

## Chapter 2

# Exercising Market Power Through IP

In the previous chapter, we explored how the underlying kaleidoscopic structure of the patent system in particular, and of the intellectual property rights (IPRs) in general, stir uncertainty over the scope and duration of patent awards. The convoluted nature of the patent claim system is bound to produce a lax interpretation of patent claims under the light of broad technical notions such as ‘novelty’ and ‘non-obviousness.’ The lax interpretation of what is subject to patentability adds further imprecision to an already incomplete set of legal rules.

In an attempt to redress this situation, patent and copyright laws concede IP owners a legal monopoly to exploit their intellectual assets. These provisions are intended to give title holders an exclusive title that seemingly reduces their uncertainty over their effective control of these assets. Exclusivity ensures that, at least on a formal level, no one else but them will control the intellectual asset. On closer inspection, however, the market power arising from such legal monopoly is qualified by the market context within which the patent owner intends to enforce it. These contextual circumstances impair the patent holders’ cognitive certainty about the precise extent to which they control such assets.

### 2.1 The Elusive Market Power of IP Monopolies

Businesses succeed in the market when they develop specialized, dynamic capabilities that give them the capacity to shape, reshape, configure, and reconfigure assets so as to respond to changing technologies and markets and escape the zero-profit condition (of the perfect competition model) (Augier and Teece 2008: 1190).

The common assumption is that such possibility of charging prices above the marginal revenue (exercising market power) accrues if the intellectual property (IP) owner has a title that preserves her from being eroded by competitors. A firm that holds IPRs can use them to suppress competition, stopping potential competitors

from offering customers identical or similar products or services. The main goal of an IPR holder is to develop market power to emasculate competitors' activity from the market.

Positive law defines the extent to which local legislation allows businesses to exercise market power through IP, but this capacity varies depending on the country and depending on the IPR. The legal powers associated with the legal instrument itself vest right holders with differing degrees of protection. Each type of IPR gives its possessor a varying degree of market power to charge prices above competitive levels and thus increase its profits. Patents, utility models, copyrights, trademarks, industrial designs, and trade secrets grant different degrees of market power according to the legislation applicable. IPRs differ in their scope of protection; in the protection, they provide against encroachment from competitors, and in the protective efforts they require from entrepreneurs to use them effectively. For example, patent registration is considerably more demanding than utility model registration concerning information disclosure and registration complexity; they give varying term protection to their beneficiaries (typically, for patents, 20 years from the filing date of the application; 7–10 years for a utility model without the possibility of extension or renewal). Table 2.1 shows a comparison of these rights.

It is important to note that the market power afforded by law is not immutable. It has changed over time, and also is contingent to the nature of the intellectual asset protected. Its elusive nature makes it hard to value it and to incorporate it into an IP management strategy.

The degree of monopoly power legally afforded to patent and copyright holders has changed over the years. Before the Uruguay Round of trade negotiations (1986–1994), there was no explicit agreement on IPRs in the framework of the General Agreement on Tariffs and Trade (GATT) multilateral trading system. Instead, a myriad of treaties negotiated since the second half of the 19th century governed intellectual property in a fragmented way. Countries differed significantly in the extent of protection and enforcement they afforded to IPRs; developing countries typically afforded much lower standards for IPR protection than developed countries. In the words of Mercurio (2014: 4): “The TRIPS Agreement harmonized the scope and length of protection that patents provide. While tailoring the criteria of patentability and extending patent protection is [sic.] possible, the international system sets the perimeters for both the scope and length of a patent. The system does not attempt to differentiate between industries or sectors.” The 1994 TRIPS Agreement is an effort to narrow the gaps in the legal protection accorded to IPRs around the world. Subsequent trade agreements have broadened the protection afforded by incorporating aspects not covered under the TRIPS agreement, implementing stricter IP obligations (referred to as TRIPS-plus). These include patent term extensions, patent linkage, data exclusivity, lower patentability criteria and additional enforcement measures. Examples of TRIPS-plus provisions appearing in trade agreements include the U.S. -DR/Central America Free Trade Agreement, the US-Jordan Free Trade Agreement and the currently under negotiation Trans-Pacific Partnership Agreement (TPP) between twelve Pacific-Rim countries, including several developing countries.

**Table 2.1** Standard comparative protection of different types of IPRs (in the United States)

Type of protection	Utility patent	Design patent	Utility model (not in the U.S.)	Copyright	Trademark	Trade secret
Subject matter	Utilitarian features	Ornamental features	Utilitarian features	Forms of expression: authorial work, writing, music, photo, literary, musical, pictorial, architectural, sculptural, motion picture, and computer software	Identifying symbol: words, names, symbols, devices, sounds, smells, non-functional trade dress	Formulae, processes, products, software, plans, designs, pricing, devices, R&D information, business information
Protection standards	Novel, useful, and non-obvious	Ornamental, novel and non-obvious	Lower inventiveness	Originality, authorship, expression	Identify and distinguish goods or services	Economic value from maintaining the information secret
Source of rights	Registration at Patent Office; U.S. Patent and Trademark Office	Registration at Patent Office; U.S. Patent and Trademark Office	Registration at Patent Office (not in the U.S.)	No; however, notice and registration help monetary recovery; registration required to suit. Copyright Office of Library of Congress	Common law by use, federal or state registration based on use. U.S. Patent and Trademark Office	State common law under the Restatement, the Uniform Trade Secret Act and precedents
Acquisition procedure	Claims in filing tested by PTO examiner before patent is granted	Claims in filing tested by PTO examiner before patent is granted	Examination after issuance	Automatic upon creation in physical medium	Federal registration and regulatory compliance	Maintain secrecy

(continued)

Table 2.1 (continued)

Type of protection	Utility patent	Design patent	Utility model (not in the U.S.)	Copyright	Trademark	Trade secret
Term	20 years from effective filing date	10–15 years from grant (changes based on the jurisdiction)	8–15 years from filing date (it changes based on the jurisdiction)	Works after 1/1/78: Life of author plus 70 years	As long as properly used; registration lasts 10 years (if formalities are met); renewable for 10-year periods	Duration of secret
What infringes	Making, using, selling, offering for sale, or importing devices embodying the claimed invention or using claimed process	Designs that appear alike to the eye of an ordinary observer and use ‘point of novelty’	Making, using or selling embodiment	Copying, distribution of copies, unauthorized performance or display	Likelihood of confusion, mistake or deception	Misappropriation, improper disclosure
Cost	High	Low	Moderate	Low	Low to moderate	Cost of maintaining secret
Continuing duties	Maintenance fee	None	Maintenance fee	None	Proper use; policing; renewals of registration	Maintain secret
Date protection commences	Upon issuance; 2–5 years from filing	Upon issuance; 2–5 years from filing	Usually 3–10 months from filing	When fixed in physical medium	First use; filing of U.S. intent to use application followed by registration	Creation of valuable secret

Moreover, the market power that IP owners can exercise is confined to the boundaries of a particular jurisdiction, because the enforcement of the IP legislation is usually territorial. There are no such titles as “international patents”, though there is an international patent application under the Patent Cooperation Treaty, even in this case, the protection is only intended to grant a temporary protection (one year), subject to the final registry before the national authority. The IP system is country-specific, in the sense that follows their particular circumstances of political economy. There is no convenient reference or international entity that centralizes enforcement or law making. Finally, some countries enjoy exceptions granted by the international treaties, thereby applying different protection standard in various areas of patentability.

More importantly, the legal distinction does not say much about how much market power a firm can wield to overcome systemic uncertainty and protect their knowledge effectively. Market power ultimately rests on the capacity of IP holders to protect their underlying knowledge from reverse engineering or other forms of imitation.

Ultimately, protection from encroachment rests on the nature of the knowledge embed in the intellectual asset. In particular, the market power that arises out of these capabilities stems from them being unique and not imitable. This condition applies to what Hayek (1936 [1948]) and Polanyi (1958) defined as “tacit knowledge,” that is, knowledge which is personal, subjective, contextual and therefore, hard to convey to third parties. The IP literature usually refers to this as “know-how.” Trade secrecy is intended to protect this type of knowledge. By contrast, knowledge which is easy to classify, dissect, objectively interpreted and subject to aggregation is harder to protect from imitation.

Tacit knowledge or know-how is harder to convey, therefore, to be traded; but also, it will be harder to imitate. Therefore, it requires no additional protection from the law other than verifying the owner’s diligence in preventing its unauthorized dissemination; in other words, the legal standard only requires the owner’s effective control over its disclosure. As a means of developing a competitive advantage, know-how makes it harder for competitors to dislodge the owner’s control of a key intellectual asset (Teece 1998). Yet, by the same token, the very problems of conveying tacit knowledge to third parties also makes these assets harder to trade in the market, thereby reducing their effective price. On the other hand, explicit knowledge embed in certain intellectual assets is easier to trade, but also to be imitated. Effective control of these assets requires additional protection from the law, usually in the form of exclusivity granted through patent or copyright protection.

In Teece’s (1998) words:

“The competitive advantage of firms in today’s economy stems not from a market position, but from difficult to replicate knowledge assets and the manner in which they are deployed.”

This form of intellectual capital is a differentiator in many types of new markets and therefore becomes a significant source of the competitive advantage of firms, because competitors can hardly replicate it. Know-how is the most important competitive factor influencing the firm’s competitive behavior, more so than codifying or structuring such knowledge under a patent. This phenomenon happens because dynamic capabilities are idiosyncratic, discrete and inherent to the particular experience of the firm. In the words of Augier and Teece (2008: 1202):

“This view represents the firm as an incubator and repository for difficult-to-replicate technological and organizational assets. Distinctive processes support the creation, protection, and augmentation of firm-specific assets and competences – all vital elements in the strategic renewal process. These assets and competences reflect individual skills and experiences as well as distinctive ways of doing things inside firms. To the extent that such assets and competences are difficult to imitate and are effectively deployed and redeployed in the marketplace (reflecting dynamic capabilities), they can provide the foundations for competitive advantage.

In short, know-how is more effective when coupled with IP protection. IP legal enforcement raises the bar against imitators, so that “while intellectual property can be traded, and can sometimes be invented around, it can no longer be infringed with impunity and without penalty” (Teece 2008: 10). In fact, building dynamic capabilities based solely on the possession of know-how is risky because it ultimately rests on the strategy of competitors’ not to replicate it because of the relative costs involved. The fact that market power stems from non-replicable knowledge does not mean that products or processes are fully shielded from imitation. Current technology often allows decodification of encrypted knowledge, thus threatening owners unless the law provides them additional protection.

At the other end of the spectrum, codified or explicit knowledge is easier to be replicated. Here the law sets forth mechanisms providing for exclusivity, as long as the knowledge is articulated clearly under a set of claims that the authorities can distinguish from those of competitors. Take the case of molecular compounds developed in the pharmaceutical industry. The nature of these chemicals is usually found in their quantitative formula, which is easy to decode once it is chemically developed. As Bansal and Koradia (2005) note “reverse engineering of the innovator product’s formulation is a scientifically sound and cost-effective strategy for accelerating generic product development.” Clearly, the best way to protect such an easily decodable asset is to offer exclusive protection to its developer, on the condition that the information is disclosed, so that unauthorized copying can be easily established, i.e., to patent it. By contrast, a receipt on how to make a secret sauce for a hamburger such as MacDonald’s Big Mac may depend on information that cannot be easily conveyed. Hence it becomes difficult to protect it.

Thus, the underlying knowledge embed in an intellectual asset drives the choice of IP strategy, whether leaning towards a patent-oriented one or a trade secrecy one. Empirical evidence supports this conclusion. Huang (2016) found in a study reviewing 362 firms and organizations in the knowledge-intensive genomics industry that under uncertain IPR conditions, firms reveal and accumulate more knowledge through open science (follow-on publishing) but shift to knowledge appropriation through commercial science (follow-on patenting) when IPRs are certain. This effect is most salient when firms develop their knowledge assets or operate under a strong IPR institutional regime. For highly science-based knowledge assets, firms continue tapping into open science for access and reciprocity in knowledge acquisition from the scientific community. Patenting is valuable because it levers businesses’ capacity to monetize their intellectual assets. However, patenting is considered a viable strategy under a predictable institutional setting.

In this kaleidoscopic milieu, enforceability and protection scope depends on the underlying technology subject to analysis. Even about patents alone, there is no such a thing as a “standard” of protection applicable to all industries. As Mercurio (2014: 4) indicates “while 20 years of patent protection may be necessary for R&D in the pharmaceutical industry, it may not be appropriate in the software sector, where, in the words of Posner, ‘after five years, these patents are mainly traps for the unwary.’ Likewise, is 20 years of patent protection for the pharmaceuticals adequate given that a large proportion of the patent period is over before the product can be marketed?” As Cho et al. (2015) indicate, there appears to be empirical evidence justifying such differentiation.

In short, the nature of the underlying intellectual asset influences the degree of market power that one can expect to obtain from the law. The problem here is that some intellectual assets’ knowledge are easier to protect by the law, as they are codified in a way that third parties can easily interpret. For this type of knowledge, legal disclosure, followed by exclusivity of use, seems to be the best fit. This situation induces entrepreneurs to choose a special blend of patents, copyrights, trademarks, and trade secrets protection that best matches their competitive strategies to build IP dynamic capabilities. These IP portfolios also strategize elements of IP protection with other means of developing competitive advantage in the market, such as lead start.

In short, IP managers overcome the problems arising from a fractionalized IP system by imposing their legal control over their intellectual assets. Faced with an array of legal instruments to help them ensure control, IP managers will likely seek the optimal combination of IPRs that will give them their best competitive advantage in positioning themselves in a given actual or prospective market. Each of these rights has different advantages and drawbacks, depending on the possibilities. However, the legal monopoly power vested upon patent and copyright holders is ultimately qualified by the nature of the knowledge involved.

Put it differently, IP protection relies not so much on meeting the legal formalities that businesses need to obtain a legal title but in their capacity to integrate such title into their competitive strategy, which should consider how likely it is for competitors to replicate the invention’s underlying technology. This approach involves identifying their “core technological” endogenous capabilities, on the one hand, as well as complementary ones (i.e., manufacturing, and finance), which they can obtain from competitors through contractual means (i.e., licensing and sale contracts), or through litigation. Thus, even if SMIEs became skill users of the IP system, they would still have to be capable of exerting legal control over assets that other firms control. In short, they must learn how to commercialize their intellectual assets.

## 2.2 Choosing Between Patents and Trade Secrets

The ultimate goal of IP management is to reinforce a competitive advantage at the firm level, by strategically deploying tradable and non-tradable assets under alternative legal instruments.

Companies build their IPR portfolios looking to enhance their market power. Managers perceive their IP portfolio as a “basket” of instruments that they can tailor to the specific technologies they intend to sell or license, the presence of other competitors, and the varying degree of protection that the legal system affords to each instrument, to increase their capacity to maintain or reinforce the market power achieved through their pioneering exploitation of the new technology.

As said above, the patent filing could prove counterproductive if the underlying technology is easily replicable, as this would provide the blueprints of the invention to copycats. There is always the danger that the competitors reverse engineer or re-adapt the invention, and possibly, in a worst case scenario, obtain a patent on the invention, in which case the original inventor risks patent infringement in such circumstances. High litigation costs and the uncertainty of effective enforcement could make patent registration unattractive for innovators as a means of protecting intellectual assets.

There are cheaper and more effective means for SMIEs to protect their knowledge, provided the technology is suitable to that end. For example, trade secrecy offers businesses an opportunity to protect their intellectual assets by not communicating them publicly. This is convenient when such knowledge largely rests on know-how, as opposed to coded, patentable knowledge.

Trade secrecy is a very effective defensive intellectual property strategy for products or processes whose embodied knowledge cannot be easily replicated by potential business imitators. Trade secrecy is frequently the most natural and immediate form of protecting the know-how emerging out of the innovation process and could be the company’s most valuable IP portfolio asset, even compared to patents (Hall et al. 2014). No matter how detailed manuals incorporating such knowledge are, know-how is inherently tacit and personal, hence difficult to relay onto third parties. Consider the complexity of the innovative design. A company may rely on the complex nature of its products when their composition and structure is such that it renders copying by competitors unattractive. Here, the protection results from the disincentive placed upon potential competitors, to do reverse engineering or to readapt the invention, or even obtaining a patent on the same.

In the context of IP protection, secrecy involves information that exhibits three traits: first, it is not known to a relevant portion of the public; second, it has commercial value; and last, reasonable action is taken to maintain its secrecy.

Coca-Cola holds one of the most famous trade secrets regarding the recipe of its original soft drink. Although the law does not protect trade secrets in the same way as patents or trademarks, they may still enjoy some level of legal protection (though the extent to which this is granted varies from one jurisdiction to another). One should distinguish between lawful means to obtain a trade secret (such as, by process of reverse engineering), and improper means (such as by industrial espionage) – which entails legal liability for the party acquiring it.

Also, trade secrecy is to be distinguished from abstaining from using IP, which displays the strategy of many SMIEs. This is usually a source of great confusion and is important to clarify it. Innovators may abstain from using the IP registry system because they do not appreciate its value, or simply they are unaware of its existence.



This is to be distinguished from the legal protection sought under a trade secret, where the entrepreneurs take concrete steps have to be conducted to ensure that know-how is protected, i.e. negotiating a non-disclosure agreement, notwithstanding the abstention from registering the IP.

As said above, the know-how protected through trade secrets has a disadvantage of being less liquid as compared to patents, for commercialization purposes. How can parties establish value upon tacit knowledge embodied in a trade secret? The economic value of trade secrets, like other forms of IP, lies in the proprietary competitive advantage it gives to its owner from use, together with the exclusion of third parties. However, unlike the right of exclusion that a patent gives to its owner, which stems from disclosing the information in exchange for a legal monopoly, trade secrets give a competitive advantage as long as they are undisclosed and owners make reasonable efforts to maintain them secret.

Under the legislation of some countries, statutory provisions protect this competitive advantage. For example, section 3(a) of the U.S. Uniform Trade Secrets Act (UTSA), as amended in 1985 states that competitive advantage unfairly gained through misappropriation becomes a basis for extending the period of protection.<sup>1</sup>

Like the case of patents, copyrights vest property holders with a legal monopoly. However, they afford differing degrees of protection in terms of time and the subject matter they protect (See Table 2.1). Also, there are significant differences in terms of the toil and costs of registering a patent as opposed to a copyright. Finally, unlike the patent system, copyrights protection is not administered through a system of ‘claims,’ because it does not use ‘prior art’ as a benchmark of novelty that entrepreneurs need to comply with in order to register their patents.

## 2.3 Building Large IP Portfolios

Companies build their market power by tailoring IP portfolios which combines the protection afforded by IP law with the capacity to obtain such power through technological means. Yet, companies may increase it even further by increasing the size of their IP portfolios, adding patents that protect adjacent technologies to their “core.” Building large patent portfolios protects innovators because of their higher scale effects, and lower transaction costs. Parchomovsky and Wagner (2005: 32–42) argue that a collection of closely related patents defining a patent portfolio operates like a ‘super-patent,’ as it will exclude others from the collective scope of the individual claims. They ease in-house innovation as they ensure that a wider range of technological possibilities will be covered which reduces the concerns over infringement of others’ patents. Also, a bigger scale enhances the ability to consolidate

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<sup>1</sup> Such provision states: “Like injunctive relief, a monetary recovery for trade secret misappropriation is appropriate only for the period in which information is entitled to protection as a trade secret, plus the additional period, if any, in which a misappropriation retains an advantage over good faith competitors because of misappropriation” (Section 3a).

technological developments by giving the firm an unassailable market position in a particular field. A larger patent portfolio helps to avoid litigation because a broader scope of protection will make proof of infringement by others more evident; also, it improves the patentee's bargaining position and enhances the diversity of the technology supplied.

From an IP risk management perspective, large portfolios reduce IP risk, thereby attracting investors' interest. Hsu and Ziedonis (2008) examine the degree to which patents enable entrepreneurs to acquire financial capital across the new venture life cycle. The authors conclude that having larger portfolios of patent applications increases the likelihood that entrepreneurs will attract initial financing from a venture capitalist. Specifically, they found that a doubling in the patent application portfolio of a new venture is associated with a 24% increase in valuation, representing an upward funding-round adjustment of approximately \$12 million for the average startup in their sample.

Finally, building larger portfolios reduces the transaction costs that otherwise would accrue if companies had to negotiate licensing contracts with third parties in order to outsource technologies they do not control.

Large companies often patent non-core innovations developed in the research of an activity production line to strategically build a larger patent portfolio, thereby becoming more attractive partners in cross-licensing negotiations or to defensively block other firms from accessing strategic assets in adjacent markets. According to the European Commission (2006) on average, 37.7% of the patents are not used. Of these, 47.6% are sleeping, and 52.4% are blocking patents. The same report indicates that large firms have higher shares of both unused patents and unused blocking patents on small and medium businesses. Small firms use about 80% of their patents, against about 59% for large ones. Patents may protect innovations that arise as by-products of a core research line or production activity. Firms might not use these patents because they do not master the downstream complementary assets for producing and commercializing the underlying products, or because they are uninterested in developing a position in these markets, or because the by-products could cannibalize other products of the firm (Gilbert and Newbery 1982).

In this setting, the system is tilted in favor of the big players, such as multinationals. Large companies, with sizable R&D budgets, are more likely to hold unused patents. Compared to startups, they are better positioned to manage the rights arising out of their patent titles. Hold-ups resulting from being blocked by others and of being sued for infringement is higher. The power of startups such as startups or single inventors to enforce their patents is weak, and thus the multinationals are acting similar to monopolies on IP markets (Bader et al. 2012).

The size of the IP portfolio is thus critical to ensure the innovator's competitive position, but at the same time, it raises a barrier to competitors with smaller portfolios. IP portfolio size effects create asymmetries between large operating firms on one side and individual inventors and small companies on the other hand (Jaffe and Lerner 2004). The patents that startups own or create are less likely to be monetized

because they typically belong to smaller portfolios and because their owners usually have limited financial resources and legal expertise, which severely undermines their bargaining leverage (Hagiü and Yoffie 2013).

### 2.4 Pioneering as IP Strategy

Lead-time is a defensive strategy that prevents competitors from amassing market power through their IP portfolios by becoming the first mover in a market. Pioneering firms establish their market presence through branding (trademarks), supported on their control of know-how (trade secrets), or standards, and through developing relationships with major distributors.

This strategy leverages this position through IP forms difficult for competitors to replicate, such as developing a reliable trademark embodying sound commercial reputation. It is no surprise that firms that consistently introduce pioneering products in the market prefer lead-time advantage as a strategy. Relative to other means of control over IP, lead-time scores high in the preference of users. In the United States, Cohen et al. (2000) indicate that for process innovations, only 23% of respondents consider patents as an effective control mechanism as compared to secrecy (50%) and lead-time (38%). For product innovations, respondents consider patents slightly more effective (41%), but still less effective than either secrecy (51%) or lead-time (50%). In Europe, the results are no different, as seen in the following figure, indicating the SMIEs' preferred strategy of IP protection (Fig. 2.1).

These are companies constantly in the lead concerning its innovative activities. By applying such an approach, the inventing company always has an enhanced

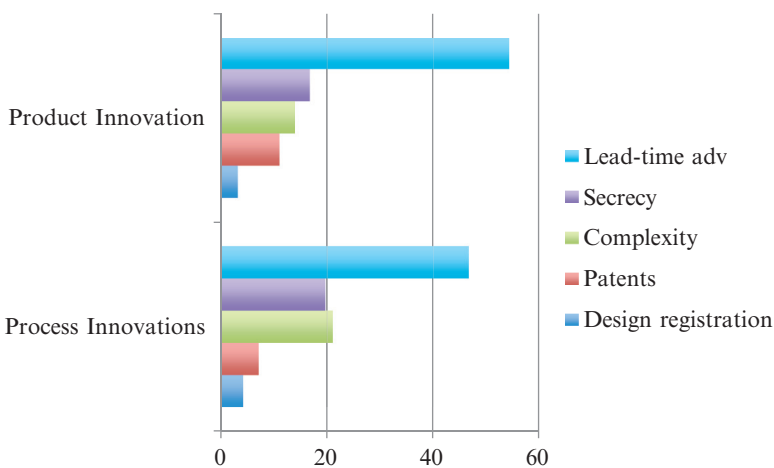


Fig. 2.1 SMIEs IP protection strategy in Europe (Source: Arundel 2001)

version of its products ready for release before a competitor has the time to successfully copy the product that is currently available on the market. A lead-time strategy complemented by the strategic use of trademarks and branding is a popular form of IP protection in the services industries, where know-how is also difficult to replicate.

Businesses engaged in becoming first movers usually position themselves through branding strategies. Trademarks protect against consumer confusion as to the source of the goods and can last indefinitely in the right hands. A strong branding strategy efficiently utilizes trademark protection to build goodwill during the early days of a product or service, such as during the early life of a patent and enforces the brand beyond the patent protection law provides. Eventually, patents expire, or a competitor will succeed in invalidating or designing around the patents. By that time, the product will have established market share and can continue to compete through branding even after patent exclusivity has ended. A branded drug, for example, will usually have a made-up name like *Viagra*®, *Abilify*®, or *Lunesta*®, which the generic newcomer generally cannot use without permission. The trademark and overall brand identity provide the opportunity for offensive licensing of an authorized generic to capitalize on the goodwill and brand recognition built by the ‘non-generic’ drug manufacturer (Rodriguez and Dunwoody 2014).<sup>2</sup>

Trademarks may be helpful to protect intellectual assets—reputation in this case—in the absence of other forms of protection. *Adidas*® is famous for its apparel and sportswear; it invested heavily in the marketing of its ‘*Three Stripes*’ design mark to ensure that consumers identified that mark with Adidas in the sports equipment and apparel markets. Since fashion design typically is not eligible for patent protection or copyright protection, Adidas has utilized its multiple trademarks to protect and enhance its market position and earn additional revenue. For example, in 2008, a court ordered Payless ShoeSource to pay \$304.6 million to Adidas, when the latter successfully claimed that the former sold shoes and sportswear that were confusingly similar to the Adidas ‘Three-Stripe Mark’ and ‘Superstar’ trade dress. A subsequent review reduced the penalty to \$64.4 million (Rodriguez and Dunwoody 2014).

## 2.5 Defensive Publishing

Among IP strategies, defensive publishing is the one that highlights best why exercising IP market power may not always be a desirable option for businesses.

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<sup>2</sup>Sometimes this strategy may be pushed too hard into an anticompetitive territory. A case in point is AstraZeneca’s appeal of a patent settlement, which was dismissed by the European Court of Justice, in early December 2012. The Court imposed on the company for two cases of abuse of a dominant position relating to blocking or delaying generic copies of the anti-ulcerant drug Losec (omeprazole). The Court found that AstraZeneca misused regulatory procedures to delay generic competitors in the market, as it intended to extend the life of its patents on Losec. Therefore, it ordered AstraZeneca to pay €52.5 million for abusing a dominant market position in the market for ulcer medicines. A similar case was decided in Ecuador in 2011, against Pfizer.

Defensive publication, or defensive disclosure, is used to prevent another party from obtaining a patent on a product, apparatus or method, for instance. The strategy consists of disclosing an enabling description and/or drawing of the product, apparatus or method so that it enters the public domain and becomes prior art. This powerful preemptive disclosure prevents other parties from obtaining a patent on the product, device or method. It enables the original inventor to ensure that they have access to their invention by preventing others from later making patent claims on it. Therefore, the defensive publication of perhaps otherwise patentable information may work to defeat the novelty of a subsequent patent application.

Companies considering developing a technology that may affect other businesses' IPRs may choose to disregard the potential claims of rivals by making public the potentially infringing technology. This option may be more affordable for SMIEs than filing a patent application, which not only requires payment of the filing fees (often in several jurisdictions, but also maintenance fees of the patent). Moreover, defensive publishing may be useful if the competitive advantage rests not only on the coded technology subject to publication, but rather on the know-how needed to operate it: the SMIE may thus preempt the threat of a competitor undermining their use of the technology, while controlling its practical use through know-how, which is much more difficult to internalize and replicate.

This strategy seeks to render useless any future litigation by a competitor claiming ownership of the technology, because there is a chance that judges will regard the technology 'prior art', thus part of the public domain. If the SMIE disseminates the competing technology as wide as possible before litigation is initiated, there is a great chance that judges will regard the standard technology public, thus unprotected. Knowing this possibility, a wide dissemination of a closely similar technology will put pressure upon the competitor claiming IP ownership to grant a license on the company carrying this strategy before the judicial ruling is made.

Defensive publishing makes important information public, for example, by disclosing the knowledge embedded in a technology in a specialist journal. In principle this strategy seems to be counterintuitive, as publishing allows access to anyone, who would be free to use the invention; however, in closer inspection, making knowledge public also means that nobody would be able to patent the invention as it becomes part of the state of the art. Thereby, all novelty claims—one of the fundamental prerequisites for patentability—will be defeated. Large companies such as IBM and Siemens operate their journals for the purpose of defensive publishing.

Milstein reported (2002) the case of Plantronics, a U.S. telephone headset manufacturer that developed a technology for reducing microphone noise. The invention was not something the company could use right away, but Plantronics executives did not want to risk letting a competitor patent the idea first. The company sought to prevent competitors from patenting the design of the headset by posting a description of it on IP.com, a website that enables inventors to establish an idea's legal existence, transforming the novelty into prior art, and part of the public domain.

This is a highly risky strategy, because it ultimately rests on the decision of judges, not to construe the technology as similar or part of the public domain. As Fisher and Oberholzer (2013), there is a great chance that such judgments can run

either way. Milstein (2002) justifies this strategy, because although “publishing an innovation means that competitors have access to it (...) the competitive risk is outweighed by the benefit of making it difficult for someone else to win a patent—a patent that could give the holder the right to demand licensing fees from all other users of the technology or technique.” Moreover, as Henkel and Pangerl (2008) indicate, this strategy presents itself as an alternative to patenting and secrecy, because the increased number of patents today (particularly of low-quality patents) raises the risks of the innovative firm to be blocked by judicial means, and trade secrets tend to leak out.

## 2.6 Patent Donation

Very often, corporations develop technologies that fall outside their ‘core’ capabilities. At DuPont, researchers found a way to make a valuable chemical that leaves water as the byproduct instead of tons of acid. At Eastman Chemical, they devised a plastic packaging that could more than double the shelf life of beer and soda. At Procter & Gamble, there were discoveries that could help doctors reduce skin discoloration from burns, wounds and grafts. All these cases have a commonality in that none of the technology mentioned represented their ‘core’ knowledge, yet they prevent competitors from developing market power through closely related or similar technologies.

Through patent donations, companies put inactive but potentially useful intellectual property in the hands of other organizations, mostly academic research centers that will develop and apply it. That helps patentees to transfer their unusable patents to universities, hospitals and other non-profit or governmental institutions and that these organizations would then put them to work within their own research programs. This could help donating firms to have leverage on the new technologies developed on top of the donated one, or prevent competitors from holding-up by patenting competing technologies.

Yet, the reason that induced firms to use patent donation was not strategic but financial. Corporations use their patent stock much less than expected. As Feder (2002) indicates, “Good companies use only 20% of their patents,” said Sam Khoury, the president of Inavis International, a consulting firm that appraises patents, trademarks and related corporate assets. “Badly run companies use only 10%.” The question arises, what to do with these idle patent stocks? Unused technologies entail a legal cost of protection, which in the case of corporations with large patent portfolios, can take a considerable financial stake of their balance sheets.

First, patent donation allows businesses to improve the overall financial return of their intellectual assets. Tax regulations in the U.S. allow enterprises to take a tax deduction for the value of a patent. Large corporations with large patent portfolios would review their holdings to identify ways to increase the financial return on their intellectual assets by doing away the expenses associated with patent maintenance

expenses of patents that are not part of the corporation's 'core' or that are not used as a 'defensive shield' against potential patents of competitors.

Corporations have taken significant advantage of this opportunity to offer patents to a variety of non-profit institutions, sometimes to the point of raising the concerns of the IRS, due to excessive use or misuse of the deduction scheme.<sup>3</sup>

Dow Chemical Company introduced the concept when it discovered that 25% of their patents had no business value, they were able to save more than \$40 million in 5 years by downsizing their portfolio by over 10,000 patents. According to calculations by M-Cam, who specializes in valuing and auditing patents, corporations received \$3.8 billion in tax deductions for donating patents that may have had no commercial value at all.

Aside from the tax credit reasons, Fisher and Oberholzer (2013: 168) also see capital market concerns as a reason for donating patent stocks. By disclosing part of its non-strategic knowledge, corporations can signal its value to capital markets for their strategic technology stock, thus making it easier for them to obtain financing.

More recently, large international companies throughout the 2000s have increasingly adopted an 'open innovation' business model based on the premise that technology commercialization can be greatly simplified, expedited and accelerated by incorporating external IP, expertise and multiple partnership relationships into technology commercialization activities, instead of relying solely on internal IP and expertise.

Open innovation has thus enabled the financial sustainability of innovative start-ups, who have become suppliers of large corporations willing to reduce their in-house R&D costs, and find alternative forms of producing innovation through outsourcing. Yet, in order to successfully trade their intellectual assets, startups need support from specialized partners who can provide them with business expertise, and IP strategic know-how.

As Polonenko and Chatterjee (2011) note:

Patent protection is a key element in open innovation business models. However, unlike the closed innovation approach that regards patents as monopolistic 'fences' and 'barriers' to keep competitors away, the open innovation approach considers patents as 'currency' that can be used to acquire access to third-party IP to expedite technology development through non-exclusive licensing and/or cross-licensing. Moreover, the open innovation approach is comfortable with the selling or bartering of non-essential IP to secure at least some return on the investment for IP protection, instead of simply abandoning patents that have little or no direct value to the IP holder.

Open innovation represents a paradigmatic shift in the development of IP strategies. Whereas in the past businesses focused around how to create and protect patents, open innovation laid down an alternative road, focused on finding the scope of

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<sup>3</sup>The popularity of patent donation is such that in a 2003 Treasury Issue Notice, it was declared that the IRS is aware of purported charitable contributions of intellectual property involving: (1) transfers of nondeductible partial interests in intellectual property; (2) the expectation or receipt of benefits in exchange for transfers; (3) inadequate substantiation of contributions; or (4) overvaluation of intellectual property transferred.



the public domain, and developing supporting strategies around it (Boyle 2008). Moreover, IP strategies designed around open innovation provide unique opportunities for institutional technology transfer offices and businesses to engage each other far beyond their traditional focus on securing exclusive license deals. The organic way this new approach has evolved elicits the adoption of fully-fledged incubation strategies that take into consideration not only IP but also other areas of business strategy.

## 2.7 Non-competition Clauses

Companies that deal with qualified employees who control delicate trade or industrial secrets use non-compete clauses in their labor or services contract to protect their secrets from being disclosed publicly. According to these contracts one party agrees not to compete with the other for a set period of time. These contracts are negotiated either upon contract signing or at the end of a business relationship to protect them. From the viewpoint of the IP holder, these contracts seek to extend their market power through contractual means.

Non-competition clauses are particularly relevant in certain industries where other forms of IP protection are unavailable, due to the nature of the secrets involved. Such is the case of the fashion industry, where creative and executive positions at the industry's most celebrated brands often swap seats. Such clauses could serve as more than merely a way for brands to ensure that their top talent does not switch to a competitor; non-competes, in a way, serve to protect brands' valuable designs from being copied, particularly given how easily it is for garments and accessories to be replicated. Fashion, after all, does not require the millions of dollars and lengthy timelines associated with innovation in the technology space, for instance. In this industry, a design may be taken to a new brand and replicated in a matter of days.

A case that exemplifies the relevance of IP management strategy based on non-competition clauses is the lawsuit for breach of contract that Carolina Herrera, the Venezuelan fashion designer based in New York brought against Oscar de la Renta, over Monse Founder, Laura Kim. The suit, filed in December 2016, was intended to enforce a 6-month long provision in the contract of the house's former senior designer, Laura Kim. The New York state court that is currently hearing the case, had issued a temporary restraint order that upheld the non-compete agreement, but on December 23rd lifted the preliminary injunction that barred Kim from working at Oscar de la Renta.<sup>4</sup>

In sum, this chapter highlighted how IP strategies rest around the pursuit of market power arising out of the non-replicable nature of the intangible asset protected, and of the legal monopoly power granted by patents and copyrights under the IP law.

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<sup>4</sup>News available at: <http://www.thefashionlaw.com/home/carolina-herrera-sues-oscar-de-la-renta-over-monse-founder-laura-kim>.



The selection of alternative IP strategies may be directed towards increasing the control of such assets, either by reinforcing their legal protective shield; by enlarging their patent portfolios, so to shield entire sectors from likely challengers or simply by pioneering the new technology. Also, companies deploy defensive strategies against competitors that could threaten their competitive advantage by means of controlling adjacent technologies, or by preventing others from enjoying exclusivity of their own research. The array of options extends well beyond patent or copyright registry, and include patent donation; defensive publishing; and introducing non-competition clauses, where necessary.



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