial designs and trademarks may all be relevant. However, it is most unlikely that all of them will have the same degree of priority. Therefore, it may well be that a higher priority is given to a trademark than to the protection of an industrial design.

Roughly speaking, we can say that the relevance and related rank primarily depend upon the type of market in which a firm operates. Firms selling industrial goods have very specific customers, who are usually well informed about the quality, performance and other essential features of the products. Therefore, although a kind of business identifier, either a mark or a trade name (or both), is necessary in order to achieve market identity, their

impact on buying decisions is relatively modest. In addition, technical characteristics may be highly important in this respect. It is then that patents may play a dominant role in such a market.

In contrast, the choice of the “right” trademark is surely critical in the case of classic consumer goods such as food, drinks, household utilities, etc. It should be recalled in this regard that trademarks serve as the information tool by which the consumers reduce their search costs. The consumer chooses the desired product, and the trademark appeal may well have a decisive impact on his choice. Possible technical performance is of lesser importance; most consumers are not aware of, nor bother about, the technology applied. Clearly, trademarks and possibly industrial designs, and not necessarily patents, are the highest-ranking categories for such goods.

### ***1.3 The need for protection***

Having once established the proper ranking, the next obvious question is how strong is the need to have the relevant protection. Can the costs of protection be saved if protection does not bring much?

Generally speaking, the answer depends upon the degree of the “easiness” of free riding, meaning that predominantly patents are to be considered. Actually, there exists a simple criterion: ‘as long as copying is cheaper than the development of a certain product, protection does matter’. The bigger the difference, the more important protection is. In the pharmaceutical industry, these differences are enormous. Contrary to this, it is a costly affair, for example, to reveal the topography of an integrated circuit. In most cases, the development of another chip with the same functional characteristics as the targeted “model” may well be a less costly affair compared to the complicated and expensive technology of copying. This being the case, then legal protection does not bring any substantial benefit, if any.<sup>3</sup> In other words, the ratio between R&D costs and costs for copying can be taken as a criterion for assessing the need for protection, as well as the optimal scope of it, as shown in the Appendix. This ratio, conveniently termed the “RD/CC ratio,” is then the basis for the following criterion: ‘whenever the RD/CC ratio exceeds the value of one, the need for protection is there. But if this value is close to one or even less than that, then a firm can normally save the money on patent and other similar applications’.

### ***1.4 Patents vs. trade secrets***

The economic literature frequently considers trade secrets as an

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3. Cf. Karnell, Gunnar W. G., “Protection of Layout Designs (Topographies) of Integrated Circuits – R.I.P.?” 6 IIC 648-658 (2001).

alternative to patents.<sup>4</sup> However, in business practice the story is not so simple, and there are some facts that must be considered.

Patents fully disclose the patented subject matter. It is a rule which has its roots in the social contract theory. Moreover, any invention must be disclosed in sufficient detail to allow it to be carried out, as also remarked elsewhere. From this point of view, abstracting for the moment other possible criteria, such as that just discussed above, patent protection makes sense whenever the invention is in any case revealed through the product itself. Clearly then, copying, for example in the form of reverse engineering, is feasible in any case. Therefore, without patent protection, the possibility for free riding is there, and even legally allowed from this point of view.

At the other extreme, there may be some inventions, especially in the form of a technological process, which allow novel, presumably more efficient production of the product which, however, is well defined and known. Now, if the new process cannot be recognized through the product, then it makes sense to keep such information secret. Even worse, a patent could be detrimental, as everyone would have the opportunity to learn and adopt the new process, whereas the patentee would face enormous difficulties in proving infringement. After all, all competitors can simply claim that they are continuing to use known technology. These difficulties are somehow softened in patent law whenever new products are directly obtained by that process, because the patent protection extends to such products as well.<sup>5</sup> In addition, the burden of proof is on the alleged infringer of such a patent.<sup>6</sup> These provisions, however, obviously do not apply to products which are not new.

We can thus see that patents and trade secrets are not really alternatives to each other in the sense that the choice between them is free. But they are alternatives in the sense of mutual exclusivity. The factor that is decisive when deciding which of the two forms to apply is the nature of the product, i.e., whether or not the invention is revealed by it.

The basic message is, therefore, the following: 'patents make sense whenever an invention is unavoidably revealed through the sales of related products. Then the control of possible infringement is feasible by observing competitors' products. However, if an invention is not revealed through products themselves, then a trade secret may be the recommended option'.

Having clarified these basic considerations, we may proceed to the core issue of business objectives.

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4. Cf. Scherer, Frederick M., Ross, David, *Industrial Market Structure and Economic Performance* 626 (Houghton Mifflin Company, Boston, 1990). Also Granstrand, Ove, *The Economics and Management of Intellectual Property* 85 (Edward Elgar, Cheltenham, UK, 1999).

5. Cf. Art. 28.1(b) of the TRIPS Agreement.

6. Art. 34 of the TRIPS Agreement.

## 2. The principal business objective for innovation leaders

### 2.1 *Fundamental legal effect as traditional strategic business objective*

The fundamental legal effect of intellectual property rights is the well-known negative nature of these rights, i.e., the right to prevent any unauthorized use of the protected subject matter. Cornish describes the negative nature in the following way:<sup>7</sup>

One characteristic shared by all types of intellectual property to date is that the rights granted are essentially negative: they are rights to stop others doing certain things – rights in other words to stop pirates, counterfeiters, imitators and even in some cases third parties who have independently reached the same ideas, from exploiting them without the licence of the rightowner.

It is then a plausible fact that the principal business objective with respect to industrial property rights is simply equated with the fundamental legal nature of intellectual property. The principal business objective of intellectual property rights aims at prevention of any unauthorized use by third parties.

As far as patents are concerned, we can easily recognize the above objective as compatible with the traditional, monopoly doctrine. Only the owner exploits the fruits of his or her own technical creativity. Granstrand takes a very similar position. In summarizing a number of advantages which patents offer to a company or an individual inventor, he says that the advantages are:<sup>8</sup>

1. To block competitors
2. To improve one's bargaining position
3. To stimulate and monitor R&D

Although these objectives are self-explanatory and consistent with the law, a closer look reveals two implicit, but nevertheless important conditions, which must be met if the objective is to be pursued.

The first condition concerns costs. In order to exercise control over potential competitors whether they potentially infringe an intellectual property right, an appropriate capability is necessary. This capability, in turn, requires both money and highly skilled advisers, an expense which is far from negligible, especially in a globalized world, which calls for protection of intellectual property across numerous countries. And the more a firm believes that an infringement is likely, the more expensive its relevant infrastructure will be. In other words, not everyone can afford to control the

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7. Cf. Cornish, William R., *Intellectual Property: Patents, Copyright, Trade Marks and Allied Rights* 5 (Sweet & Maxwell, London, 1999).

8. Granstrand, Ove, *supra* note 4, at 78.

whole market, at least not efficiently. In most cases, only large firms may pursue the above objective on a continuous basis.

Secondly, patented inventions – or any other category of intellectual property for that matter – must be of such a competitive value that there is a ‘serious threat of infringement, i.e., that there is some “demand” for unauthorized use’. Such a demand is implicitly assumed in the mainstream doctrine of patents as monopolies. A monopoly profit is always an incentive to take away a piece of the cake that the monopolist is enjoying for itself. Consequently, if there is a high probability of infringement, then patents and their strict control in respect of infringement make sense.

### ***2.2 Limited applicability of traditional strategic business objective***

However, under prevailing realistic circumstances, an intentional “demand for unauthorised use” as a rule is seriously questioned. If most ‘incumbent’ competitors carry out their own R&D, they surely use the information available in competitors’ published patents. Yet the basic aim of such firms is primarily not to copy but to develop their own, to some extent technically different inventions, which ought to be the basis for an appropriate level of competitiveness. Consequently, the intention to use and infringe someone else’s patents in manufacturing is not necessarily the prime objective, or at least not the regular practice.

In other words, efforts are normally made to make different, possibly even more innovative products. Consequently, the “desire to infringe” can be assumed to exist only in relatively rare situations, when truly path-breaking inventions are generated by innovation leaders.

Despite the low probability of infringement, new entrants should be anyway monitored by all incumbents. The incumbent firms must be able to establish whether any firm entering the competition is a ‘negative free rider’<sup>9</sup>, i.e., a patent infringer. But the number of new entrants may be small and the number of negative free riders even smaller.

Taken all together, it is clear that the principal business objective, based on the negative legal nature of intellectual property, is primarily appropriate only to innovation leaders. Given the financial burden linked to its implementation, the large companies enjoy a more favourable position in this respect. For small, newly created innovation path breakers, sources of this type must be somehow made available for the initial growth period, until such companies have reached the appropriate size.

Having said this, we have to recognize an important fact. The vast majority of industrial firms in most national economies, whether highly

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9. We speak about “negative free riding,” in order to make a distinction from “positive free riding,” i.e., when there is no infringement of IP (and other) rights. Generic pharmaceutical industry may be mentioned as an illustration for positive free riding.

developed or developing, are neither large nor innovation leaders, at least not on a permanent basis. Therefore, we need to devote most of our attention to the SMEs, which have been recognized as being the main source of innovation.<sup>10</sup> This fact is actually not so surprising, because in virtually all countries SMEs account for an overwhelming share of the overall economy by virtue of their number, having a high share in employment, exports, and value added to the economy,<sup>11</sup> regardless of the differences in their definition.<sup>12</sup>

### **3. The principal business objective for SMEs as innovation followers**

#### ***3.1 The irrelevance of traditional business objective***

How can SMEs pursue the above presented principal business objective of intellectual property, based on the negative nature of intellectual property rights? Without much elaboration, we can confidently claim that for most SMEs, and for many large companies as well, especially for those in developing countries, the principal business objective of intellectual property for their innovations is simply too costly, and thus unaffordable. In other words, SMEs cannot meet the first condition required for a business strategy based on the aim to monitor competitors and prevent them from unauthorized use. Therefore, SMEs generally do not have appropriate financial and professional skills to pursue the principal objective of intellectual property to prevent unauthorized use by third parties.

The only exception, as remarked above, is innovation leaders. However, it is at the same time clear that the majority of industrial firms, whether small or large, are innovation followers. Innovation followers do innovate, but only occasionally hit the jackpot in the form of a major, path breaking innovation. However, the normal state of affairs is that they innovate along the general trend of innovation within a given industry, and thus maintain their competitiveness on a long-term basis. They have their self-developed products, but these are a variation on a theme, as musicians would say.

This business pattern is of direct relevance to the second condition related to the fundamental objective. If most firms possess their own inventions, which are more or less equally competitive, then the desire to infringe is virtually non-existent. It then follows that the probability of a

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10. Cf. Acs, Zoltan J., Audretsch, David B., *Innovation and Small Firms*, (The MIT Press, Cambridge, Massachusetts, 1990). Also Acs, Zoltan J., Yeung, Bernhard (eds.), *Small and Medium-Sized Enterprises in the Global Economy* (The University of Michigan Press, Ann Arbor, 1999).

11. Cf. Da Costa, Eduardo, *Global E-Commerce Strategies for Small Businesses*, Chapter 1, especially p. 4 (The MIT Press, Cambridge, Massachusetts, 2001).

12. *Ibid.*

“high demand” for unauthorized use of intellectual property rights of innovation followers is small, or even negligible.

On this basis, we can easily recognize the following, and to a large extent astonishing, implication:

The principal business objective of intellectual property, i.e., prevention of unauthorized use, is not particularly relevant to innovation followers, nor are they normally financially and professionally capable of pursuing it. As innovation followers represent the major part of the industrial sector throughout the world, the applicability of the principal business objective is limited to a very narrow circle of innovation leaders.

This is a paradoxical observation indeed. It contradicts almost everything that is nowadays said about the sheer importance of intellectual property.

Moreover, the evidence seems to support the paradox. While the lack of patents, trademarks, etc., with firms in developing countries has many plausible explanations, it nevertheless holds, perhaps surprisingly, in many parts of the advanced world as well. For example, the European Patent Office (EPO), one of the three largest patent offices in the world, has noted the fact that the share of patents filed by European SMEs is disproportionately low, given their share in the economies of the EPO member States. This led the Office to commission a special survey on the utilization of patent protection in Europe.<sup>13</sup> Of course, the high costs of patent protection have been identified as one of the major reasons for the low utilization of European patents. It is well known that European patents are very expensive in comparison with, say, U.S. or Japanese patents, because they are burdened with the so-called “translation costs,” absent elsewhere. Various attempts and proposals have recently been made to solve the problem. Nevertheless, the limited financial and professional resources of SMEs normally do not suffice anyway. Therefore, the problem in Europe is just more severe than elsewhere, and it would certainly be welcomed if this were to be addressed also by WIPO within the Patent Cooperation Treaty (PCT), rather than left solely to the EPO and its member States. There is at least one suggestion concerning the reduction of the high translation costs of European patents, which claims to be applicable also to the PCT.<sup>14</sup>

Unfortunately, the cost issue is not the only explanation for the low utilization of patents by SMEs, or other innovation followers. Let us

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13. European Patent Office, “Utilisation of Patent Protection in Europe,” 3 Eposcript, Munich 1994.

14. Pretnar, Bojan, “How to Reduce High Costs of European Patents” 12 EIPR 665-668 [1996].



suppose that the problem of costs is somehow solved. Even then the fundamental fact of almost negligible probability for infringement still holds, as the intent to infringe patents by innovation followers is *a priori* low. Consequently, the interest and motivation for obtaining patent protection is inevitably low as well. In other words, there is a more substantial reason why SMEs may consider patents as an asset of little value, if any.

It seems that managers in SMEs mostly reason more or less in the following way: it is very unlikely that our patents would be sufficiently attractive to be infringed. Therefore, it makes no sense to spend money on obtaining patents. Even if we get a patent, we have no money and skills to monitor all the competitors to find out if they have perhaps infringed our patent, let alone to start exorbitantly expensive litigation in case of infringement. But if we cannot afford this monitoring, then again it makes no sense to spend money on patent protection, as the patent itself, without being permanently controlled, is just a piece of useless paper, the price of which cannot be justified by any means.

One has to admit that this reasoning makes sense. But does that mean that intellectual property is important to only the chosen few, i.e., to innovation leaders? Is then all the talk about the sheer importance of intellectual property simply an unwarranted exaggeration?

### ***3.2 Avoidance of risk of infringement as strategic business objective***

Taken all together, we are obviously confronted with the fact that the mentioned paradox is a far-reaching phenomenon. There are good reasons to believe that intellectual property is the vital part in all segments of the knowledge economy, which by virtue of globalization affects the whole world. *On the other hand, the principal business objective of intellectual property, though unmistakably private business rights, is applicable and affordable only for a very, very small number of large advanced companies. Surely, as these firms are innovation leaders, their economic impact should not be underestimated, but this fact does not change the basic message that the major part of the industrial sector throughout the world, and for a number of reasons, cannot rely on intellectual property as a competitive tool in daily business.*

How can this paradox be resolved? We can start the search for a solution by posing the following question: 'is there any other business objective, different from the principal objective to prevent unauthorized use, which is both applicable and affordable for innovation followers, i.e., for the vast majority of SMEs?'

The question may be also put somehow differently in the following way: 'given the fact that the desire for infringement of inventions developed by innovation followers is almost nonexistent, is there any other risk that innovation followers may face in respect of intellectual property?'

The answer is in the affirmative for two reasons. First, innovation leaders do pursue the strategy implied by the fundamental objective. Therefore, it may happen that an innovation follower is accused of patent (or trademark, etc.) infringement. This risk is actually not negligible, because – and this is the second reason – innovation followers by definition follow the leaders: “*Regardless of the fact that the imitators are not slavishly copying the products which are already offered on the markets in developed countries, the risk of adoption of technical solutions covered by patent rights is greater than in case of a completely independent R&D, precisely due to the imitative approach, which is based on mainly adaptive R&D.*”<sup>15</sup>

On this basis, we can make the following proposition:

The principal business objective of intellectual property for innovation followers is to avoid, or at least to reasonably diminish, the risk of infringement of intellectual property rights owned by innovation leaders.

Next, we have to explain how this objective can be pursued. Are there similar implicit conditions as is the case with the fundamental business objective?

The classic answer to the question how companies, including of course innovation followers, can diminish the risk of patent infringement, is well known.<sup>16</sup> The companies should simply carefully follow the relevant patent literature, either classified according to the relevant technical field or sampled according to applicants who are potential competitors. After all, the full disclosure of patented inventions is intended to serve this, and some other, purposes.

Unfortunately, this may not work as far as SMEs are concerned. Patents are documents of both a technical and legal nature, and special professional skills are needed for a proper legal interpretation of their contents. And it is the legal interpretation of the scope of protection that matters in respect of the desired objective. SMEs, and also many larger innovation followers, do not have in-house patent attorneys at their disposal, and outside advice on a permanent basis would probably be too expensive in most cases.

Therefore, other ways should be chosen. In looking for such other ways, we will help ourselves by the method applied throughout in this study, namely by looking at the basic principles of patent law.

Any invention for which a patent is granted must be novel to the world. The novelty examination is one of the most demanding tasks of any patent

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15. Pretnar, Bojan, “Patent Applications as an Information Source for Managing Exports in Less-Developed Countries,” 12 *World Patent Information* 218 (No. 4, 1990).

16. *Ibid.*

office, and only some of the largest offices can perform it with a sufficient degree of reliability. Some of those offices are also selected for the purpose of the novelty search and the examination of international patent applications, as in the case of applications filed under WIPO's PCT system. Therefore, it is then possible for any patent application to obtain, within a reasonable period, a preliminary search report or preliminary examination report.<sup>17</sup>

Such reports give a fairly clear picture of whether or not an invention is new. If it is not new, then the report must specify what is known as prior art – the evidence that the invention described in the invention has already been disclosed elsewhere. It is a standard practice that the documents cited in the search report are earlier related patents.

But this is precisely the information that is needed to assess the risk of possible infringement! Bearing this in mind, the following suggestion is at hand:

The risk of infringement for a certain self-developed invention can be best assessed if the patent application is filed and examined in respect of novelty.

In other words, it is suggested that any innovation follower who wishes to diminish the risk of being caught as an infringer should file patent applications for self-developed inventions. Let us now explore some managerial possibilities in this respect.

First, let us suppose that a patent is granted. Then the product can be put on market with a lot of confidence. Of course, even a granted patent is not a watertight proof of non-infringement, but surely the patent holder is then safer, and goes on the market in good faith. This is an important point if an allegation of patent infringement by a third party is raised against the patent owner. It is worth recalling some provisions of the TRIPS Agreement in this respect. It has already been mentioned once elsewhere in this study that the enforcement procedures “*shall be applied in such a manner as to avoid the creation of barriers to legitimate trade and to provide safeguards against their abuse.*”<sup>18</sup>

But, what if the patent is not granted? Having the relevant information about patents that possibly may be infringed, a number of business decisions may be considered and assessed by the innovation follower who wants to enter the market with his product. The following decisions can be readily recognized as being of the utmost relevance:

(i) first and foremost, the cited documents in the novelty search report have to be checked as to their legal validity. A patent may

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17. For a brief description of the PCT, see, WIPO Intellectual Property Handbook 277-286.

18. Art. 41.1 of the TRIPS Agreement.

be part of the prior art, but this fact is not related to the issue of whether or not a patent is in force. However, if there is such a disturbing patent which is also in force, then the next possibility to be studied is:

(ii) can the product or process be changed, so that infringement can be avoided? Sometimes this measure is too costly, and other alternatives need to be explored, such as:

(iii) a change in the market. It should be recalled that intellectual property rights are territorial rights. Even if this measure is not feasible for some reason, then:

(iv) the acquisition of a patent license may be an option. Finally, if this is not likely to work,

(v) an attempt to revoke the disturbing patent may be considered.

An important point in this regard is that all the above business options may be recognized and studied at a relatively early stage of production and sales, which is obviously an enormous practical advantage. Secondly, the required professional assistance of a patent attorney is limited to a reasonable scope, and thus the costs should normally not reach unaffordable heights.

It is furthermore important to note that the same philosophy can be applied *mutatis mutandis* also to other categories of intellectual property, such as trademarks and industrial designs.

#### 4. Conclusion

The discussion above has shown that SMEs, being predominantly innovation followers, can pursue their main business objective, which is entirely different from the fundamental one, in the same way as innovation leaders, i.e., by filing patent (and, *mutatis mutandis*, other) applications. Of course, innovation followers do not need to file as many applications as the leaders, both in their number and in respect of geographical spread; what they need, however, is at least one solid novelty examination. In this regard, the PCT is an ideal mechanism to this end. In any case, however, it is clear that the crucial difference between innovation leaders and followers is in the business interpretation of patents, or trademarks and industrial designs, as the main business objective is the same for these latter rights.