

# Increasing Profits by Strategic Patenting

## —A Change of Perspective from Bottom-Up to Top-Down

Oliver Baldus<sup>1\*</sup>, Christian Heckmann<sup>2</sup>

<sup>1</sup>Schwarz and Baldus LLP, Munich, Germany

<sup>2</sup>Hertie School of Governance, Berlin, Germany

Email: \*baldus@sb-ip.de, c.heckmann@mpp.hertie-school.org

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### Abstract

Classical patenting is driven by what one might consider an “internal” view of the firm, in which patents are primarily obtained for protecting self-made inventions based on one’s own research activities. This corresponds to a bottom-up approach where patents originate from the bottom of research and development activities. Sometimes and occasionally these patents can be used in upper business and management layers for actually generating profits. In contrast, strategic patenting is driven by an “external” view of the firm. This external view is not primarily focused on the protection of internal inventions simply for the sake of staking one’s claim vis-à-vis a de facto non-existent conflict party. Instead, it is directed at a particular external “target”, *i.e.* a firm or group of firms such as competitors, suppliers or demanders. This corresponds to an opposite top-down approach in which top business decisions primarily determine which patents matter. As a direct consequence these patents guide research and development activities at down layers. The basic concept behind strategic patenting is a coordinated improvement of a firm’s comparative IP right (Intellectual Property Right) situation vis-à-vis this target. The desired result of strategic patenting is a purposive “hit on target” as compared to the scattered, uncoordinated approach of classical patenting that hits targets rather randomly. Since all patenting activities of the firm are intentionally targeted against specific firms determined in a top management decision, strategic patenting is more efficient than classical patenting.

### Keywords

IP Strategy, IP Management, Strategic Patenting, Increasing Profits by Strategic Patenting

## 1. Introduction

Classical patenting is driven by what one might consider an “internal” view of the firm,

in which patents are primarily obtained for protecting self-made inventions based on one's own research activities.

To this extent, many patents protect innovations that have no real market exposure, *i.e.* that are not really used by third parties. This classic approach to patenting often leads to a number of more or less uncoordinated and scattered patents that are not oriented toward any particular competitor or other third party as a target, but are rather geared solely toward protecting internal inventions. In the absence of a party wishing to use these protected technologies, this classic approach must be considered inefficient. No license fees can be levied, and there are no infringements that could lead to other financial settlements or advantageous outcomes, *e.g.* temporary injunctions. This corresponds to a bottom-up approach where patents originate from the bottom of research and development activities. Sometimes and occasionally these patents can be used in upper business layers for generating profits.

In contrast, strategic patenting is driven by an “external” view of the firm. This external view is not primarily focused on the protection of internal inventions simply for the sake of staking one's claim *vis-à-vis* a *de facto* non-existent conflict party. Instead, it is directed at a particular external “target”, *i.e.* a firm or group of firms such as competitors, suppliers or demanders. The basic concept behind strategic patenting is a coordinated improvement of a firm's comparative Intellectual Property Right (IP right) situation *vis-à-vis* this target. The desired result of strategic patenting is a purposive “hit on target” as compared to the scattered, uncoordinated approach of classical patenting that hits targets rather randomly. Since all patenting activities of the firm are intentionally targeted against specific firms, strategic patenting is more efficient than classical patenting. This corresponds to an opposite top-down approach in which top business decisions primarily determine which patents matter. As a direct consequence these patents guide research and development activities at down layers.

The notion of “hitting a target” is derived from the fact that a patent-holder may exclude third parties from using technologies protected under his patent. To this end, technologies that concern a firm's area of operations are sensitive to outside patent-holders. Hitting a target thus means enforcing or threatening to enforce one's right to exclude a third party from using the protected technology, thereby damaging—perhaps even crippling—their area of operations. Unlike classical patenting, the logic of strategic patenting is therefore only tangentially concerned with licensing fees, but focuses much more on the patent-holders right to include third parties from using technologies that are important for their operations.

Unless other patent valuation approaches like cash flow valuation [1] [2], technology based valuation [3], portfolio valuation [4] or cost based valuation [5], the basic idea behind strategic patenting is that a commercial value can be contributed to patents only if they have the potential to actually hit a target, *e.g.* a competitor. Like the value of goods is determined by an interaction between a seller and a buyer, the concept in strategic patenting is to determine the value of IP-rights on the basis of an interaction of a patent owner and a patent infringer. In consequence patents without infringing third

parties do not cause commercial benefits and have to be considered as worthless. In the discussed top-down approach of strategic patenting patents are tailored down from the top of basic management decisions with respect to a particular target to be hit by these management decisions. In this way the impact and benefit of patenting activities can be increased drastically.

## 2. Main Components of Strategic Patenting

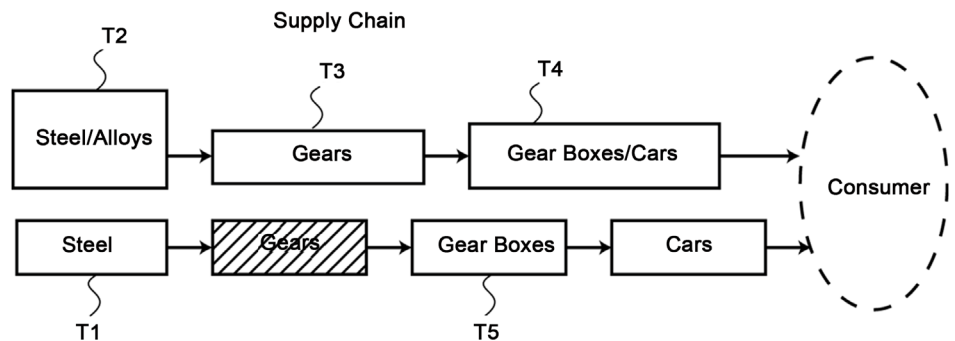
Strategic patenting involves four steps and is one of several measures for realizing and supporting a holistic and effective business strategy. The business strategy has to be thoroughly defined by corporate management and can be elaborated on the basis of a SWOT analysis. Examples of such overarching business strategies include, for example, mergers and acquisitions, lowering of supply costs, increasing price of products, increased earnings through license fees, mitigating hold-up problems arising from incomplete contracts, etc. Strategic patenting can support and contribute to any of the aforementioned business strategies and is a highly useful and flexible management tool.

### 2.1. Selection of the Target

The first step in implementing strategic patenting is the identification of a target on the basis of the previously defined business strategy. In this context virtually all firms are embedded in an economic environment that can be visualized as a supply chain. Supply chains graphs can help in identify a suitable target.

**Figure 1** shows a simplified supply chain starting with raw materials (steel) on the left hand and ending with a manufactured product (cars) on the right hand. Rectangles represent different companies. The delivery of goods from one company to the next is indicated by arrows. Accordingly, production starts on the left and ends on the right side. The shaded gear producer represents the firm that intends to implement strategic patenting.

All targets in strategic patenting are chosen in accordance with a previously defined business strategy. If the business strategy is lowering procurement costs, company T1 can be envisaged as a viable target by our shaded gear producer. When the business strategy is expanding the number of suppliers, company T2 can be targeted additional-



**Figure 1.** Shows a virtual supply chain around a shaded gear producer.

ly. If the business strategy is merging with a competitor, company T3 can be considered as a target. If the business strategy is expanding the number of customers purchasing one's own products, then company T4 is a target. When the business strategy is increasing the prices of one's products, company T5 can be a target. These examples illustrate how versatile strategic patenting is, and indeed there are many more strategies that could potentially be supported by this approach, provided that a suitable target can be identified.

## 2.2. Determining the Firm's Actual Position Concerning the Target

After identifying a target, the second step to strategic patenting is determining the "IP strength" of the firm with respect to the chosen target. The IP strength is derived by analyzing the potential to hit the target by utilizing one's IP rights, e.g. patents. The actual IP strength of the firm is thus determined on the basis of existing patents. To this end, patent portfolios are analyzed in detail in order to quantify the potential impact of one's patents with respect to the target. Although the overall number of patents of the firm can be high, the actual impact to a particular target can be very low. A portfolio's quality, as measured by its specificity and technological relevance, is thus much more important than the sheer quantity of patents it contains.

Borrowing from our example above, our gear producer's IP strength with respect to a direct competitor also producing gears, *i.e.* company T3, is often high. In contrast, the IP strength with respect to a supplier or purchaser would likely be low since companies T1 and T5 operate in different technological fields and existing IP rights were likely based on internal inventions pursuant to the classical internal view of patenting. Patents impacting key products or production methods of the target contribute to the IP strength in greater manner than patents protecting only minor technical improvements. Only patents that are directly relevant to a target's operations contribute to a firm's IP strength. Patents that do not affect the target's operations are not taken into consideration when deriving the IP strength with respect to that target. The output of this initial portfolio analysis is a numerical approximation that quantitatively indicates the potential impact of one's IP rights on a target.

To be sure, determining a firm's IP strength with respect to a target is not enough for determining the firm's actual position in the relationship. A second coordinate must additionally be derived, indicating the converse IP strength of the target with respect to one's own firm. These two values, *i.e.* the firm's IP strength opposite the target and the target's IP strength opposite the firm, uniquely determine the actual IP strength "position" concerning the target. This overall position of strategic value and can be mapped in the 4W-matrix.

The 4W-matrix, as shown in **Figure 2**, is a strategic patenting tool that helps to distinguish different segments in dependence on the "relative IP strength" (RIS) that is given by the IP strength of the firm divided by the IP strength of the target. Thus, the RIS value is a key ratio that serves to identify the overall IP rights situation of a firm vis-à-vis its target, with  $RIS = 1$  being the equilibrium [6]. To be clear, a firm's relative

IP strength depends on target selection. A firm may have a very strong position vis-à-vis, say, a supplier, but a comparatively weak one vis-à-vis a competitor.

In the Wastelands segment, the relative IP strength RIS is not clearly defined, since a IP potential for hitting the target and the target’s IP potential for hitting the firm is indeterminate. This situation often occurs in non-technical business segments, in which IP rights are not provided. However, this situation also frequently arises between suppliers and purchasers that operate in different technological areas. Returning to our example, the gear manufacturer might not have patents for processing steel and the steel producer, *i.e.* target T1 or T2, likely has no patents for manufacturing gears. In this case the IP potential for mutually hitting the other is zero and the relative IP strength RIS cannot be reasonably defined. In the Wastelands segment the relation of the two companies is thus not influenced by IP rights.

In the Weaknesses segment, the hitting potential of the gear producer is much weaker than the potential of his target. This situation can arise, for instance, in startups or new firms entering the market. These companies regularly possess only small patent portfolios and are confronted with large and dominating competitors. In such cases the relative IP strength RIS is close to zero. Imagine, for example, a new manufacturer of gears enters the market and faces a long-established manufacturer of gears like target T3. In this situation the firm’s patents cannot be enforced due to the danger of provoking a massive IP counterattack by the target. Moreover, this situation is intrinsically dangerous, since an attack by the target can never be ruled out.

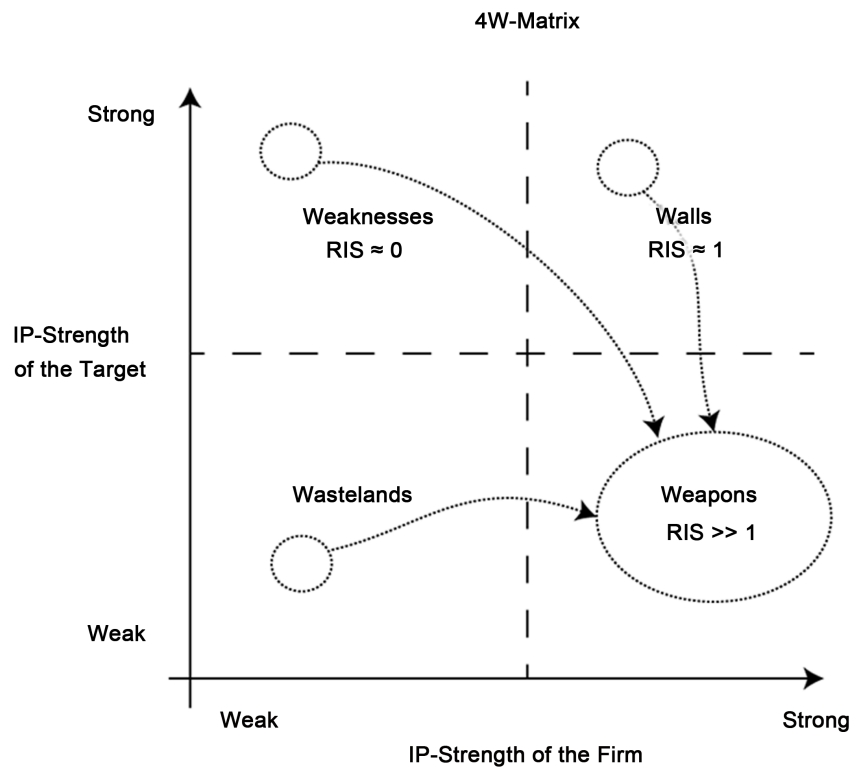


Figure 2. Shows the 4W-matrix for identifying a position of strategic value.

Due to such a de facto impossibility of enforcing own patents, the firm's portfolio cannot be used in supporting business strategies. Since IP rights of the firm cannot be efficiently exerted, the firm's intellectual property situation vis-à-vis its target is weak.

In the Walls segment, the hitting potential of the firm and the target are more or less equal. Consequently, the relative IP strength RIS is close to one and an IP right equilibrium exists. This situation often occurs between two well established companies that both have a high potential for hitting each other with their respective IP rights. For example, our gear manufacturer may have a number patents for hitting his competitor, target T3, and said competitor T3 may have a number of such patents as well.

In practice, this is a very common situation between competing companies. The situation in the Walls segment is very stable. Game theory shows that as long as companies reside in the Walls segment, mutual tolerance and cooperation is the most efficient strategy [7]. This means that in practice the gear manufacturer tolerates the infringement of his patents by the target and vice versa. Indeed, this practice is often formalized via by cross-licensing agreements. It is useful insofar as any unilateral enforcement of IP rights would provoke retaliation and ultimately harm both companies. In this sense, IP rights act as walls of deterrence, preventing an external attack.

Finally, Weapons segment foresees the hitting potential of the firm being much greater than the target's potential for hitting the firm. Consequently, the firm does not have to fear a counter-attack by the target when deciding to enforce its IP rights in order to exert pressure on the target. It is this Weapons situation in particular that patents can act as catalysts for a firm's business strategy by acting as a leverage point against the target. In threatening enforcement of one's patents—with grave implications for the target's operations—the target is coerced into compliance. To this end, IP rights act as mighty weapons for efficiently enabling businesses to successfully implement their strategy. In practice, patent assertion entities PAE as well as non-practicing entities NPE typically reside in this segment.

Strategic patenting is thus chiefly concerned with moving a firm into the Weapons segment in order to force its chosen target to comply with the previously defined business strategy. The Weapons position is by far the most promising position in terms of utilizing IP rights for realizing and supporting a selected business strategy.

### 2.3. Approaching the Weapons Segment

In classical patenting, the Weapons segment is reached rather inadvertently, *i.e.* when a competitor happens to infringe upon a number of key patents that are based on one's own research and development activities. Internal research activities typically do not directly cover the business operations of, say, a supplier or a purchaser. Therefore, classical patenting in many cases does not allow targeting suppliers and purchasers.

In contrast, strategic patenting is focused on rapidly obtaining IP rights that are directly relevant to a particular target's operations. After obtaining such rights, a target's operations would constitute infringement. Thus, the third step strategic patenting is reaching the Weapons segment in the 4W-Matrix. Strategic patenting aims to delibe-

rately tailor patent portfolios toward a selected target or group of targets. Inventions that do not hit the target are disregarded. By taking this deliberate, strategic approach to patenting, scattering losses are prevented and efficiency is increased.

One way to obtain these strategic IP rights is to patent internal developments of one's own products that are likely to be used by the target. However, a more efficient way for reaching the Weapons segment is to protect not one's own developments, but rather to protect developments made by the target firm. In this view, a firm's research activities should directly focus on the products of the target in order to try and obtain IP rights for any improvement of these products. In this way, the chance is drastically increased that the target has to actually rely on these patents, thereby becoming dependent. For example, the gear producer envisaging the steel producer T1 as his target can undertake research activities aimed at directly improving the production of steel. If the gear box producer T5 is a target the gear producer can directly try to technically improve the gear boxes as produced by target T5. Yet another way a further way to achieve the Weapons segment is simply purchasing patents. If the steel producer T1 is a target, the firm can attempt to purchase patents held by steel producer T2 that are currently in use, *i.e.* are being infringed upon, by the target T1. No matter which measure or combination of measures is chosen, the desired outcome is an improvement in relative IP strength RIS vis-à-vis the selected target.

In attempting to reach the Weapons segment, it has to be borne in mind that the envisaged target can neutralize these efforts by also increasing IP strength with respect to the firm. To avoid this, all activities geared at reaching the Weapons segment should be as secret, fast and coordinated as possible.

The difficulty of reaching the Weapons segment depends firm's position in the 4W matrix. If, for example, the target has no patents affecting the firm, the Weapons segment can be easily reached by obtaining a small number of patents capable of hitting the target. If, in contrast, the target has a comparatively large number of patents affecting the firm, reaching the Weapons segment becomes more resource intensive. Typically, direct competitors tend to have equal IP strengths based on a large number of patents and reaching the Weapons segment would be difficult for both companies. At the very least, however, neither company is particularly vulnerable to an IP-based attack such as infringement suits or temporary injunctions against production. In contrast, a firm's suppliers and purchasers often do not have any patents affecting the firm. Because of this, it is relatively easy for the firm to reach the Weapons segment if these companies are to be envisaged as targets. Therefore, suppliers and purchasers are often viable targets for strategic patenting.

#### **2.4. Implementing Business Strategies**

Once the Weapons segment has been reached, a firm's IP rights may be used in a fourth step to force the target into compliance with one's business strategy—whatever it may be—due to the threat of exerting own IP rights. Hence, in addition to perhaps yielding revenue through license fees, IP rights may also serve as leverage for gaining compliance from third parties and implementing business strategy.

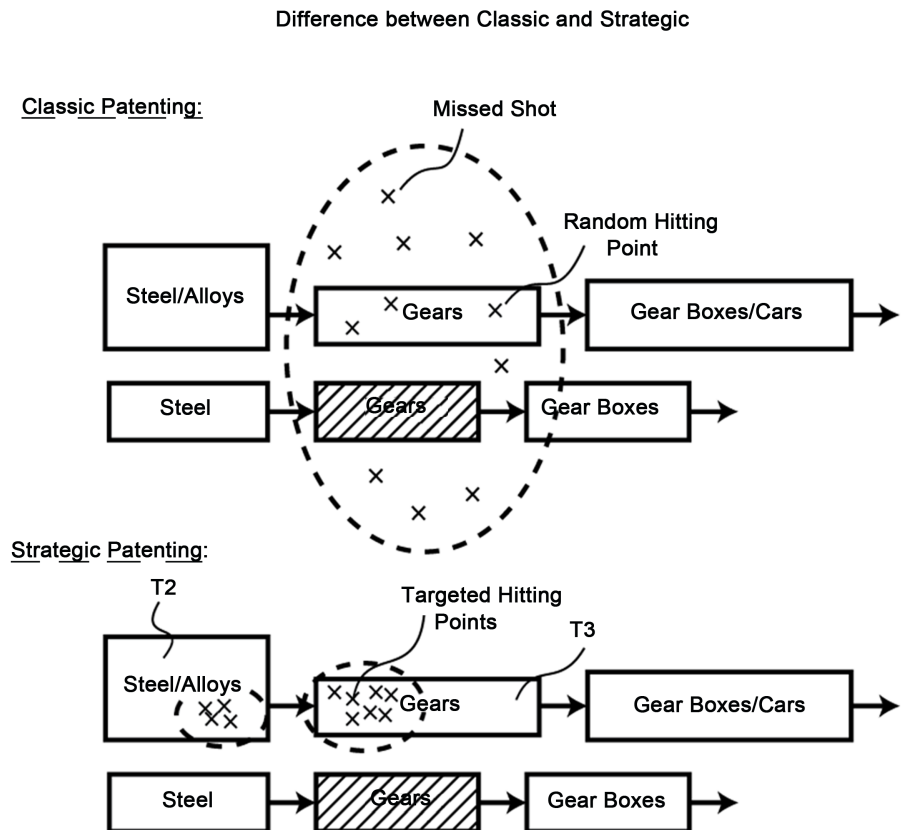
The following sample scenarios could be derived from our example:

- Target T1 could be coerced into selling his steel to our gear producer at more favorable prices than to a competitor T3 who is not located in a Weapons situation vis-à-vis T1.
- Alternatively, target T2 could be forced to offer steel products not only to company T3 but also to our firm.
- Target T3 could be pushed out of the market.
- Target T4 can be forced to purchase products not only from company T3 but also from our gear box manufacturer.
- Target T5 could be forced to pay higher prices for gears. Even hold-up problems as caused by incomplete contracts can be mitigated or rebalanced within the Weapons segment.

However, in general a strong IP right position with respect to a particular target can be used to implement and support various business strategy and management decisions.

### 3. Summary

**Figure 3** visually illustrates the difference between classic and strategic patenting. In classic patenting the idea is to protect inventions on own business. Patents are ran-



**Figure 3.** Shows the difference between classic and strategic patenting.



domly scattered and competitors are hit when they incidentally have to use the protected technology. However, many IP rights are missed shots protecting technology not used by the market. In contrast, strategic patenting aims at directly hitting a target and focusing all patenting activities to a particular target. Scattering losses are reduced and the number of hitting points is reduced helping. Thereby the efficiency of patenting is drastically increased.

Strategic patenting is a powerful tool for implementing business strategies and increasing profits. While the classical approach to patenting based on an internal view of the firm seeks to protect all sorts of developments, strategic patenting is based on an external view of the firm. This means considering a firm's economic environment in order to then protect only such developments that may be monetized. Strategic patenting is specifically concerned with monetization of potentials that are not only based on licensing. To this end, it foresees the strategic acquisition of only such patents that are highly relevant for a third party's operations. These patents are then used to exert pressure on the third party and gain compliance in accordance with a previously specified business strategy, e.g. weakening a competitor or reducing procurement costs.

After defining a business strategy that is amenable to strategic patenting, a target firm is selected based on this strategy. Common targets include competing firms as well as suppliers. Subsequently, the firm's patent portfolio is thoroughly analyzed in order to determine its potential for exerting pressure on the target via (threatened) enforcement of the IP rights. This potential is compared to the targets potential for hurting one's own operation, and the ratio is plotted in the 4W-Matrix and identified with a relative IP strength ratio value. Depending on which section of the 4W-Matrix a firm falls into with respect to its target, various means of reaching the powerful Weapons segment can be pursued. Once in this segment, a firm's patent portfolio serves as a powerful top-down leverage point for gaining compliance from the target.

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