Informal restrictions and evaluation of patents

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Traditional IP management ideas

The development of what is now commonly known as patent management began in the USA in the late 1980s, after the newly founded Court of Appeals for the Federal Circuit[1] handed down numerous verdicts in favour of patent owners.[2] The existence of this new court significantly increased the enforceability of IP rights, thereby drawing public attention to their profitability.[3]

In short order, large companies such as IBM[4] and Texas Instruments[5] began developing sophisticated licensing programs to increase patent-based revenue. In this context, firms also had to develop methods of patent valuation so as to guarantee sound investment decisions.

Europe has lagged behind significantly in regard to recognizing the importance of active patent management strategies, and patent-valuation methods as a part thereof.[6] Only over the course of the past ten years or so has significant progress been made in these areas.[7]

This ever-growing interest in patent management and valuation is also in part a function of the recent emergence of numerous business models that utilize IP rights as their central asset.[8] Some examples of this are:[9]

- IP mutual funds IP finance
- IP auctions IP analysis services
- IP trolls IP insurance
- IP consulting IP data mining

As these examples indicate, there is significant diversification taking place in the way patents are used. No longer are they solely a means of protecting one's invention.[10]

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1 Founded in 1982, this is the main court in charge of appeals regarding patent infringement suits.

2 For example, in 1986, the court ruled that Kodak was to pay $925 million dollars in damages to the ten times smaller company Polaroid for infringement of its patents.

3 JL Davis and SS Harrison *Edison in the Boardroom* (John Wiley and Sons 2001) 7.

4 KG Rivette and D Kline *Rembrandts in the Attic* (Harvard Business School Press 2000) 46.

5 Ibid, 125.

6 A Wurzer and D Reinhardt *Handbuch der Patentbewertung* (2nd edn Heymanns 2010) 3.

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This article

- The article gives new insights into evaluating patents, irrespective of the underlying legal system.
- Most patents suffer from a reduced actual enforceability, eg due to a threat from counter patents by a competitor. This fact results in the set of formal rights (prohibitive rights) granted by patents often being reduced to a smaller set of rights which are actually enforceable, termed the informal restrictions approach ('IR approach'). The reduced set of rights is considered when determining the value of a patent, leading to more precise results.
- In building on the IR approach, an IP strategy matrix is introduced, which serves as a useful interface for modelling competitive patent situations in a simple way, thereby facilitating the derivation of viable patent strategies.

Before we examine the world of patent strategies in detail, let us briefly specify under what conditions patents create value for a firm so that we may better understand what exactly might constitute effective patent management.

7 Sykes and King published the first 'European' overview on the Valuation of Patents. See J Sykes and K King *Valuation and Exploitation of Intellectual Property and Intangible Assets* (Emis Professional Publishing 2001).

8 C Frey and A Wurzer 'Intellectual Property Managers in Strategy Development: Integrating IP into Business Models' in A Wurzer and L Kaiser (eds), *Praxishandbuch Internationaler Know-how-Schutz* (Bundesanzeiger Verlag 2009), 49.

9 See above n 6, 4.

10 A further approach is given in: L Escoffier, 'Reinterpreting Patent Valuation and Evaluation: The Tricky World of Nanotechnology' (2011) EJRR Vol.2011, No.1, 67–78.

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In short, the economic worth of a patent is the utility it brings to a firm in comparison to a situation without the patent.[11] More precisely, it can be defined as the worth of the firm holding the patent in comparison to the worth of the firm without the patent.

However, there are certain misconceptions regarding patents and their supposed inherent value. Many people erroneously believe that mere ownership of a patent automatically leads to great wealth. This is simply not the case. Owning a patent guarantees neither wealth nor any profit at all, for that matter. Rather, within patents, there *may* exist a potential for profit, derived from the competitive advantage granted by the patent's prohibitive nature, that is, the owner's ability to prohibit others from making, using or selling his invention. However, being able to impede others alone will not lead to any kind of revenue. In order to profit from a patent, its owner must also have *and* exercise the ability to make use of the advantage contained within it.[12] This ability to utilize a patent's advantage is usually contingent on complementary factors, such as having the necessary capital or production facilities to commercialize the invention or being familiar enough with the industry to know where the invention might be made profitable in the first place. Indeed, in some instances an inventor may hold a patent to a technology that is simply not useful in his specific industry. Apart from having no use for the technology, he may further lack the necessary funds, know-how or production facilities to commercialize the invention. To be sure, an invention, eg, in the form of an innovative technology or production method, does not equal a marketable product. Thus one of the reasons many inventions are licensed out to third parties is that sometimes there may be no other feasible way to profit from them.

The value-in-context phenomenon

It becomes clear that the degree to which a patent can be made profitable is contingent in large part on the specific context in which it is placed. A patent's value can fluctuate drastically depending on the context in which it is used, as we shall also see later.[13] This is commonly referred to as the 'value-in-context' phenomenon.[14]

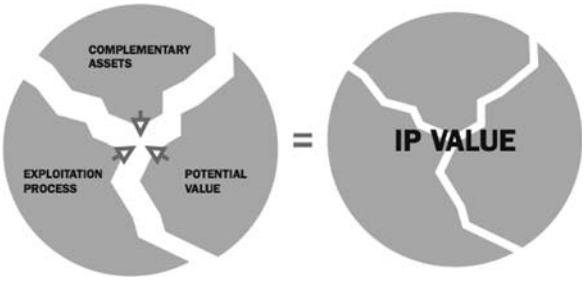

Figure 1. IP Value building blocks. Source: A Wurzer and S Hundertmark, 'Value oriented IP Management' (2006) IAM-Magazine 12/01, 33.

Beyond the need for certain complementary goods, the generally high specificity of inventions and their corresponding patents also contribute to this phenomenon. Inventions with a broad range of general uses, such as the light bulb, have become exceptionally rare. Presently, most patentable technologies are specific in nature and have only a small niche-area of application, thus exhibiting a low transfer value. This means that there are few, if any, other firms that could make use of the technology and, consequently, there is neither a competitor against which the patent would grant a competitive advantage, nor are there potential customers to license. In this scenario, the invention itself may have a high value for the firm; the value of the corresponding patent, however, will be close to zero.[15] [16]

To summarize, Figure 1 shows a patent's value as a function of its potential value, the existence of the complementary assets necessary to tap into this potential, as well as the exploitation process, that is, the specific way in which one goes about tapping into the patent's potential, eg, marketing techniques.[17]

Returning to our examination of patent management, it becomes clear that if one's patents (or patent portfolios[18]) are to create any significant amount of revenue—be it in the form of innovative products or revenue from licences—active management and strategic decision-making is mandatory.

11 See above, n 6, 34.

12 See above, n 6, 19.

13 D Drews 'Patent Valuation Techniques' (2007) Les Nouvelles Vol.42, No.1, 365–370.

14 J Daum 'Intangible Assets und die Optimierung der Enterprise Total Factor Productivity' (2003) Controlling & Management Vol.2, 129–135.

15 Above n 6, 29.

16 There are considerable costs involved with applying for and maintaining a patent. The amount is regularly in the tens of thousands of euros.

17 Above n 6, 30: the varying sizes of the pieces show that the three parts do not necessarily contribute equally to the patent's value, while the jagged edges symbolize the need for a holistic strategy that tailors each component to the other two.

18 It is rare for firms to hold single patents. For our purposes, 'patent portfolio' means a group of patents belonging to a firm.

In this sense, IP rights have become yet another strategic marketing tool, used in ways that go far beyond the protection of one's intellectual property.[19]

Effective patent management means maximizing the highly context-dependent value of one's IP rights by strategically coordinating all components relevant to a given situation.[20] This requires intricate knowledge of business administration, economics, strategic marketing and law.

Unfortunately, this need for interdisciplinary expertise frequently leads to confusion and, subsequently, mismanagement. This is especially true for mid-sized firms, which often cannot afford professional management services. In some instances, firms even choose not to actively manage their patents at all due to lack of know-how.

A new way of thinking about patents?

We will now look at the so-called Informal Restrictions Approach ('IR approach') and what it can do to facilitate a more accurate understanding of patent situations. Specifically, its purpose is to present an intuitive approach to understanding the characteristics of patents in competitive situations. In this sense, it can be considered a context in which considerations of patent strategy or valuation should be based.

The informal restrictions approach

The basic contention of the IR approach is that the formal rights granted by a patent are in many cases not fully exercisable due to *informal restrictions* arising from the particular environment of the patent-owning firm. It values patents based on the *de facto* opportunities they present to their owner.

Formal rights afforded by a patent are based on negative rights, which allow the patent owner to prevent others from using the invention without his consent. The extent of these formal rights depends on the legal scope of the subject matter protected by the patent, the number of countries for which protection is granted and the lifetime of the patent.

While, legally speaking, all patents afford their owners the same level of protection in regard to their right to prohibit third-party use of an invention, they may differ greatly in regard to the *actual enforceability* of these rights.[21] Such a reduction in a patent's enforceability can have various causes. A patent may, for example, be limited in its enforceability due to considerations of reputation. Most often, however, it is due to competitors—or clients (in a supply chain environment)—owning what can be referred to as 'counter-patents'. These are patents that are relevant to a firm's business but which are owned by a competitor.

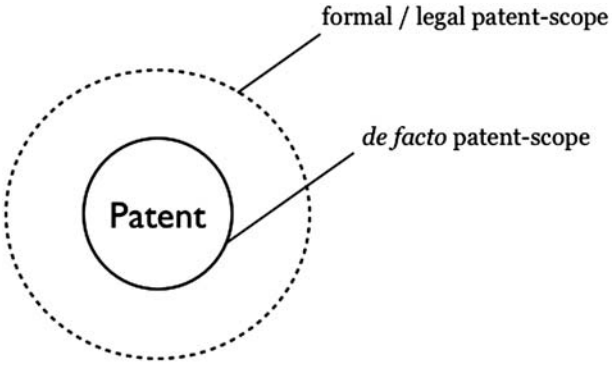

Figure 2. Patent with limited enforceability.

Counter-patents afford their owners the opportunity to 'retaliate', should they be the targets of legal hostilities, eg, temporary injunctions, infringement suits or nullity procedures. Figure 2 shows one such patent with a reduced scope. While the legal system grants a particular set of formal rights to the owner of the patent—as indicated by the dashed line—not all of these rights are actually enforceable. In practice, only a reduced subset of enforceable rights remains, as indicated by the solid line.

For example, if firm A wants to make use of a new patent and prohibit firm B from using its technology, and firm B owns a patent to a technology that is currently in use by A, there exists an interdependency between the firms, which would manifest itself in a legal stand-off should a conflict occur. Enforcing a particular IP right in these situations will likely lead to retaliation by the competitor, resulting in legal conflicts that waste company resources. Because these legal cases often cannot be won by either party, coexistence and collaboration usually occur.

Figure 3 depicts two situations. In case 1, Firm A enjoys full exercisability, since the de-facto-scope of its patent 1 coincides with its formal scope. This is the case because the scope of patent 1 reaches into Firm B's business operations, and Firm B owns no counter-

19 T Tiefel and P Haas 'Patentbasierte Strategien zum Einsatz im Hyperwettbewerb' in T Tiefel (ed), *Patent- und Schutzrechtsmanagement in Zeiten des Hyperwettbewerbs* (Deutscher Universitätsverlag 2005) 63.

20 C Hilti 'Strategische Planung—auch bei Patenten! Gibt es eine betriebswirtschaftlich "richtige" Patent-Strategie?' (1997) io management, Vol.66, No.10, 54; H Ernst and N Omland 'Patentmanagement in jungen Technologieunternehmen: Von der Gründung bis zur Insolvenz—Erfahrungen von Start-Up-Unternehmen' (2003) Zeitschrift für Betriebswirtschaft, Ergänzungsheft No.2, 97.

21 See R Levin, 'A New Look at Patent Systems' (1986) 76 AER 2, 199.

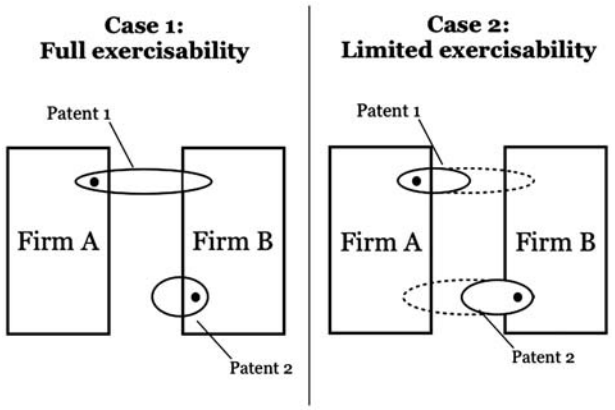

Figure 3. Effects of counter-patents on patent exercisability.

patents with which to retaliate (Patent 2 lacks the necessary legal scope to affect Firm A). In case 2 the situation is different: Firm B also owns a patent that affects Firm A's business, leading to mutual interdependence, as outlined above. In this case the *de facto* scope of both patents is reduced, as indicated by the dotted line.

Thus, despite being identical *formal* rights, not all patents are created equally. This has significant implications for the commercial valuation of patents: Any valuation method must necessarily take these informal restrictions into account if the monetary value of the patent is to reflect the *actual* value it will have for the firm. This is especially relevant when buying or selling patents since transferring an IP right from one owner, ie, one context, to the next, can fundamentally change its value. As mentioned earlier, what may be of extremely high value to one firm may be near useless to another.

The IR approach can be considered a qualification of the 'value-in-context' phenomenon. While the latter stresses that a patent's value is context-dependent, it fails to address the fact that what ultimately matters most is the owner's ability to actualize this value. 'Ability' in this context is not know-how, but rather the freedom from external constraints in the form of informal restrictions.

To elaborate, let us imagine a scenario in which a firm, FBM, has been granted a new patent. Let us further assume the following premises: (i) the potential value of the patent is great, eg, because it grants FBM the ability to prohibit its only two competitors from using an up-and-coming technology that is vital to progress in the industry; (ii) the firm is well established and has all the complementary goods in form of production facilities and necessary capital to commercialize the invention; (iii) it has a whole department dedicated to coordinating business strategy with IP management services in charge of the exploitation process.

According to the 'value-in-context' theory, all three conditions needed to realize a patents potential value are fulfilled. As a consequence, a given valuation method would come to the conclusion that the patent in question is of high monetary value. This, however, is not necessarily the case.

We established earlier that a patent's value is not inherent, but rather depends upon the owner's ability to make use of the potential contained within it. This being so, a patent's value becomes a function of the degree to which the rights granted by it are actually enforceable.

To make this clearer, let us add a further premise to our scenario: (iv) both competitors currently hold patents on technology used by our imaginary company. As is sometimes the case between large companies operating in the same industry, no licensing agreements were concluded.[22] These patents owned by FBM's competitors *could* be used to impede FBM's production significantly and have thus far not been utilized only because it was more profitable for both companies to co-exist, peacefully that is, each allowing the other to use its own technology without agreement or via cross-licensing agreements. As to (iv), FBM could not make use of its patent without fear of retaliation by its competitors. This *informal* restriction effectively reduces the *de facto* scope of the patent. Even though, legally speaking, FBM could make use of its prohibitive rights, the economic backlash could be so severe that it would not be commercially viable to do so.

Thus a patent's value is not a function of three, but rather of four components:

(1) Potential value;
(2) Complementary goods;
(3) Exploitation process; and
(4) The *de facto* ability to utilize the patent, contingent upon the existence of counter- patents or other informal restrictions.

The severity of retaliatory measures depends on the quality of the counter-patents, that is, the degree of relevance they have to one's business operations. If, for

22 The same applies to situations in which existing licence agreements are up for renewal within the next few weeks or months.

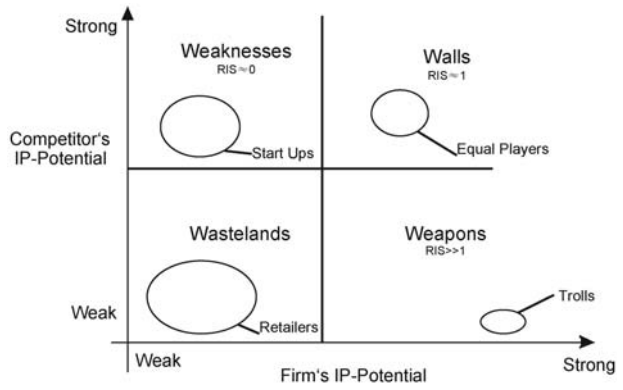

Figure 4. IP strategy matrix.

instance, there exist simple workaround solutions, the counter-patents can be considered harmless.

The decision of whether to make use of a given patent thus depends on a cost–benefit analysis: if the gains from employing a patent are larger than the costs associated with the retaliatory measures, it is feasible to employ the patent. The IP strategy matrix introduced below facilitates this process of analyzing a firm's situation in this regard.

The IP strategy matrix—a way to depict strategic situations

The IP strategy matrix (IPS matrix) introduced here (Figure 4) uses a graphical representation in order to visualize a firm's *IP position* with respect to a single competitor. In this sense, it is a form of bivariate portfolio analysis.[23] It seeks to identify viable courses of action in the form of generic IP strategies and determine optimal resource allocation of IP rights.[24] [25]

A company's IP position is derived from two variables: (i) its *exposure*,[26] defined as a function of the firm's revenue and the competing firm's ability to affect this revenue by utilizing IP rights and (ii) the firm's *IP potential*, that is, its potential to hit the competitor in his business by utilizing its own IP rights, under consideration of any existing informal restrictions.[27]

Defining a firm's IP potential

In terms of the IP potential, patents and other IP rights are to be regarded as prohibitive *formal* rights that could actually be used as tools against competitors. However, in practice it is often neglected that not the number of patents as such but only patents that actually affect a competitor can be seen as this type of tool contributing to the aforementioned IP potential.[28]

When determining the firm's IP potential, the first step is to measure the firm's overall potential for using these tools against a given competitor. In practice, most firms hold a large number of patents, each of which has a different impact on any one competitor. In order to determine the firm's overall IP potential it is thus necessary to review each individual patent in the context of its relevance for the particular competitor's business operations.

Far from being simple, however, a given patent's impact has to be determined under consideration of various factors, eg, the scope of the patent, its duration, workaround solutions of the protected subject matter and enforceability.[29] Beyond these, many other, sometimes more subtle, internal and external factors may influence the viability and effectiveness of a patent's ability to affect a competitor, such as the position of the owner within the supply chain.[30]

Accordingly, the determination of a firm's IP potential involves weighing and summing up all individual impacts. That overall IP potential for hitting a particular competitor in production may range from a very low degree (weak IP potential), where a competitor's business is hardly affected by one's possible actions, to a high degree, in which a competitor could actually be forced out of business by way of a number of effectively used patents that inhibit his production capabilities (strong IP potential).

The second step in deriving a firm's IP position within the IP strategy matrix is determining the competitor's IP potential for impairing one's own business activities in the same way, as seen from the opposite side. Having established both one's own and the competitor's IP potential, a *relative IP strength* (RIS) can be

23 O Gassmann and M Bader *Patentmanagement* (Springer 2006) 72.

24 A rather unstructured approach regarding patent strategies was published by RL Cantrell *Outpacing the Competition* (John Wiley & Sons 2009).

25 Generic strategies are similar to primary strategies as outlined in G Weber, G Hedemann, H Cohausz *Patentstrategien* (Heymanns 2006).

26 Above n 23, 72.

27 Gassmann and Bader, above, n 23, 73, refer to this ability as *Hit-Rate*, but fail to emphasize on the importance of consideration of informal restrictions.

28 In contrast to established patent portfolio analyses, the IP strategy matrix introduced here primarily focuses on identifying generic IP strategies to which a monetary value can be attributed only secondarily. For established portfolio analyses see A Poredda and S Wildschütz 'Patent Valuation—A controlled Market Share Approach' (2004) Les Nouvelles No.2, 77–85; A Wurzer and S Hundertmark 'Value oriented IP Management' (2006) IAM Magazine 12/01, 33.

29 An overview of different methods for assessing patents was published by J Ensthaler and K Strubbe *Patentbewertung: Ein Praxisleitfaden zum Patentmanagement* (Springer 2006).

30 O Baldus and C Heckmann 'Horizontal Patents, Commercial Benefit, and Sophisticated Patent Strategies' (2011) JIPLP Vol.6, No.6, 401–408.

defined as the quotient between the IP potential of the firm over that of its competitor and serves as a useful identifier for a firm's IP position. The firm's IP position can then be graphically represented on the horizontal and vertical axes of the IPS matrix, as seen in Figure 8. Based on these evaluations, it assigns to the firm one of four distinct IP positions, denoted here as *walls*, *weapons, weaknesses* and *wastelands*.

This differentiation into four positions takes into consideration the IR approach, which is imperative to gaining an accurate understanding of a firm's IP situation.

Importantly, the IPS matrix functions primarily as an interface for visualizing competitive situations based on IP rights. While complex calculations could certainly be integrated into the model, its main strength lies in its simplicity. Thus what is presented here are not the particularities of calculating these situations, but rather the general workings of the model itself, as well as the generic strategies corresponding to the four IP positions.

The 'walls' position

The walls position, as shown in the upper right corner of the IPS matrix, arises when two competing firms have equally strong IP potential and the RIS-value is approximately one. This symmetrical situation is quite common and typically given between equal players, ie, firms of equal size. A firm's size, however, need not necessarily dictate its IP potential. Indeed, it is possible—and not entirely uncommon—for firms of significantly differing sizes to find themselves in a walls position. In effect, a walls position means that each company is, theoretically, equally capable of hindering the business activities of the other (see informal restrictions approach in Figure 3). As a consequence, an implicit stand-off situation between the competitors arises, which can best be modelled with the game theoretic model of a so-called iterated prisoner's dilemma.[31] As mentioned, significant informal restrictions tend to exist in walls situations, leading to the potential for costly (and futile) legal battles. Taking this into account, a rational firm would not directly exercise its IP rights against a competitor without reason, eg, as a form of requital.

One optimal strategy in such a prisoner's dilemma situation, as shown by the payoff matrix in Figure 5,

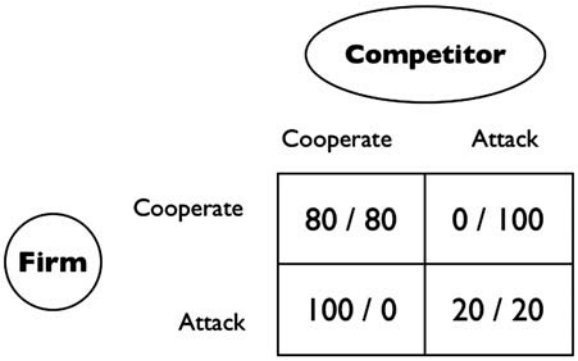

Figure 5. depicting a matrix of the payoffs of a prisoner's dilemma.

involves seeking agreement and cooperation with a friendly competitor, which leads to a gain of 80 for each company. In the case of an initiated attack, which could temporarily lead to a gain of 100 for the attacking firm, retaliation would occur in the next round of the game, resulting in a much smaller payoff of 20 for both in all subsequent games.

Therefore, collaboration is optimal only as long as there exists behavioural reciprocity between the two firms. If a competitor attacks one's firm, it is necessary to retaliate in order not only to increase one's gains but also to maintain credibility.[32] This simple 'tit-for-tat' strategy has been extensively researched, and evidence suggests that it provides optimum gains for each party in cases of on-going, ie, iterated games.[33]

For a paradigm of a similar stand-off situation and tit-for-tat strategies, one can compare this IP situation with the arms race during the Cold War, in which the USA and USSR were caught in a clinch for power that forced each to commit tremendous amounts of resources to matching the other's investments in order to avoid becoming militarily inferior and risking annihilation. Correspondingly, the role of patents in a walls position is to maintain an option for retaliation and constitute defence mechanisms against hostile IP-based and other attacks, such as aggressive marketing. In this sense, one's own IP rights can be more illustratively interpreted as defence walls surrounding one's business assets.[34]

In real life, walls may be erected in order to protect assets from, say, an aggressive neighbour. They can be lowered gradually when trust and friendship emerge,

31 R Axelrod *The Evolution of Cooperation* (rev'd edn Basic Books 2006) 28–32.

32 An ongoing example of such a retaliation is the current legal battle conducted between Apple and Samsung, see: Frankfurter Allgemeine, 'Apple verklagt Samsung', April 19, 2011.

33 RB Shelton *Gaming the Market: Applying Game Theory to Create Winning Trading Strategies* (John Wiley & Sons 1997) 22.

34 T Hürter and P Horak 'Schach mit Patenten' (2004) Technology Review, Vol.6, 23.

but should be maintained or even fortified in cases of uncertainty or potential danger. This analogy demonstrates the underlying rationale of the strategies employed in a walls situation. As above, a firm's behaviour in a walls position is largely dependent on the behaviour of its 'neighbour', that is, its competitor. This means that when a competitor increases investments in IP rights that are relevant for one's own firm—and, subsequently, the threat of an IP-related lawsuit increases—it is necessary to respond accordingly, ie, by enhancing one's own IP position. Likewise, when the competing firm maintains IP investments, one's own position may be kept as well.

The decision-making process with regard to IP investments follows this train of thought in that it calls for a thorough analysis of one's relationship to and with the competitor. Having considered the nature of one's relationships, one may determine whether, and to what degree, protective measures in the form of IP rights/patents, are needed in order to avoid being caught off-guard by a potential attack. While a minimum line of defence is usually necessary to protect the core of one's business regardless of how good the relationship to relevant competitor's may be, there are also situations in which no barriers are needed since there is no risk of an attack, eg, between affiliated parts of a corporate group.

Bearing this in mind, the walls position generally allows for two types of strategies, namely the *collaboration strategy* and the *decapitation attack strategy*. As the names suggest, one is defensive in nature, aiming at peaceful coexistence and the maximization of collective gains; the other is offensive in nature, seeking to incapacitate a competitor and maximize individual gains. Presuming that the potential of the firm and its competitor are equally strong, a strategy decision should be based on factors such as the firm's size, available resources and historic relationship with the competitor. Further considerations will, among other things, take into account marketing-related questions such as to what degree the competitor is actually encroaching on one's own business. If, for example, both firms target the same market, there may be a more immediate need to take offensive action than if the market overlap is fairly small. Ultimately, the costs of an aggressive action must be weighed against the prospect of successfully eliminating a competitor and the gains this would entail. In doing so, firms should analyse the associated costs holistically, taking into account, for example, the costs of a potential loss of reputation.

While the strategies are at opposite ends of the spectrum of possible actions, all intermediaries are sub-optimal. Keeping this in mind, firms should thus thoroughly evaluate the unique nature of their specific situation and then fully commit to their strategy of choice, both of which shall now be examined more closely.[35]

Collaboration strategy

Generally speaking, there is no reason to disregard informal restrictions and initiate any type of hostile action, eg, attacks such as infringement suits or opposition and nullity procedures against a friendly competitor, ie, one that does not attack one's own company. Such hostile action is sub-optimal in the context of a tit-for-tat strategy because it wastes company resources while achieving few gains, if any: a competitor will simply retaliate by employing his own IP rights, causing a stand-off leading to high legal- and opportunity-costs for both companies.[36] It follows that half-hearted attacks and casual skirmishes should be avoided completely in these situations since they lack the dedicated effort necessary for achieving any significant impact. Unfortunately, many firms still engage in this type of uncommitted, ambiguous behaviour without adhering to a general IP strategy, eg, by filing scattered opposition proceedings.

Thus, if a company finds itself in a walls position and wants to avoid such a futile, resource-intense conflict, it should choose the collaboration strategy, which entails an approach based not only on tolerance of, and respect for, the competitor's business, but also on co-operative measures aimed at making both companies better off, such as cross-licensing agreements. Seeking full cooperation and agreement with a competitor on IP-related questions will result in optimum gains for both parties and, it is hoped, peaceful coexistence over an extended period.[37]

With regard to distinguishing a friendly competitor from a hostile one, it is often difficult to recognize hostile behaviour in advance. In particular, changes in patenting behaviour are usually undetectable without a certain delay due to the 18-month period before patent applications are published. A competitor's attitude can change quite rapidly during times of transformations, eg when a key patent expires, economic problems arise or a new manager comes in. Because of this, firms should monitor a competitor's actions closely and

35 See O Baldus 'Patent-based Cooperation Effects' (2010) JIPLP Vol.5, No.2, 111–115.

36 See n 30, 403.

37 See n 31, 58–62.

continuously, even if the relationship is formally one of cooperation.

Equally, a sudden and complete change of behaviour also offers the most promising approach for attacking the competitor, as will now be shown.

Decapitation-attack strategy

The offensive course of action in a walls position, termed the 'decapitation-attack' strategy, is based on the idea of attacking the competitor in such a way that he completely loses his ability to retaliate. This strategy seeks to obliterate the informal restrictions posed by the threat of an adverse counter-attack. It can be considered both riskier and more resource-intensive than the collaboration strategy. However, it is also the strategy that provides much greater gains if successfully implemented. It is this prospect of exceedingly large future gains for the 'surviving' firm that is responsible for the attractiveness of this approach.

The basic premise of the strategy is to 'attack' the competitor, using various IP rights-related measures in order to incapacitate the competitor's economic resources. This can be accomplished in a two-pronged fashion, that is, by improving one's own and impairing the competitor's IP potential, for example by filing a large number of suits and procedures against the competitor, thereby effectively overwhelming him. This is done in the shortest amount of time possible in order to take full advantage of the element of surprise, and can be accompanied by additional measures that assist the loss of the competitor's retaliation potential.

Since it is necessary rapidly to increase the RIS value, the first element of implementing a decapitation-attack strategy is to improve one's own IP potential discreetly. This is achieved, for example, by filing new patent applications or by buying existing IP rights.

With regard to new patent applications, firms should attempt to file these in short order so that their publication is focused around the same time, which is generally around 18 months after the filing date. To accomplish this, it may make sense to delay the applications for previous inventions to a date when applications for more recent inventions are simultaneously possible. Since the competitor is not able to anticipate an attack within the 18-month period between the filing and publication of new patent applications, this time should be used to prepare the second vital component of the strategy.

As mentioned previously, the second element of a decapitation-attack involves impairing the competitor's IP potential. Common ways of achieving this are by filing nullity and infringement suits or triggering opposition procedure. Since the competitor almost immediately recognizes these activities, however, it is important that they be coordinated in such a way that they coincide with the first component of the attack as outlined above. If the attack is discovered before publication of one's filed applications, the second element must be initiated immediately in order to maximize the chance of success.

Ideally, an attack is triggered by the simultaneous publication of one's new patent applications and the filing of a large number of supplemental measures aimed at tying up the competitor's resources such as nullity procedures, infringement suits and temporary injunctions. On this note, the attack could even be further supplemented by including non-IP-related measures, such as aggressive marketing campaigns, thus creating a truly holistic attack.[38]

Since the decapitation-attack strategy is only successful if the targeted competitor is caught off-guard, it is of utmost importance to delay the competitor's awareness of one's undertakings for as long as possible. Along with thorough preparation and effective timing, the element of surprise is a key factor in the successful implementation of this strategy.

Due to the surprising appearance and overwhelming nature of the decapitation attack, it is very difficult to defend against it: the competitor must hastily raise a defence against an unexpected and well-prepared multi-dimensional attack.[39] Often the business simply does not have enough resources—human, monetary or logistical—to defend against a larger number of well-prepared actions. While this is a major advantage for an attacking firm, however, this fact also makes it necessary to monitor the competitor's behaviour constantly in order to pre-empt the risk of falling prey to such constantly actions oneself. It may even make sense to keep some short-term human resources on standby if a relationship to a particular competitor seems especially volatile.

In summary, the collaboration strategy is best in most competitive situations. It allows firms to benefit from mutual cooperation measures, such as

38 Principles of such marketing related measures are outlined eg in: JC Levinson *Guerrilla Marketing Weapons: 100 Affordable Marketing Methods* (Plume 1990).

39 B Oetinger, T Ghyczy, C Bassford *Clausewitz: Strategie denken* (Deutscher Taschenbuch Verlag 2006) 119.

cross-licensing agreements and sharing of resources, while avoiding the high costs associated with legal battles. Nevertheless, firms should regularly (re)evaluate their IP potential—especially during times of transition—both in order to detect potential decapitation attacks as well as recognize situations in which it may be advantageous to launch an attack themselves. In particular, a strong and sudden increase of filing activities, leading to an imbalance in IP rights, could be an indication of an imminent attack.

Though a collaboration strategy in a walls position can be quite comfortable for firms and may generate many gains, it is nevertheless an unstable equilibrium and firms must remain prudent at all times, as mentioned above. For this reason, firms may prefer to seek out the relative safety of a weapons position in the long term.

The 'weapons' position

The weapons position, depicted in the lower right corner of the IPS matrix, describes an asymmetrical state that is characterized by a strong imbalance in IP potential and leads to a high RIS value that significantly exceeds one. One firm is much 'stronger', and can thus easily exert its strong IP potential on a competitor without fear of retaliation.

In this case, the spectrum of possible strategies is much wider than in a walls position, allowing also for intermediate or extended strategies between collaboration and decapitation attack, such as attrition and overt attacks. This position corresponds to a state in which a mighty firm faces a defenceless competitor against which IP rights can be used as 'weapons' relatively indiscriminately and without fear of retaliation.[40] Speaking from the viewpoint of the IR approach, the low opposite potential for retaliation lowers the informal restrictions associated with own IP rights, as can be seen in Figure 6. Consequently, the set of actually enforceable rights (solid line) is increased within the set of formal rights (dotted line) as compared with the walls position as depicted in Figure 2.

However, just because a firm finds itself in a weapons position does not mean that it should necessarily exploit it. Indeed, there could be situations in which it would be more comfortable for the strong firm to reside in the relative comfort of arranged collaboration, similar to that of a walls position.

Nevertheless, though much more comfortable than a classic walls position, firms in a weapons position should still monitor the activities of their competitors, lest they lose their advantage and are thrown back into a walls position. This is especially true for situations in which the IP based advantage rests on a single key patent.

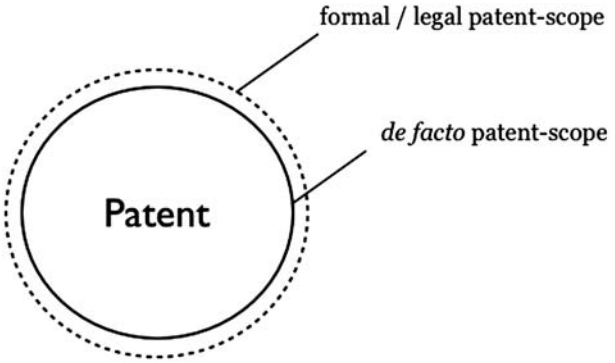

Figure 6. Patent enforceability in a *weapons* situation.

In order to keep weak competitors from improving their IP potential, a strong firm may use an attrition strategy, in which it intermittently files suits or procedures against the competitor in order to drain his resources. Which strategy should be chosen depends largely on the broader context of the situation. There may be cases in which it would be unwise to attack or hinder the competitor, eg, for reasons of reputation. In any case, whether a company chooses to fully exploit a weapons position or not, it should seek to maintain its strength by continuously monitoring its IP potential vis-à-vis its main or potential competitors and investing in its IP potential if need be.

In practice, the weapons position is often occupied by non-producing firms, such as patent trolls, since their non-existing production cannot be hit by the patents of another firm. To these trolls, informal restrictions do not exist and, accordingly, they are assigned the highest RIS values.

An example of a weapons position being exploited is the current struggle between the firms Oracle and Google, in which Oracle seeks to charge Google high licence fees. Google has so far been incapable of defending against this due to its weak IP potential in relation to Oracle.[41]

'Weaknesses' and 'wastelands'

The weaknesses position, shown in the upper left hand corner of the IPS matrix, is the inverse of the weapons position, characterized by a weak and a mighty com-

40 See n 34, 23.

41 'Oracle Seeks Billions in Lawsuit against Google', New York Times, June 16, 2011.

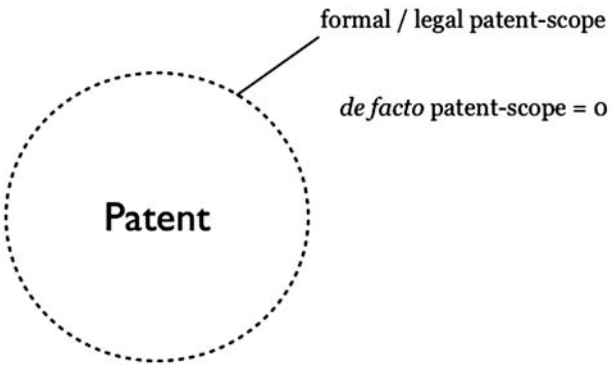

Figure 7. Patent enforceability in a weaknesses situation.

petitor, resulting in a low RIS value tending towards zero. The weaknesses position is dangerous since it leaves the company at the mercy of a mighty competitor, unable to enforce its own IP rights or even merely use them as 'walls', ie, deterrence mechanisms. Because a firm in a weaknesses position is so vulnerable to hostile attacks, aggressive behaviour toward strong competitors must be avoided at all costs so as not to provoke any retaliatory measures.

In terms of the IR approach, informal restrictions are extremely high—with an RIS value tending towards zero—since the weak company cannot afford to enforce even one of its patents regardless of how powerful they might have been. Often start-up companies will find themselves in a weaknesses position. Consequently the set of actually enforceable rights shrinks to an empty set.

Though not as powerful initially, patents are still of high importance for firms in weaknesses positions: They are vital building blocks for achieving the safety of patent parity vis-à-vis a competitor, ie, a walls position.

To achieve this, a company must improve its IP potential despite its weak initial position, eg, by research and development investment or by buying existing patents. It is imperative that any measures of this sort be undertaken with the greatest amount of care and secrecy as possible. Should the competitor discover any efforts geared at reaching a walls position and feel threatened by them, he could easily snuff out any such attempt by utilizing his own IP rights. Thus moving from a weaknesses to a walls position essentially involves employing the first half of a decapitation-attack strategy to establish a balance in the IP potentials and reaching a RIS value close to one.

The wastelands position is shown in the lower left section of the IP strategy matrix (Figure 4). In most patent systems, these wastelands arise in settings where patents are not possible or competitors do not hold any patents even though they theoretically could.[42] Since in a wastelands situation the corresponding IP potential is extremely weak, the RIS value cannot be defined reasonably and informal restrictions do not exist. Consequently, these situations are rather uninteresting in terms of IP strategies.

In reality, wastelands are found in business areas where patents are not provided or business is based on long standing technologies with expired patents. Common examples of wastelands are the business segments of retailers or the clothing industry, which normally do not hold any patents. Nonetheless, if a firm obtains a patent strongly affecting a competitor it could immediately reach the weapons position.

Summary

The IR approach presents itself as an intuitive and easy to apply paradigm for thinking about patents in competitive situations. It is based on the idea that the set of actually enforceable rights is always a subset of the legally granted formal rights. The size of this subset depends on the particular context in which the patent is embedded, eg, the patent owner's position in the value chain. Thus changing the context of the patent directly affects its value.

The IR approach proves itself useful by starting with the de facto capabilities a patent affords its owner. Building on this new approach, the IP strategy matrix serves as a useful interface for modelling competitive patent situations in a simple way, thereby facilitating the derivation of viable patent strategies. As with the IR approach, it too can be seen as a context in which other, more technical considerations of valuation may take place.

42 While in the US 'patents can be granted for everything under the sun made by man', in Europe patents for non-technical subject matters are not admissible.