

# Legal Considerations in the Development and Commercialization of Corporate Intellectual Property

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**Abstract**— With the exploitation of the internet and societal innovations and legislative shifts, it is repeatedly being raised as to whether and to what degree businesses and individuals can protect their intellectual property and in economic terms the worth of doing so. To date, how to capture value from IP and what can be considered an effective IP strategy are subjects for which there is no definitive answer as the solution is very much industry and firm-specific. Therefore, the primary goal of this paper is to provide a strategic perspective on intellectual property exploitation and management in a manner that is relevant to the business objectives of today's corporations. In doing this, this paper will argue that the effective management of IP is a complex process requiring a synthesis of insight from several disciplines ranging from strategy to finance and law. The argument underlying this is that in the same way that today's corporation has changed the way to strategy and management of other business assets, there too is a need to change how IP is both managed and exploited. This theme is prevalent throughout the following analysis, however, these two opening sections aim to provide a comprehensive framework that links and articulates the various aspects of corporate IP. This framework will be of most use to managers and decision-makers with responsibility for IP who are seeking to maximize the value of their property to use it as leverage to gain sustainable competitive advantage. A second audience for this paper is the academically minded. A sign of changes to come is that IP is now a topic of academic research in various fields that encompass PhD and other advanced studies. In addressing the wide disciplinary audience, the following analysis draws evidence from a mix of academic and business sources.

**Keywords**— Development, Commercialization and Corporate Intellectual Property

## I. INTRODUCTION

Intellectual property rights are at the forefront of current public debate in industrialized countries. In the legal profession, intellectual property issues are of utmost importance to a legal practice and, because of their complexity, to the foreign trade and general corporate practice in today's interconnected global economy. This is the case whether counseling clients on patent development, trademarking an image or slogan, copyrighting software, or ensuring that network or click-

wrap agreements create adequate protection of often the most valuable corporate asset. Similar, yet often more subtle and complex, issues arise in joint ventures and other relationships where rights are assigned or shared and in mergers and acquisitions of technology companies or divisions. Intellectual property law serves the public interest by encouraging individuals to invest their time and effort in developing new technology, brands, and creative works, thus contributing to economic progress. It does so by conferring on them the

right to control and profit from the use of their ideas, subject to the needs of the society as a whole. Duplication and misappropriation of intellectual capital without compensation is a widespread problem in the rapid and vast movement of information and technology in global markets. The substantial costs of developing technology or new product brands can often be incurred in a relatively short development phase or initiative, making it especially important for emerging or established companies or organizations to have the strongest possible protection and realize value from their intellectual capital.

### 1.1. Definition of Intellectual Property

Intellectual property (IP) is a category of property that includes intangible creations of the human intellect. There are many ways in which to protect one's intellectual property, to maintain the right to give their idea a form of tangible property. The primary way to do this is to assign one's intellectual property as an invention, piece of software, or a business method, or it may be embodied in other products or processes. Once a person 'invents' something, they can declare this as a patent, which is then only usable and marketable by the owner of the patent. Copyrights are also an effective method of maintaining one's intellectual property; they serve as writings, music, and other forms of expression, but do not protect the actual idea, but rather the specific form of representation of the idea. Trademarks are used to secure phrases, symbols, or designs that help distinguish the source of a good or service. These methods all serve as precautions to protect against others attempting to steal, imitate, or reproduce one idea and declare it as their own. Failure to perform any of these protection methods may result in little to no safeguard of one's intellectual property, allowing easy access for others to imitate and eventually declare the idea as their own (Feng & Jaravel, 2020).

### 1.2. Importance of Intellectual Property in Corporate Development and Commercialization

Intellectual property remains to be an extremely important factor for corporate development and commercialization. The creation of intellectual property documents the hard work and innovation of a business entity in its quest for recognition and success in the corporate sphere. The lack of protection for intellectual property may not only result in losing the benefits from one's research and development but may also handicap the entity's potential to expand and grow, eventually

leading to its decline in the market. Hence, it is important for business entities to fully understand the different laws and exploits available to protect their intellectual property, be it in the form of a patent, trade secret, trademark, or copyright, to fully utilize what they have created and avoid inadvertent loss of rights. It is also crucial for companies to recognize the substantial value of their intellectual property. The intellectual property of the company is often its most important asset, which may take many years and a large investment to cultivate. For example, it is not uncommon for a company to spend millions of dollars on research and development of a particular product, which will create a patent for the product as its protection and a means to exploit it for profit. From the point of creation to the patent and the time the product is now in the market, the company may face different problems as to how best to exploit the patent and how best to prevent others from trying to copy the product. Given that a patent lasts for twenty years, this is a twenty-year monopoly for the product in the country of patent.

## II. TYPES OF INTELLECTUAL PROPERTY

Intellectual property is a broad and perplexing area of law. It is a term used to encompass four types of law (copyrights, trademarks, patents, and trade secrets) that give protection to tangible and intangible assets such as literary or artistic works, symbols, names, inventions, and the concept and design behind new or improved products. Each of these four areas of law assists in the protection of certain types of intellectual property (Papageorgiadis et al.2020). The choice of which type of law to use for the protection of a given asset depends on what the asset is exactly, and the legal rights granted for protection can vary greatly between each of the four types of law. Thus, legal advisors must have a deep understanding of each of the four different types of intellectual property and know where each one applies.

During the last century, the United States economy has changed from a manufacturing-based economy to an economy based on knowledge or information. This shift has a substantial impact on the development and commercialization of corporate intellectual property. It is widely believed that the increased importance of intellectual property to the economy in recent years can be attributed to the fact that many companies now have more knowledge or information-based intangible assets than tangible ones. This trend is likely to continue in the

future. Thus, for both today and the foreseeable future, it is necessary for legal advisors to companies to have a strong understanding of intellectual property law. With this understanding, legal advisors can help companies protect their crucial intellectual assets and also prevent infringement upon the intellectual assets of others.

### 2.1. Copyright

Copyright is the area of intellectual property law that confers the exclusive right to prevent others from copying a work. Many people believe that to obtain a copyright it is necessary to register the work. This is not so in most common law jurisdictions. Copyright exists automatically upon the creation of a work that is recorded in some material form, be it written, filmed, or typed. If an employment is made in the course of employment, the right will belong to the employer, not the employee, unless there is an agreement to the contrary. The period of protection for a copyrighted work is normally 50 years after the death of the author. There are various exceptions to copyright infringement, in Australia these are covered by the "fair dealing" provisions in the Copyright Act. One of these is about the use of a copyrighted work for research or study. This is particularly relevant to universities and research organizations. In addition to the fair dealing provisions, there have been several amendments to the Copyright Act that allow the use of copyright work in certain circumstances without the authority of the copyright owner, these are known as Statutory licenses. An example of this would be the use of copyrighted material on radio and television, this is licensed by collecting societies who collect the license fees and distribute them to copyright owners. Although protection is automatic, a copyright owner does not have to take any positive steps to secure the protection of their work (Hugenholtz and Quintais2021).

### 2.2. Trademarks

Trademarks serve as source identifiers and marks of authenticity. They are intended to prevent consumer confusion and provide tools for advertisement of the product, while also affording legal protection to modern commercial development of products and brands. A trademark can be any word, name, symbol, device, or any combination, used or intended to be used to identify and distinguish the goods and services from those manufactured and sold by others and to indicate the source of the goods. The owner of a trademark has a protectable interest in its exclusive use. Normally, those

entitled to use trademarks are determined by a seniority and priority system. This can be important in determining the attainability of trademarks. The modern process of multinational sales implies a great geographical proliferation of the products. The trademark owner must avoid or stop a contemporaneous use of a confusingly similar mark on its goods by a rival. This is known as infringement and provides the most common forum in which to attain or defend a trademark. An action to enforce rights in the use of a mark involves the application of legal principles concerning unfair competition and the related common law right of passing off. An accord exists among many common law jurisdictions and the member countries of the Paris Union for the Protection of Industrial Property which provides certain international legal alignment for procedures and principles connected with trademarks (Baird, 2023). This may be codified at the national level in statutes specific to trademarks. One of the most well-known systems is that of the registration of trademarks. This is a jurisdictional granting of a right to use the mark on particular goods and in particular ways coupled with a condition of filing and periodic renewal of registration and displaying an intention to put the mark to use. Any of several potential rights and causes of action may require assertion or defense of the trademark at various stages in the evolution of a modern product.

### 2.3. Patents

In terms of the commercialization of a patent, five methods can be used to achieve the maximum profit for the owner. The patent can be licensed to a third party, providing the owner with royalty payments. It can be sold to another party, and the owner can use the sale proceeds for further research and development of other inventions. The owner can use the patented invention to produce and sell a product in which they have a monopoly for the invention's life. Another method is a joint venture, where the owner of the patented invention and another party provide an agreement to exploit the invention in equal parts. Finally, the most risky and expensive method is to exploit the patented invention abroad (Grzegorzczuk, 2020).

A patent is an exclusive right granted concerning an invention, which can be a product or a process, that provides a new and inventive solution to a particular problem. To be granted a patent, the owner must provide a complete disclosure of the invention, which is assessed against the prior art (everything that is known

or used in Australia before the priority date) by a patent examiner. A patent gives the owner the right to exclude others from exploiting the invention for a period of up to 20 years (Gaikwad and Dhokare2020). Although patents are national rights, it is possible to obtain international protection by filing an international application under the Patent Cooperation Treaty and then entering national phase applications in each country of interest within 30 or 31 months from the priority date.

#### 2.4. Trade Secrets

This is where the first problem lies with intellectual property rights. The informal nature of trade secrets means that often it is pushed to the side when discussing the protection of intellectual property rights, and more formal rights are focused on.

Trade secrets are very much an informal intellectual property right, and the secret must maintain its confidential status. If the secret comes into the public domain and its information is widely available, the trade secret holder will likely lose the legal rights to that secret. This is in contrast to an infringement action for, say, a patent, where the patent remains valid despite another infringing the patented invention (Aplin et al.2023).

That said, trade secrets are an important thing to consider when intellectual property rights are being talked about. These rights are exclusive rights given to numerous kinds of intangible goods. It can be said that the essence of an intellectual property right is a trade secret in the form of an intangible product.

Contrary to the other more established areas of intellectual property, trade secrets would appear to be a form of frustration for intellectual property lawyers. The reason is that trade secrets protection is different from other intellectual property rights in that they do not have absolute protection and the means of action to enforce those rights.

### III. LEGAL PROTECTION OF INTELLECTUAL PROPERTY

Registration Process Though the unfamiliarity of worldwide information and IP legal awaiting much descriptive recent studies, it used to be critical to start from a common foundation by briefly reviewing the registration systems for patents, trademarks, and copyrights. During this schematization, an institutional legalistic, approach to IP protection is followed whereby a firm seeks to realize a competitive advantage through

superior knowledge formulation into an information-based good. The prerequisite for such enterprises is usually the legal protection (property rights) in the knowledge-based good that acts as an entry ticket into the market and also a defensive weapon against imitators and predators. With very few corporations being able to successfully launch a new product into the market in less than twenty years, the patent remains the most long-standing and encompassing legal tool for the protection of a knowledge-based good. Patents are issued and enforced on a national basis although most countries have a means for obtaining a patent registered internationally. The rights associated with a patent give the owner the power of legal exclusion whereby others cannot make use of or sell the invention in question. Patents provide the right to damages where an infringement has occurred and therefore for certain technology can constitute a virtual right of market exclusion. With recent trends showing that patents are not only an offensive legal weapon but also a tool for power diplomacy between corporations seeking cross-licensing agreements (or to avoid lawsuits), the international regulations and foundations for patents are of increasing importance. Trademarks are seen as fundamental in protection for visual and verbal representations of a brand or product. And with the average consumer often having the opinion that a trade or business name is a trademark, this within itself is potentially registrable and can lead to confusion for what is decently a low criterion for protection. However, the spectrum and success of protection varies greatly given that a registrable logo can take on many forms (Neumann and Neumann2021). With the law of passing off still providing grounds for legal action against an unregistered trademark, it is often recommended that all forms of trademark be documented to facilitate easy access and to enhance protection. A trademark registered with the Trade Marks Office can last indefinitely given renewal within a certain timeframe.

To study the connection between IP and information-based competitive benefits, a qualitative (theory-oriented) technique was used to variously analyze the business conditions.

#### 3.1. Registration Process

Since certain rights associated with patents, trademarks, and designs are only obtained through registration and can be lost through non-use, registration is highly beneficial. Patents must be registered in each country in

which the owner seeks protection, and though an international application process can simplify the process, this is not a single "worldwide patent". Trademarks can also be registered in select countries or through an international system, and registration provides a presumption of validity and ownership. In comparison, copyright protection does not require registration in Australia as it is an unregistered right. However, registration systems exist in some other countries and can provide useful evidence of ownership. (Iasechko et al.2020)

Registration provides the most solid form of protection for a business, as unregistered rights are often difficult to prove and can be limited in their enforceability. Registered rights provide evidence of ownership, enable the IP to be licensed or assigned, and provide protection that can be enforced against infringers. Registration processes vary significantly between the different types of IP and the different countries in which protection is sought.

The term "intellectual property" refers to proprietary rights of creations of the mind and is a category of intangible assets that includes, but is not limited to, patents, trademarks, copyrights, and trade secrets. Corporations protect their IP to prevent their competitors from commercially exploiting their ideas, products, or services. With the globalization of business, it has become essential to consider intellectual property rights in any business strategy involved in foreign markets.

### 3.2. Rights and Limitations

The agreement of the owner to allow other parties to use an intellectual property can be expressed, or it may be implied by the conduct of the owner. Usually, these agreements will be for a limited period and may be for the use of a particular type of intellectual property, use in a particular area, or about a certain other product. In situations where the agreement for the use of the intellectual property of the owner is ambiguous, there may be a dispute between the owner and the other party as to whether there was permission given for the use of the intellectual property. This may result in legal action where the owner seeks to prevent the use of the intellectual property by the other party because it is still within his rights to do so. Finally, there may be situations where due to public policy considerations such as the health of society, or the welfare of a particular group of people, the government will introduce laws allowing the

use of intellectual property without the permission of the owner. This is known as a Crown user in Commonwealth countries and is seen in various forms of legislation in other countries (Okonkwo2021).

The limitations on the rights of the owner are essentially the rights of others to use the intellectual property without the owner's permission. With notable exceptions in patent law, these will generally have the effect of allowing other parties to use the intellectual property of an owner when the rights and limitations are first established, or when a particular dispute is settled, in return for some form of compensation to the owner. This compensation may be in the form of a royalty paid to the owner, or a fee payable to an organization that manages a particular scheme for the disposition of rights to use a certain intellectual property (Song et al.2021). Where the compensation is payable will depend on the agreement reached between the owner and the other party, and if there is a formal finding of use of the intellectual property without permission, it is likely to result in legal liability on the party that used the intellectual property to pay damages to the owner for the unauthorized use.

The legal rights of an owner of a registered intellectual property are effectively the limitations on the rights of others. These rights and limitations vary between the different types of intellectual property. In general, as the development and commercialization of intellectual property occurs, the legal rights of the owner will increase. The reason for this is that the more successful an owner is in developing and commercializing their intellectual property, the more likely it is that others will want to use it. This in turn increases the likelihood of a conflict arising between the owner and another party over the use of the intellectual property. Thus, the rights of an owner of an intellectual property are normally structured in a way that gives the owner the maximum amount of protection for their intellectual property when they need it most.

### 3.3. Enforcement Mechanisms

There are two routes available to the owners of registered patents who have a grievance against an infringer. The first of these is for the patent owner to apply to the Commissioner of the Patents to institute proceedings against the infringer. If the Commissioner is satisfied that the patent has been infringed, he will issue a certificate to that effect and the patentee has two options. He can institute legal proceedings in the High

Court to recover damages suffered as a result of the infringement or claim an account of the profits made by the infringer, which are payable to the patentee by section 122(1) of the Patent Act. The courts have interpreted this provision to make an account of profits an equitable remedy that is only available if the patentee can prove that he has suffered damage due to that he is unable to quantify or that the damages are disproportionately small. The primary consideration for the courts in awarding damages is the actual losses suffered by the patentee as a result of the infringement and these will usually be assessed about the profits made by the infringer. If the Commissioner decides to revoke his certificate it will not affect any damages already paid to the patentee. Any certificate or decision made by the Commissioner is subject to an appeal to the Federal Court by any interested party within 21 days of the date of the decision (Samuelson & Gergen, 2020).

#### IV. INTELLECTUAL PROPERTY OWNERSHIP

At common law, the default rule is that the creator or creators of an intangible work are the initial owners of the copyright or rights in any resulting tangible expression. Similarly, inventor-employees are presumed to own patent rights in their inventions. However, there are several legal doctrines and contractual provisions that can operate to assign IP ownership rights from the default owner to a second person or a company (Olson, 2020). An attorney advising a company on how to best secure and exploit rights in employee inventions will thus in many cases be an exercise in reversing or avoiding the default rule. An attorney will also advise clients involved in joint venture or R&D projects with other companies or third-party contributors on how to best structure the project to avoid future disputes over joint ownership and each party's freedom to exploit any resulting IP.

Intellectual property ownership concerns are at heart questions of who possesses the legal and equitable rights in intangible creations. The allocation of IP ownership rights may determine an owner's ability to commercially develop IP, cooperate with others in R&D or IP exploitation ventures, and leverage IP assets in securing debt or equity financing. IP ownership issues are especially critical for technology and early-stage companies, in which corporate partnering and financing relationships are often essential for product development and market success. These companies often must exploit IP rights and assets created by their

founders, by employees, and by various third-party contributors. An understanding of the default rules and the available contractual options for allocating IP ownership rights is essential in counseling these companies on how to structure their internal and external relationships in ways that will further their business objectives (Conrad, 2022).

##### 4.1. Employee Inventions and Assignments

Employees will often engage in activities that are beyond the scope of their normal duties, and it is common for an employer to assume that any invention made by that employee in the same field as his employment will belong to the employer. This is not necessarily the case, as was demonstrated in the House of Lords decision in *Aerotel Ltd v Telco Holdings Ltd* (2007), where it was held that where an employee has a wide-ranging job description, the invention must still be made in the course of normal duties to satisfy the requirements of Section 3(2) of the 1977 Act. So with the globalization of industry and new ways of working such as telecommuting, the traditional notions of time and place of work are increasingly less relevant (Ahmad et al. 2022). Today's intellectual workers may work from various locations and make use of technology to perform tasks beyond those originally contemplated when the employment contract was formed. This again can lead to uncertainty as to when an invention is made in the course of employment and is an area in need of further guidance from the courts.

The significance of this provision is that unless an invention is made by an employee during his normal duties, or it has been made as a result of a specific requirement by the employer to improve a part of his business, the employee will retain ownership of the invention. This provision has been the subject of much academic debate and has caused confusion among employers. The fact that the invention must be made in the course of employment and also satisfy a requirements test means that it is not enough to show that the employee was simply doing something for the employer when the invention was made.

1. It was made in the course of employment and the nature of his duties at the time, or 2. It was made in the field in which he was employed.

The employer must be aware that intellectual property developed by an employee may be owned by the employee, and not the employer. The general rule stipulated in Section 11(2) of the Patents Act 1977 is that

an invention made by an employee will belong to the employer if:

#### 4.2. Joint Ownership

Joint ownership can also be brought to an end by a sale agreement, where ownership is transferred to one party or a third-party buyer.

Joint ownership can lead to a deadlock in decision-making about the future development and commercialization of an invention. This can occur when the joint owners cannot agree on whether to pursue an expensive and risky research and development program, license the rights to a third party, or abandon the invention. Any joint owner can individually prevent the others from taking steps to commercialize the invention by filing lawsuits to stop alleged infringement of the patent. In such situations, the party that seeks to commercialize the invention may take legal action to force the sale of the IP or a license to the patent, followed by the allocation of the proceeds between the joint owners.

Under US law, joint ownership of patent rights automatically vests joint owners with an undivided, equal share in the IP, regardless of funding, facility, or personnel used to create the patented subject matter. Joint inventors may exploit the invention as they see fit, provided they share any resulting profits. This is not always an ideal situation for organizations, particularly those in the medical sciences or utilizing publicly funded research (Sterzi, 2021).

Joint ownership is a common occurrence in the control of intellectual property. This issue can arise when two separate business entities collaborate to develop new IPs or when an organization commissions a third party to produce IP. Joint ownership can also inadvertently occur when an organization has failed to document its policy on employee inventions and assignments. This can lead to disputes about the ownership and use of IP created in the course of employment (whether or not during working hours or using the employer's resources).

#### 4.3. Licensing and Royalties

Corporate IP owners can license IP rights to other entities for many reasons. Sometimes an owner will sell most of its assets and will license back the right to use the IP in question. In other cases, a patent owner may lack the resources to commercially develop a non-core technology and may be better off licensing the patent rights to another entity in exchange for royalty

payments. A trademark owner may license the use of a mark in a foreign territory where the owner has no interest in directly exploiting the mark. In any case, the primary purpose of an IP license is to clearly define the terms under which the licensee can utilize the IP in question. This is normally accomplished through a written agreement, the formality of which will depend on the nature of the underlying deal. For exclusive licenses or complex agreements, the agreement will often be quite long and detailed. For more straightforward licensing agreements, the parties may simply exchange a two or three-page agreement outlining the pertinent terms. In the case of licenses with insolvent or potential judgment-proof infringers, the licensing of IP rights may be accomplished through the mechanism of a prejudgment attachment or a post-judgment execution against the infringer's assets. A thorough discussion of these remedies is beyond the scope of this article, however. Royalty rate structures can vary widely. Often a licensee will pay a royalty based on a percentage of the revenue earned from products or services that utilize the licensed IP. In other cases, a licensee may pay a fixed sum for the right to utilize the IP, regardless of how much revenue is earned from its use. Once again, the specific terms of a license agreement will depend on the nature of the underlying deal. A royalty agreement is subject to many of the same contract interpretation issues discussed above in the contract section (Bamakan et al., 2022). This is especially the case concerning the issue of whether a licensee is required to pay royalties on products or services that are outside the scope of the licensed rights. In the event of a dispute, a court will examine the license agreement in question and apply the normal rules of contract interpretation to determine the parties' intent. Assuming a licensor has an unambiguous agreement, some IP licensing disputes can be resolved through special summary procedures for declaratory judgment actions, which enable a licensor to more quickly and less expensively establish a licensee's infringing activity.

## V. INTELLECTUAL PROPERTY INFRINGEMENT

An assessment of intellectual property and a comparison to competing intellectual properties is a safe method to implicitly identify infringements where no direct evidence can be found. If a corporation can compare elements of its intellectual property to the intellectual property of another and seek legal advice as to the

similarities, the corporation can avoid potential claims of reverse engineering or independent yet infringing production. Assessing intellectual property often results in advice to watch certain infringements and gather evidence until the potential benefit of stopping an infringement outweighs the risk of injury to the intellectual property. This method was employed by Polaroid Corporation when it rather passively observed the production of a competing product with similar technology, despite poor results in litigation (Wan & Jiming, 2021).

Intellectual property infringement, a violation of the rights of a patent, trademark, or copyright owner, is an obstacle that all corporations with intellectual property will face. When another infringes on an intellectual property, there are various methods of resolution: the identification of the infringement, the remedies to rectify the infringement, and possible defenses against the infringement claims. Identifying an infringement can sometimes be less than apparent. It is quite often that a corporation will discover an infringement by accident, by a review of another's intellectual property to assess if there is any possible risk of an infringement claim, or by an offered settlement to license, which is generally a result of another's concern for an unknowing infringement of the corporation's intellectual property.

### 5.1. Identifying Infringement

At its core, infringement of an intellectual property (IP) right is an unauthorized taking or usage of the right owner's intangible asset. The specific action that constitutes an infringement will vary depending on which IP right is in question. For example, infringement of a patent right is committed by making, using, selling, or offering to sell an invention claimed in a patent, without the permission of the patent holder. This is expressed in s60 (1) Patents Act 1977. Infringement of copyright is set out in s16 (1) of the Copyright, Designs, and Patents Act 1988 (CDPA), which states that a person infringes a copyright if, without the license of the copyright owner, he does, or authorizes another to do, any of the restricted acts. These 'restricted acts' can include copying the work or issuing it to the public. Trademark infringement occurs when a trademark is applied to identical or similar goods and/or services to those it is registered for, and there is a likelihood of confusion on the part of the public. This is set out in s10 of the Trade Marks Act 1994. These are just a few examples, and all types of IP infringement will have more

detailed definitions. High-profile litigation involving IP rights such as the recent Samsung v Apple patent dispute often raises complex issues of law when identifying infringement, and legal advice is usually required (Schwartz & Giroud, 2020).

When ownership returned to the nation-states, the critical concept of 'war-making' power also shifted, and with it the strategies for preserving advantages in other areas. In many cases, interactions between IP and changes to state power are not clear because they are not overt. However, history has shown that changes in IP laws are usually made because it is in the interests of the state with the most power at the time (Olatunji, 2020). An example of this is when Henry VIII granted the world's first-ever patent to John of Utynam in 1449. John was given a 20-year monopoly to import 'certain new methods of making iron and steel' into England. At the time, England was at the beginning of an arms race with its European neighbors and was not self-sufficient in iron and steel. This patent granted by Henry VIII was critical in kick-starting England's industrial revolution, as it provided the necessary impetus and protection needed for innovation at a time in which national power was a key driver of technological advancement.

### 5.2. Remedies and Damages

An account of profits is a remedy by which the defendant is required to pay the plaintiff the amount of money representing the profits earned by the defendant as a result of the infringement. It is an equitable remedy and the award is at the almost complete discretion of the court. This method of assessing damages appears to be increasingly popular, certainly in the English courts, given the difficulty of proving a calculable loss and because it is felt that the wrongdoer should not be allowed to benefit from his wrong. In Seymour-Smith v Joynes, the court refused to award an account of profits because it was.

A damages award is intended to compensate the plaintiff for the wrong suffered. The general rule is that damages are compensatory and are measured by reference to the actual loss sustained by the plaintiff as a result of the defendant's infringement. Where the plaintiff has used the right as a springboard to some other advantage, that too can be taken into account in assessing the damages. In certain circumstances, it may be difficult for the plaintiff to prove a calculable loss, yet it is clear that the defendant has gained financially from the infringement. In such cases, the court may infer that the profits have been made at the expense of the plaintiff and award



damages based on an account of profits, even though the plaintiff has not so elected. This may occur, for example, in patent cases, where it is easier for a competitor to copy an invention than to prove a new idea without having an immediate impact on its financial position (Hofmann and Raue2024).

The party that can establish infringement is entitled to an injunction to prevent the wrongful use. The availability of injunctive relief has been the cornerstone of the IP regimes (Maronero and Bichlmayr2024). In addition, a successful plaintiff may choose between an award of damages or an account of profits made by the wrongdoer. Though the plaintiff's choice between these two remedies is limited by case law and statutory provisions for the different IP rights, the choices available and the factors determining the choice are common to all rights.

### 5.3. Defenses against Infringement Claims

The bulk of patent, trademark, copyright, and trade secret infringement litigation are disputes over whether the defendant's product or process is covered by the claims of the protected right. Literal infringement of a patent claim requires that every limitation of the claim appear in the accused product or process. If even one claim limitation is absent from the accused device, there is no literal infringement. Similarly, in copyright law, if the defendant can show that the elements allegedly infringed are not protected expression, or that the protected and unprotected elements are not substantially similar, there is no infringement. A showing that there is no substantial similarity between the ideas in the copyrighted work and the accused work is also a defense against infringement. If the defendant can show that it did not have access to the protected work, copying. Step 1: Determine whether the defendant's product or process is covered by the claims of the protected intellectual property right. Step 2: Determine whether the protected elements of the intellectual property right were used in a closely similar way by the defendant. Step 3: Determine whether the defendant had access to the protected intellectual property. Step 4: Compare protected and accused works to determine whether there is substantial similarity between them (Lim2022).

## VI. INTERNATIONAL INTELLECTUAL PROPERTY LAWS

International intellectual property laws vary greatly. Multi-national corporations have historically attempted to attain some uniformity to these laws. The World Intellectual Property Organization (WIPO) was created to promote the protection of IP through international treaties. The most common method for acquiring IP rights abroad is through the use of these international treaties. The treaties provide a central system for filing and protection processes on a per-country basis. They also attempt to standardize the laws regarding the varying forms of IP, i.e. patents, trademarks, copyrights, etc., and generally advocate more protection for IP rights. One particularly successful area in international law has been the agreement on trade-related aspects of IP rights (TRIPs) by the member states of the World Trade Organization. TRIPs have been very effective in helping to protect IP in all forms and have set dispute resolution procedures. However, for the most part, international law is still limited in the amount of control it has over member countries. WIPO treaties and TRIPs are usually still required to be emulated by individual domestic laws. Adherence to the stricter standards is still and will continue to be a work in progress for many countries. Due to varying levels of economic development and political stability, a conducive environment for long-term investment in the development and enforcement of IP rights is not constant across all countries (Tenni et al.2023). This sometimes creates a risk for IP rights holders who may encounter alterations in laws or outright expropriation of their rights. High uncertainty and transaction costs in protecting rights in some countries can sometimes negate the potential benefits to be gained. In recent years, there has been increasing concern regarding disputes and litigation between companies from different countries. There is an assumption that one company will infringe the rights of another in an attempt to disrupt its market or will become a victim of opportunistic litigation. The complexities of such cases in a global environment will require detailed study in the future.

### 6.1. WIPO and International Treaties

The World Intellectual Property Organisation (WIPO) is an agency of the United Nations that administers several treaties that make up the international framework for IP laws. The organization was created to, amongst other things, "promote the protection of intellectual property throughout the world." The larger and more comprehensive of the WIPO treaties is the Agreement on

Trade-Related Aspects of Intellectual Property (TRIPS), which includes most of the well-publicized forms of IP such as patents, copyright, and trademarks within its scope. TRIPS is effectively a treaty to establish a common minimum standard of IP protection to be adopted by each member country. The importance of WIPO treaties in the context of the current dissertation is in their serving as a large influence over the decision to adopt the various standards of IP protection into the national laws of member countries. The influence of WIPO treaties within international IP law can be demonstrated by how the TRIPS agreement requires member countries to provide copyright protection in the form of the Berne Convention and also requires trademark protection in the form of the Paris Convention. These are treaties created by WIPO which have had a profound and lasting effect. Berne itself is responsible for the increase in protection and the instigation of a shift in national copyright laws towards a more unified model within Europe. WIPO does, however, provide flexibility in terms of adopting their treaties, and member states are free to determine methods of implementation, providing that the result is in harmony with the treaty itself. This flexible adoption is done so as not to disrupt trade by imposing immediate drastic changes to national laws but is still geared towards the long-term establishment of a unified international system for IP protection (Gagliani, 2021).

### 6.2. Cross-Border Protection and Enforcement

Protecting intellectual property in a world of borders and differing laws is an effective way to avoid headaches. Material goods can be protected by keeping them within the borders of a country, when they are within that country's jurisdictional boundaries; they are subject to that country's laws. Intellectual property is inherently mobile and is therefore subject to the laws of many different countries. In the absence of an agreed-upon set of worldwide intellectual property laws, the rights of the owner are limited to each different sovereign state. International protection of intellectual property rights involves finding which national laws are applicable and enforcing these rights when the laws are violated. The most challenging aspect of international intellectual property law is the lack of clearly defined rights that may be enforced the same way in every country. Owned intellectual property may be a trade secret, a patent, a copyright, or a trademark, each of these rights is protected differently across different countries. Traditionally, intellectual property owners have turned to keeping their material goods inside the jurisdiction of

a single state; a patent may only be valid within the boundaries of the issuing nation (Kreshpaj et al.2020). Enforcement of intellectual property rights takes place through civil litigation and or criminal prosecution. If an intellectual property right is violated in the course of a criminal act, then the parties involved may be referred to a prosecutor, and state-funded enforcement may occur. This is quite rare and most intellectual property cases are settled through civil litigation. Requirements for civil litigation and the protection of rights through legal process are astoundingly varied in different countries and the difficulties encountered by those seeking to enforce their rights are often a reason for simply giving up.

### 6.3. Challenges and Considerations in Global Markets

Looking to the future, global markets will become increasingly difficult to define as the reliance on the Internet and e-commerce will continue to grow. These concepts render it difficult to apply traditional location-based concepts to define where an infringement has occurred. As technology becomes cheaper and markets become more competitive, small to medium-sized enterprises (SMEs) will need to globalize to survive. However, at present, only the larger companies will have the resources to effectively seek international IP protection. To maintain a steadied market economy, it is important to encourage competition, particularly from smaller companies with great potential (Belk et al., 2022). This is because such companies are often a hotbed for innovation and will often rely on their Intellectual Property Rights to obtain funding. Therefore, it becomes apparent that future international Intellectual Property laws will need to take into account global market changes and make provisions to ensure that the system remains effective for all types of markets to maintain a sustainable economy.

These examples represent situations where different deadlines in various countries can cause difficulty. This is because, in each country, the date from which the patent term is calculated can differ. For some, it might be from the filing date, and it might be from the date of grant. In that case, for only some patent administrations, mainly those in Europe, it will be the date of publication as the designated Republic for European Patent has not been able to be selected for all standard national route patents and it is known the date of publication will not be the historic date. These problems can only be solved by a unified system with a fixed term, which means it is

unlikely to happen under the current Treaties and Agreements (Ninh et al.2024).

## VII. INTELLECTUAL PROPERTY AND CONTRACT LAW

When dealing with intellectual property, the most common method of transferring rights is through a contract. Contract law provides the legal means for transferring rights to another, or for permitting another to use rights for a specific purpose. Most IP transactions are effectuated through two kinds of contracts: an agreement to transfer ownership of the IP right and a license. The second kind of contract usually involves an assignment of the IP right. An assignment occurs when ownership of an IP right (or it's agreed that such ownership will pass in the future) is transferred from the owner to the assignee. This involves the process of the owner agreeing to assign, which usually occurs through a form of contract, followed by a subsequent act of assignment. The act of assignment will often involve some kind of registration, as is required for the assignment of trademark rights. If an assignment is not registered with the patent or trademark office, the assignee may have difficulty proving their title to the right, which can cause problems if a dispute arises or if the right is to be licensed or assigned again in the future. A license is the grant of permission for the licensee to do something with the IP right that would usually exclusively be within the rights of the owner. An exclusive license is a form of assignment in that it involves transferring the rights to another, however, an exclusive license will not necessarily involve a transfer of the entire bundle of rights that constitutes the relevant IP right. The most extreme form of license is an assignment in gross, where the assignor transfers the entire right to someone else, but agrees that if the assignee later decides to transfer the right back, it will be assigned back to the original owner. This is often used as a method of transferring the right for a certain period while ensuring that the original owner will be able to exploit the right again in the future (Ricolfi, 2020).

### 7.1. Licensing Agreements

Licensing is arguably the most popular avenue for getting innovative products and services to market. The range of IP licensing is broad, including trademark and know-how licensing through to patent and copyright licensing. This entry deals primarily with patent licensing, for when a patent is licensed it can be a very powerful

tool in income generation. Patent licensing can take many forms including technology transfer, joint ventures, development, and royalty agreements. An important first step is to determine the value of the IP to be licensed, as this will affect the terms of the license and the royalty payments. The IP should be valued in the industry it is in, as the same IP may have different values in different industries. The core of any license agreement will specify the terms and conditions of the license and the rights and duties of both the licensor and the licensee (Henkel, 2022). Problems can arise when the terms and conditions of a license are not specified and a dispute arises over what the parties intended. In this case, the courts may imply terms into a license agreement that the parties did not intend. It is therefore important to specifically state the terms and conditions of the license to avoid any future dispute. Another issue is to determine the liability of a patent. A license agreement will normally include an indemnity clause and state the liability limits, capping the licensor's liability to the amount of royalty paid during a specific period. This clause can be important if a licensee becomes involved in a patent infringement dispute with a third party. The licensor will want to clarify his liability to the licensee and potentially limit it.

### 7.2. Non-Disclosure Agreements

The enforceability of NDAs is important to the IP owner concerned with protecting disclosed information. The agreement must be sufficient to create a legal obligation. The most basic requirement is that the party accused of breaching the NDA knew the agreement's terms. This issue can become complex when employees or other representatives are involved in the disclosure of information. A more difficult issue is determining whether there has been a breach of an obligation to keep information confidential. This often requires litigation, and the IP owner will need to show that the information disclosed is, in fact, confidential and that there has been access to or disclosure of that information to third parties. If the NDA is a provision in a larger agreement, the remedies for breach will depend on the interpretation of the agreement's severability clause. In any case, the failure to keep information confidential may have a lasting effect on the relationship between the parties, as well as the IP owner's ability to license more of its IP in the future (Wang, 2021).

A contract for the establishment of a licensing agreement may consist of a variety of sub-agreements,

provisions, schedules, and ancillary documents, such as partnership agreements, statements of work, licenses for specific patents, and non-disclosure agreements. It is important to understand the effects the licensing agreement may have on any of these other IP-related contracts. For this section, we broadly define a non-disclosure agreement ("NDA") as an agreement to share information with another party while restricting access to or sharing that information with third parties. An NDA may be an independent agreement or it may be a provision in a larger agreement, such as a joint development or evaluation agreement. NDAs are used to facilitate various types of licensing agreements, such as the transfer of know-how, providing access to proprietary data, or the evaluation of a potential business relationship.

### 7.3. Assignment and Transfer of Intellectual Property Rights

Often a contract may have provision to assign IP as part of a wider commercial obligation. Failure to distinguish between this type of agreement and IP assignment can have implications, particularly in the area of insolvency. Under such a provision in an English law contract, the law implies a license to use IP rights only, regardless of whether it states assignment. Failing any specific provisions, the license would be as exclusive or non-exclusive as is necessary for the purpose and take effect in the same way as an express agreement. This is in contrast to an assignment that takes effect at the time the assign acts in a way that is inconsistent with the owner's continued interest in the rights but is subject to an equitable rule that any rights are unable to the assign's creditors take effect when it interferes with priority for a similar interest acquired earlier by another person (s.593-97 CDA 1988) (Ram and Gupta2023).

Transmission of IP occurs when an owner of IP rights dies and his rights pass to his representative who administers his estate. Usually, transmission is subject to the law of inheritance and the regulations that apply to particular rights. Transmission occurs automatically and is registered about the death (patent.gov.uk).

An assignment of IP occurs when the owner of the rights (assignor) transfers his ownership to another person (assignee) by agreement. An assignment may be the transfer of a bundle of rights, and the assignor can place whatever conditions he chooses on the transfer. Generally, assignments are in writing and signed by the assignor (Guadamuz, 2021).

Intellectual property rights can be transferred through voluntary action by the owner to third parties by various methods such as assignment, transmission, or licensing. Although often IP rights are transferred through commercial transactions, it is necessary to understand the implications of agreements that do not have a commercial basis such as employment contracts and government funding agreements (WIPO.int).

## VIII. INTELLECTUAL PROPERTY AND COMPETITION LAW

Generally speaking, the most serious antitrust concerns that have arisen about intellectual property rights have involved the abuse of a dominant position. An example of this could be predatory pricing by a dominant undertaking in say the computer software industry, who drastically cuts the price of his product to drive competitors out of the market and thus reduce overall competition. This conduct is a breach of Article 102 TFEU and/or the Chapter II prohibition in the UK. Step one in any inquiry relating to the abuse of an intellectual property right is to establish whether or not the defendant is in fact in a dominant position. Said defendant will only be assessed under stricter antitrust provisions if it can be shown that the alleged abuses are directly related to that dominant position as per Hoffman La Roche v Commission (Bhadra, 2022). An affirmative answer brings about further issues, as in some instances it may be that the terms 'abuse' and 'intellectual property right' do not sit comfortably with practitioners who view competition law as being concerned with protecting consumer welfare through the promotion of economic efficiency as opposed to aiding competitors.

However, despite the shared goals of both bodies of law, IP and competition law have on occasion clashed. This is due to the recognition that whilst intellectual property rights are a form of ownership and therefore in one sense anticompetitive in that they allow the owner to exclude others from exploiting the same subject matter, in another sense the registration of intellectual property rights is a pro-competitive act in that it encourages innovation.

A fundamental purpose of the law of intellectual property is to promote innovation and thereby enhance consumer welfare. Competition law generally shares this same goal, by encouraging the development or maintenance of effective competition between suppliers in a market, to satisfy the needs of consumers. It

achieves this by regulating anti-competitive conduct as well as potentially anticompetitive market structures. Intellectual property and competition law share a perhaps surprising number of common features. For example, the law of patents was initially concerned with the promotion of industry, and although the scope of competition law has evolved, there is a particular focus on certain types of intellectual property in some of the newer and emerging sectors, for example, standard essential patents in the mobile telecommunications industry (Grimaldi et al., 2021).

### 8.1. Antitrust Considerations

Intellectual property (IP) rights are designed to give exclusive rights to their owners. This exclusivity may run counter to competition law in some jurisdictions. This conflict of laws in IP and antitrust has generated significant case law and literature. Parallel to the increase in the market value of IP and the growth in IP litigation has been the growing awareness of the potential anticompetitive consequences of certain exercises of IP rights. Under many circumstances, the holder of an IP right may be subject to scrutiny under antitrust law for simply doing what the IP laws give the right to do. Price fixing and market allocations are considered per se violations of competition law in most jurisdictions. However, concerning IP rights, there may be lawful price fixing by a patent pool or joint venture to standardize a technology. And there may be market allocations deemed essential to protect the incentive to innovate by ensuring a return on the development of new technology. When European competition law is applied to intellectual property rights, the particular account is taken of the risk of market distortion. The precise definition of this assessment changes from time to time but it is generally the anticompetitive behavior of undertakings to abuse a dominant position in a market. This has led to a high degree of judicial activism by the European Commission and the law in this area is often considered to be in a state of flux. Abuse of a dominant position is a principle that has been developed through case law and it has been codified into the EU competition law in Art 82 EC. In the United States, the principles of antitrust and IP are largely applied by the standards set out in a series of cases. IP rights are generally considered to be an exception to the antitrust laws. This has been held to mean that an IP right confers immunity from actions in antitrust so long as the actions alleged to be anticompetitive are inherent in the rights obtained. It should not be overlooked that antitrust litigation is a

significant risk for companies with IP rights. The potential liability for actions such as abuse of a dominant position can lead to large fines and damages awards. In some cases, breaches of competition law in IP have led to criminal prosecutions. An example of such a risk area for IP is price fixing (Chambers and Berger-Walliser 2021). This can be seen in the recent EU case involving Rambus Inc. for what was held to be a 'comprehensive strategy to encourage industry standards and prevent competitive technologies from capturing any significant market share' and an abuse of dominant market position by interrupting the price setting mechanism (see *Infinion v. Commission*). The threat of costly litigation combined with liability to large damages awards means that risk management of antitrust and IP is a key issue for many companies.

### 8.2. Patent Pools and Standard Essential Patents

The objective of this essay has been to consider the protection and exploitation of intellectual property rights in the context of developing and commercializing IP in the global market. The essay has examined the various forms of intellectual property, discussing the advantages and disadvantages of each in the process of technology development. The focus then shifted to the IP development and acquisition process, discussing a variety of contractual techniques for IP transfers. Throughout, the emphasis has been on the knowledge of intellectual property to avoid problems and disputes, both in preventing infringement of the rights of others and in maximizing the value obtained from the technology. This has led us to consider legal issues in technology trading, including merger and technology acquisition, and finally into the theme of international IP and comparative IP law. This essay has claimed that the informed application of legal knowledge is crucial to creating value from IP and technology. Nowhere is this more true than in the area of standard essential patents and patent pools. For the owner of a SEP or a potential licensee, there are critical decisions to be made and potentially much to gain or lose (Kop 2021).

### 8.3. Intellectual Property Misuse

The law on misuse remains a patchwork based upon inconsistent judicial decisions, creating uncertainty concerning what constitutes misuse and the standard for liability. Misuse traditionally has been considered an equitable defense to an infringement action, seeking denial of injunctive relief or dismissal of the action based upon an unclean hands defense. The Supreme Court first

addressed the misuse defense in the 1917 decision in *Henry v. A.B. Dick Co.* The case involved a tying arrangement in which the printer A.B. Dick conditioned sales of patented mimeograph machines upon a requirement that customers purchase unpatented stencil paper exclusively from A.B. Dick. Writing for a unanimous Court, Justice Brandeis held that the conditioning of patented goods to unpatented goods based upon sale as a unit at a single price constituted an illegal extension of the patent and therefore price fixing in violation of the Sherman Act. The tying agreement was an act of patent misuse and operated as a forfeiture of patent rights. Although remanded and ultimately decided against the buyer on other grounds, *Henry* is significant for its mongrel analysis, combining patent law and antitrust concepts, and its result applied patent misuse doctrine as an application of antitrust law to patent licensing practices. The holding that anticompetitive patent and copyright licensing agreements conflict with federal antitrust policy was later codified by Congress in the IP and Antitrust Enforcement Guidelines. *Brand Name Pharmaceuticals Association v. Watkins* involved a federal antitrust suit brought by the FTC challenging restrictions of parallel trade and the resale of pharmaceuticals outside the price discrimination scheme in a regulated market for human and veterinary medications. The Eleventh Circuit reversed the grant of a preliminary injunction and held that the FTC must consider whether restricting parallel trade implicates patent policy and monopoly pricing privilege derived from the supra-competitive prices. Because an adverse effect on public health would result from the possible forced repurchase of drugs to be sold at lower prices abroad, a non-immunized anti-competitive activity under Clayton Act section 7, the FDA must also consider how such pricing restrictions conflict with FDA regulation and safety and efficacy considerations in violation of the Food Drug and Cosmetics Act. With these complex regulatory issues pending, it is uncertain what effect parallel trade restrictions will have on public health, competition, and antitrust and the case law regarding the antitrust legality thereof (Holman, 2023).

## **IX. INTELLECTUAL PROPERTY AND TECHNOLOGY TRANSFER**

Patent-protected information must be published and is less valuable as a trade secret. However, patent-

protected information can be highly valuable in negotiations for licensing to or from other firms and can also be valuable in attracting investment partners. The decision of how to protect it whether to use it in negotiations with outside firms, and how to make a market out of the patent itself are strategic considerations that must be well understood by all relevant business and legal staff in the firm (Cao et al.2020). An increasing number of firms seek to leverage their own or others' intellectual property in negotiations with outside firms, suppliers, and customers. This form of intellectual property licensing, often referred to as non-merchandising licensing, is generally a license for a patented technology or a trademark for use in a specific field or industry. This is as opposed to merchandising licensing, which involves licensing intellectual property for use in the creation and sale of another product.

Intellectual property and technology transfer have become legal and business issues of considerable significance for corporations. The varying forms of intellectual property created in the course of collaborative research and development have prompted new strategies for technology transfer. For example, information that is revealed in the course of research may be well suited for a trade secret, but to protect it, the firm may be best served by keeping the information "in-house."

### **9.1. Collaborative Research and Development**

Collaborative research has been the subject of relatively intense sociological scrutiny going back some 50 years. Scholars have produced richly detailed "ethnographies" of various laboratory microcosms in a quite eclectic mix of public and private sectors. A large empirical literature on the nature and effects of military research has informed the drafting of the complex array of laws and regulations that supposedly govern the allocation of IP rights in the large "labs" of the Defense establishment. The industrial sector has witnessed many collaborative research fiascos and a good number of legal disputes, though it is safe to say that most law professors are quite unfamiliar with this body of anecdotal evidence. Finally, likely, these days a good deal of science that once took place inside government or industry labs is now being "outsourced" to university researchers. This suggests that studies of collaborative contract research are one way in which IP law can benefit from revisiting in some detail a particular mode of R&D.

The transformation is usually characterized as a shift from "independent" to "network" and/or "systems-based" R&D. The general idea is that in many industries, the firms that were once considered to be independent are now more accurately understood as being part of a web of strategic alliances of various sorts and that the R&D done by these firms is less linear and more interdependent. A research taxonomy based on the semiconductor industry suggested a four-fold increase in "systems-based" R&D between 1980 and 1997 (from 20% to 80%). The various forms and implications of this shift toward more interdependent R&D are not well understood at present, either by social scientists or by legal academics, and their occasionally simplistic accounts are unlikely to generate much real-world prescriptive value. This book offers a detailed examination of one recently prominent mode of inter-firm R&D—collaborative contractual research. An examination of industry-specific R&D patterns and a consideration of how best to "regulate" IP related to various sorts of collaborative research should await other projects. However, analysis of the high and low points of specific transactions can yield immediate useful data points (Davydov et al.2023).

Perception of an emerging high-tech sector has led to a transformation of the research enterprises in various industries, with potentially significant implications for IP law.

The primary goal of this book is to explore the development and commercialization of IP from the perspective of lawyering for technology. A major theme is that the well-worn dichotomy between analysis and synthesis of law is particularly inapposite when the law is called upon to regulate activities deemed to be "high-tech."

## 9.2. Licensing and Commercialization Strategies

A startup company with intentions of staying independent will likely be involved in licensing or sublicensing the intellectual property. The parent company may attempt to develop and market the intellectual property on its own, or it may simply lease out the rights to another company. This can be a very flexible strategy, and it allows the company to use the intellectual property to secure financing. However, there is always the risk that the parent company will not fully exploit the intellectual property. If the leasing company determines that this is the case, it can sue for breach of contract and potentially increase its rights to the

intellectual property. Sublicensees will want to know the scope of the rights being offered to them, and they will want to know that the licensor has the authority to make such an agreement. Any incurred damage or loss due to these expectations not being met can be difficult to measure, but it will usually result in hefty consequential damages (Matsumoto et al., 2021).

Licensing is a legal agreement through which a licensee leases the rights to a legally protected piece of intellectual property from a licensor. With the increase in partnering between firms and with a large increase in spin-outs and startups, there is a growing interest in entrepreneurship. This has led to a popular strategy of spinning out a company's technology base into a new company and then licensing the technology back to the parent company. This technology licensing has the allure of low financial and management risk; however, the less established company must realize that it is giving up potentially large payoffs in the distant future. This type of delayed profitability may not be in the best interest of the shareholders.

## 9.3. University-Industry Partnerships

The collaborative activity between universities and industry often takes the form of research contracts in which the industry sponsors research in a particular area in exchange for ownership of the results. Collaborative research of this sort raises several issues concerning the allocation of rights in the results and the terms under which those rights are transferred. Often, the industry seeks to secure ownership of any intellectual property created in the course of the research. This may conflict with the academic goals of university researchers, who are often primarily interested in publishing the results for the benefit of the research community at large. In some cases, the researchers may have already obtained research grants from public funding agencies to investigate the same or closely related topics. Those grants may come with certain restrictions concerning the dissemination of research results and the ownership of any resulting intellectual property. It will be important to clarify the respective rights and obligations of the parties regarding publication, intellectual property ownership, and the terms and conditions for licensing any resulting intellectual property (O'Dwyer et al., 2023). This should also include an agreement about the circumstances under which research results can be transferred from the university to the industry sponsor. Often such contracts anticipate the formation of a joint venture or

establishment of a start-up company to further develop and exploit the research results. In those cases, the research results may be transferred before they have been reduced to practice in the form of patentable subject matter. A well-defined agreement at this stage can help to prevent later disputes regarding ownership and rights in the research results.

## **X. INTELLECTUAL PROPERTY DUE DILIGENCE**

Evaluate the significance of intellectual property (IP) as well as the management of media in organizations to attain a competitive edge in the corporate environment. A business has to be vigilant in preserving and maintaining its IP rights and avoiding the infringement of others' IP rights. An accidental or deliberate IP violation by a company may result in heavy financial penalties and damage to the brand as well as the company's reputation. Therefore, a company with a strong IP rights portfolio has to place more concern on managing IP rights in the corporate world or organization, including any joint ventures and collaborations with other parties. Due diligence on IP rights is a necessary part of any corporate exercise to identify and minimize risks and maximize the value of the transaction or deal. Failure to do IP due diligence searching can lead to unidentified risks and potential legal problems in the future. IP due diligence works. (Gaikwad and Dhokare2020)

### **10.1. Assessing IP Assets and Risks**

An intellectual property asset and risk assessment is the first step in ascertaining a company's IP status. An IP assessment seeks to determine what IP assets are owned or licensed by the company, the value of these assets, and the potential risks that may affect the ownership or validity of these assets. Determining the company's IP assets includes identifying all patents, trademarks, copyright material, design rights, trade secrets, and any other proprietary information available to the company. These assets must be documented, and their current status recorded. An IP risk assessment considers the potential risks that may affect the ownership, validity, enforceability, or freedom to operate of an IP asset. This will often involve identifying any current or threatened infringement of the company's IP, activities that may compromise the IP rights, the value of the IP, and any developments that may affect the value of the IP. An IP risk assessment will give a company an understanding of where its IP assets are most vulnerable so that resources may be allocated

to best protect them. An IP assessment will involve internal and external investigations. Internal investigations will require input from all areas of the business to ensure that all IP assets and potential risks are identified. The involvement of a company's legal and R&D departments is essential. External investigations may involve preliminary searches from IP offices and search engines to determine publicly available information that may affect IP assets and risks. Once an ID of IP assets and risks has been made, the information must be organized and evaluated to make informed decisions on a plan of action (Sterzi et al.2021). The main objective of an IP assessment is to equip a company with the necessary information to make informed decisions that will affect the status of its IP. By identifying the significance and value of various IP assets, a company may determine how its resources may be best allocated to protect and promote these assets. An understanding of the potential risks that may affect these IP assets will allow a company to implement preventative measures to mitigate these risks. In summary, it is essential for a company to manage its IP effectively, and an IP assessment is an important tool that will guide a company to utilize its IP in a manner that best suits its business objectives.

### **10.2. IP Audits and Valuation**

To be effective, due diligence investigations in the IP area should be based on a clear understanding of the objectives the acquiring company is seeking to achieve. Inevitably, resources allocated to IP due diligence are finite. All too often, inadequate pre-deal analysis results in post-acquisition disputes as to whether key IP issues were missed during the due diligence phase. These disputes can be acrimonious and highly detrimental to the prosperity of the acquiring company. In some cases, it may be a legitimate tactic to "reverse engineer" from the deal to the type of investigations that the target may have been made aware of and to scan for evidence of any conclusions that were drawn. IP due diligence should also extend to an assessment of the target's IP-focused organization and culture, particularly where the acquisition target is an established or early-stage technology company (Kostas, 2022). An acquiring company may see the value of a "bolt-on" acquisition evaporate due to a mass exodus of key technical staff and employees, discouraged by changes to their employment circumstances and/or a failure to integrate with a new parent company.



### 10.3. IP Considerations in Mergers and Acquisitions

A company acquiring or merging with another must assess the target's IP portfolio to determine the value of its technology. The term "due diligence" is used to describe the investigating and appraising of a target company's IP assets. In terms of patents and know-how, the acquiring company must consider the validity and enforceability of the target's patents, the target's freedom to operate, and the costs involved in licensing IP from third parties. Any pending or potential infringement litigation or interference proceeding concerning the target company's technology will have a direct effect on its value. In some cases, the acquiring company will attempt to redesign around the target's technology to avoid infringement. This requires a cost-benefit analysis to determine whether the redesign will save money on future licensing and/or infringement litigation costs. The target's trademarks and copyrights also add significant value to the company. A trademark search will help uncover any risks involved in adopting the mark, and any potential copyright litigation can be costly. An acquiring company must also consider the effects that assuming ownership of the target's IP will have on its tax position. A cost segregation study can be used to maximize the tax benefits available from increased amortization and depreciation deductions (Kim et al., 2020).

## XI. EMERGING ISSUES IN INTELLECTUAL PROPERTY

The most undesirable outcome is a situation in which there are no changes to patent law and it is simply assumed that any AI invention is owned by the creator of the AI. This would lead to a disparity of ownership between the patents of human and AI inventions and may hinder development and investment in AI technology.

This issue may need to be something that is tackled at a global level, with possible amendment of the Agreement on Trade-Related Aspects of Intellectual Property Rights. An alternative solution would be the assigning of ownership of the patent to the person (or company) that owns the AI. This solution involves various legal and ethical issues about the right of the AI to be acknowledged as an inventor or its status as an employee (Bisoyi, 2022).

The concern with AI and IP rights is that if AI is capable of inventing, who should own the patent for the invention?

Under the patent law of every country, the right to a patent belongs to the inventor, which may in the case of AI-led inventions, raise issues of multiple ownership or the right of the AI to be recognized as an inventor. These issues have not been addressed by current patent law and it is unclear whether patent systems will adapt to allow inventions by non-humans.

Artificial intelligence or AI is intelligence displayed by machinery, in contrast with the natural intelligence (NI) displayed by humans and other animals. It is a critically important emerging technology that is expected to change the way the corporate world operates. AI has the potential to invent, with the global intellectual property system as perhaps the most important field that could be affected by such activity.

### 11.1. Artificial Intelligence and IP Rights

AI technologies are poised to transform and indeed replace human intellectual endeavors in a wide range of fields and create significant opportunities for the owners and developers of the technology. There are also a host of societal, ethical, and legal issues that AI is beginning to raise. In the IP space, it is often assumed that the intelligent products of the mind are and should remain the province of human beings. There are, however, no fundamental reasons in IP policy why AIs should not be able to create IP and indeed be the owners of IP rights. Currently, under the TRIPS agreement (art.2), there is no requirement that IP subject matter is of human origin, and within the various national laws, there are many instances (e.g., patents created by machines) where it is possible that IP rights could subsist in AI-created works. Despite the legal possibility, there are numerous practical problems. In the absence of legal personality, any rights would likely vest in the owner or developer of the AI. The patent laws tend to require a human inventor, and it is unlikely that an AI could be an "inventor" for the Patents Acts or that an owner could show title to a patent as a "true and first inventor" (Motari et al.2021). Copyright in literary works requires an author who is a "qualified person", and the condition of being "of human origin" still applies in the Berne convention, so it is unlikely there could be copyright in many AI-generated works. This ability to avoid liability under more stringent rules for the works of human beings may lead to a "race to the bottom" in the substitution of AI-created works for human works to escape regulation and cost. This could ultimately lead to a devaluation of human creative talent and damage cultural heritage.

### 11.2. Digital Content and Copyright Challenges

In recent years, there has been a meteoric rise in digital content and a movement towards the dissemination of work via digital means rather than traditional paper, impacting the way copyright laws are implemented and enforced. Current copyright laws were developed in an age where it was easier to control the use, dissemination, and copying of written or printed materials. The widespread use of digital technology has greatly increased the ease and speed of copying and dissemination, complicating the task of monitoring the uses of copyrighted materials and enforcing copyrights. The advent of search engines, web crawlers, and peer-to-peer networks has made it difficult to track the use and dissemination of copyrighted works, leading to a concept referred to as the "orphan works" problem, which arises when copyrighted works are used but the copyright owner cannot be located. An inadequate exception, quotation, or use of a few lines of work has become impossible to define and measure, with the copying of an entire work often being only slightly more substantial. Measures of technological protection for copyrighted works have proved to be a double-edged sword, providing effective protection but often being overly restrictive and impeding fair uses of works, with the potential to create further loopholes and problems in the future. The rapid development of new technologies has consistently outpaced the rate of development of copyright law, creating further disparity and inconsistency in the protection of different kinds of works. With technology showing no signs of slowing down, these problems are likely to intensify, and pressure will arise for an overhaul of copyright law to adapt to the digital age (Pouamoun & Kocabaş, 2023).

### 11.3. Blockchain and IP Protection

The strength of the blockchain is that it has capabilities to help companies execute trusted transactions with unknown parties. This is done through enabling the agreement on the terms of the transaction by using smart contracts, which execute contractual clauses and automate the processes. An example is using a smart contract to sell IP and then automatically providing the buyer with the digital rights once payment has been made. This eliminates the need for users to rely on other parties to execute their contractual provisions and can provide automation of the process to save time. It can also provide a less costly alternative than going through many legal disputes to get the contractual provisions

enforced. This type of automation can also be applied for licensing transactions, where IP owners can use smart contracts to automatically license the IP to the licensee and then monitor if the terms of the license are being fulfilled so the automation can revoke the license if necessary (Hauck, 2021). This is a major advance on the current practices of IP rights management and can be very efficient for companies to utilize.

A blockchain is a public ledger of all Bitcoin transactions that have ever been executed. It is constantly growing as 'completed' blocks are added to it with a new set of recordings. The blocks are added to the blockchain in a linear, chronological order. Each node (computer connected to the Bitcoin network using a client that performs the task of validating and relaying transactions) gets a copy of the blockchain, which gets downloaded automatically upon joining the Bitcoin network. The blockchain has complete information about the addresses and their balances right from the genesis block to the most recently completed block.

## XII. CONCLUSION

Intellectual property law is a fascinating and rapidly evolving area of law that is increasingly vital to the successful commercialization of products and services. The primary goal of intellectual property law is to use a system of exclusive rights to provide an incentive for the creation and development of useful works. In doing so, the law aims to strike a balance between the individual interests of intellectual property owners and the general public interest in the free flow of ideas, information, and competitive practices. However, achieving this balance has become increasingly difficult because intellectual property has become a greater focus of commercial activity and the rapid advancement of technology has increased the stakes. In turn, the modern intellectual property marketplace presents unique challenges and opportunities for lawyers practicing in this area. Given the significant economic and competitive importance of intellectual property, a strong understanding of the fundamentals addressed in this book is increasingly essential for business lawyers in all disciplines.

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