

INTELLECTUAL PROPERTY LAW AND POLICY: A PRIMER

Prepared by NZPECC

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Preface

This is a primer about intellectual property law and policy. It includes discussion about what intellectual property is, the origins of intellectual property law, its rationales and purposes in domestic regimes, and how that translates internationally. This is not a primer that focuses wholly on the rules of international intellectual property. There are other sources that can be used for that - rather this primer directs itself to the interaction between domestic law and policy making, and international rules relevant to that exercise. Intellectual property is a large subject, and this primer reflects that. It would be possible to make it longer and to include more examples and counterexamples. But it's already long enough for a primer and so we have chosen not to add more. We acknowledge, though, that for every example we have chosen others could choose different examples and counterarguments. Our goal is not to favour one point of view over another but to provide those working in the area with policy options and a guide on what issues to consider and why.

Intellectual property policy is complex with many linkages to other important policy areas. For this reason, we have deliberately structured the primer to begin with a discussion of the rationale for intellectual property rights (concentrating on economic and innovation issues). We then provide a description of other policy areas (e.g. competition policy, development, technology transfer and health) which should be considered when formulating intellectual property policies. This is followed by an outline of the types of institutions and resources that are needed to operate effective intellectual property regimes. Only then do we set about discussing specific intellectual property laws in such areas as copyright, trade marks and patents. The primer goes on to describe other regimes (such as those for geographical indications, traditional knowledge and trade secrets) which are closely related to intellectual property regimes. It concludes with an analysis of intellectual property issues in the international environment.

Because of these linkages and because many of the readers of this primer will be interested primarily in intellectual property regimes themselves, we have attempted to provide cross references to guide the reader where appropriate. We have also discussed the same issues from different policy perspectives in different chapters. We hope that these provide clarity reminders provide clarity to what is otherwise a technically dense subject within the framework of policy. We can only apologise if this means the Primer seems a little repetitive at times.

This Primer was written with APEC economies in mind and concludes with an overview of ways forward for those economies.

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Susy Frankel and Rory McLeod for NZPECC

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Chapter 1

**Rationale for
Intellectual Property**

Rationale For Intellectual Property

Intellectual property, in its simplest form, refers to new or original creations of the mind. Intellectual property rights give creators or innovators specified rights, where appropriate for a limited time, to control what others may do with their creations or innovations. The intellectual property system refers to the economic, social and legal context in which intellectual property is produced and made use of and under which intellectual property rights are assessed, allocated and enforced. This primer discusses the policy options available for those seeking to develop effective domestic intellectual property systems that take into account a variety of interests, including international standards and agreements.

1.1 Origins of Intellectual Property Policy

The British Statute of Monopolies 1623 (SofM) and the Statute of Anne 1710 (SofA) are two of the earliest examples of patent and copyright law respectively, establishing the foundations of modern rules for intellectual property.¹ As a general rule, the SofM prohibited monopolies following a period of excessive abuse of the royal prerogative. The SofM also included an exception to this prohibition of 14 years of exclusivity granted to “true and first inventors”. The origins of trade mark law go back even further, as the use of brands was synonymous with the development of markets in ancient times. One of the first examples of the protection of brands was the English Bakers Marketing Law of 1266 which required bakers to put a distinctive mark on the bread they sold.

The SofM was not simply a matter of historical interest but underscored the tension between competition and intellectual property rights that has been central to the framing of intellectual property laws since they first emerged. The devisers of the SofM were concerned both to allow for exclusivity for “true and first inventors” and to ensure that increasing intellectual property rights would not interfere with trade. These dual concerns were reflected in the wording of the SofM which recognised that patents should not be “in hurt of trade, raising prices at home or otherwise generally inconvenient”.

The rationales for the SofA were different. It sought to provide justifications for the Stationer’s Company continuing control over printed matter. It did so by providing authors with a exclusive right to print their works for a 14 year term. The Sof A is widely considered to be the origin of government and court regulated copyright law where the copyright vests in authors.

While there were economic interests involved in the promulgation of these statutes, the arguments put forward in their favour were also embedded in emerging social ideals and were not purely economic in nature. They arose from the strands of philosophical thought that were prevalent in Britain at that time.

John Locke (1632-1704), for example, argued for a natural rights theory of the social contract. In this context products of the mind, he reasoned, should be protected under the principles of natural law, in the sense that somebody’s idea takes the form of a ‘natural right’ and the fruits of one’s labour are a kind of property. Locke noted an important proviso, to this kind of property, that there was “enough and as good left in common for others”. It follows that governments

¹ For a discussion of the Statute of Monopolies see S Frankel *Intellectual Property in New Zealand* (LexisNexis, 2011) at 6.3.2 and the Statute of Anne see L Bently, U Suthersanen, P Torremans (eds) *Global Copyright: Three Hundred Years Since the Statute of Anne, from 1709 to Cyberspace* (Edward Elgar, 2010).

do not create property rights but serve as their objective guardians. Marcellin Jobard (1792-1861), who, in the beginning of the nineteenth century, wrote on the natural aspects of rights, was a prolific advocate of perpetual patent protection. He believed that patents provide the answer to protect human creativity and “personality” from unfair exploitation.

Right from the outset, however, natural rights were challenged by a different theory of social contract. Thomas Hobbes (1588-1679) argued that there is nothing natural about a right if we need the power of government to enforce it. Georg Hegel (1770-1831) saw intellectual property as deeply connected to a person and it was this philosophical approach allied with approaches to authors’ rights that found traction in many European countries.

Simultaneously, Jeremy Bentham (1748- 1832) also opposed the theory of natural rights. He introduced ethical principles or morals into property rights theory and made it the responsibility of the state to identify and enforce such rights. In this context, it was not only society’s duty to protect the inventor, but also to secure for the inventor a fair share of the reward when someone else exploited the inventor’s knowledge and ideas. The rationale was simply that justice requires society to compensate and reward its people for their services in proportion to what they cost and how useful they are to society.²

While a great deal else was written on the moral justification for intellectual property rights, Bentham’s writings contained the seeds of a utilitarian rationale which evolved into justifications for intellectual property as being an incentive that rewards creators and inventors in exchange for their creations and inventions benefiting society. This approach was developed and refined into an economic rationale for intellectual property rights which has subsequently widened significantly. We now go on to explore the economic rationale for intellectual property rights as well as the limitations of that rationale as it is currently applied.

² B Andersen, ‘The Rationales for Intellectual Property Protection’ (paper presented to the Druids Conference, 2003, available on Google Scholar); E Hettinger, ‘Justifying Intellectual Property’ (1989) 18 *Philos & Pub Aff* 31; P Drahos, *A Philosophy of Intellectual Property* (Routledge 2016); also O Bracha, *Owning Ideas: The Intellectual Origins of American Intellectual Property, 1790–1909* (CUP, 2016).

1.2 Market Failure in Markets for Knowledge, Creativity, Ideas and Innovation³

For trade marks, the rationale for intellectual property rights is to support one trader from distinguishing his or her goods from other traders and, therefore, reducing consumers' search costs by providing them with information about the goods' source. The economic theory of other forms of intellectual property rights, such as patents and copyright, revolves around the concept that new knowledge, creativity, ideas and innovation are subject to significant market failure. This means that if left to market forces alone, each will be significantly under-provided in terms of what is economically efficient for the society concerned. Market failures result from the following features.

1.2.1 Riskiness

While all investments - commitments made today with a view to securing returns in future - are risky, it is widely accepted that the risk involved in investment in innovation and creative effort is especially great. Most creative outputs add little to the existing stock of knowledge and many have no commercial value. Only a few prove significant and, of those, an even smaller number ultimately have great value. The probability of success, in other words, is low. There is an obvious risk that the very high returns accruing to a small number of 'winners' will be confused as monopoly profits. In fact, to the extent to which they merely compensate for the risks initially borne, they represent no more than the opportunity cost of capital. Artificial intelligence (AI) reduces risk in many areas of research because it lowers costs and speeds up both testing and refining new ideas. So the probability of success is higher for some. But there will be a disparity in access to better outcomes, thus increasing risk for others.

1.2.2 Non-excludability

Simply put, "non-excludability" or "non-appropriability" mean that in the absence of specific arrangements to the contrary, a creator can neither exclude others from sharing in the outputs nor appropriate the benefits those outputs generate. In other words, the supplier cannot control who consumes or what they consume. If a book has been printed, for example, in the absence of any rules to the contrary, there are no limits on who can read or copy it. In the presence of non-excludability, creators will waste resources in costly efforts to protect their creations while those seeking to appropriate them will invest

³ This sub-section is based heavily on H Ergas, 'IP Rights and Efficiency' (a paper prepared for the New Zealand Ministry of Business, Innovation and Employment', 2010), <www.wgtn.ac.nz/nzciel>.

in circumventing those measures. Digital and AI-generated content becomes harder to keep exclusive because of the ease and speed with which digital copies spread.

1.2.3 Non-rivalry

“Jointness in” or “non-rival” consumption means that consumption of creative efforts does not reduce the supply available for consumption. If I have an orange and decide to eat it, I cannot then give that same orange to my friend. However, if I have a book of poetry, my friend and I can happily read that book either separately or out-loud together. Non-rivalry implies that the marginal cost of production, once the first unit of a good has been produced, is zero. But in reality, non-rivalry is a matter of degree. For books, for example, the marginal cost of the additional unit still entails the physical cost of producing the book. For books made available online, the marginal cost will drop dramatically to the costs entailed in finding and downloading the work. With AI there is not necessarily a need to find or download anything as an AI model may provide a summary with just a click. Digital and AI-based ideas can be simultaneously used by many users without depletion amplifying their non-rival nature. Again, in the absence of rules to the contrary, the knowledge, creativity and innovation are likely to be provided at levels that are less than efficient for the society concerned.

1.2.4 Cumulativeness

What is meant by cumulativeness is that ideas and knowledge are inputs into the creation of future ideas and knowledge – the “standing on the shoulders of giants” effect. Future innovators will benefit from access to the current stock of innovations. This means that they potentially have a shared interest with current innovators. AI accelerates the accumulation of knowledge by rapidly combining and improving existing ideas. In a perfect world, current and future innovators would bargain in such a way as to ensure that any worthwhile second stage innovations proceeded. In reality, however, effecting such bargains can be difficult, to the point where the costs of securing the bargain may consume all of the gains it could bring. As a result, some worthwhile second stage innovations will not occur unless the first innovator invests in them. Additionally, the failure may compromise some first stage innovations to the extent to which their attractiveness depends on revenue opportunities associated with innovations at the second stage.

1.2.5 Network effects

Network effects arise in situations in which the benefit derived from an activity increases with the number of participants that activity attracts. These effects can arise in consumption, production or both. Social media (such as Facebook) provide a simple example of a network effect in consumption. The value of being part of such a network increases with the number of users on that network. AI systems amplify network effects, as more users and data often enhancing the quality and usefulness of AI outputs and creating powerful feedback loops. Network effects in production arise, for example, when an operating system with a larger base of users attracts a greater number of suppliers of complementary products, such as applications software. Networks can suffer from market failures in both production and consumption given that it may not be possible to charge all owners and users for the costs and benefits that flow from them. To address these failures and to ensure that the full benefits of networks can be achieved requires a solution to be found to the problem of non-excludability (e.g. through the introduction of network standards). However, if efforts to exclude are too successful, this may lead to competition problems as network owners are able to exclude or inhibit potential competitors from competing in the marketplace.

1.3 The Role of Intellectual Property Rights

Intellectual property rights are one means by which societies can address the market failures that exist in markets for knowledge, creativity, ideas and innovation.⁴

Intellectual property rights fulfil two main goals. First, by the creation of private property rights (initially for inventors and authors) in these markets, creators can capture a greater share of the social benefits associated with their creation, meaning that intellectual property rights can help support efficient investment. Absent such rights, economically valuable information could be appropriated without compensation by competitive rivals. Firms would be less willing to incur the costs of investing in research and commercialization activities. On the other hand, the existence of intellectual property rights means that because their rights are protected, creators can disclose the details of their property without losing the ability to benefit from it. They can therefore negotiate transfers more readily than they otherwise could. At the same time, the right itself can be used to define what it is that is being transferred or sold.

The second goal is to promote widespread dissemination of new knowledge, creative outputs and inventions by encouraging (or requiring) rights holders to place their creations, inventions and the knowledge they embody on the market or otherwise publicly available. Again, because their rights are protected, creators can disclose the details of their property without losing the ability to benefit from it. At the same time, rights can be used to define what it is that is being transferred or sold. This market includes other creators and inventors, researchers and consumers of end products.

As a result, intellectual property rights ought to support the efficient exchange of creations – that is, their allocation to those who value them most highly. Because this increases the value of creations – both to the creator and to society – it further supports efficient investment in creative effort. (This, however, implicitly assumes scarcity which AI may increasingly challenge.)

Efficient exchange is important for two reasons. First, successful innovation, notably in the applied sciences, requires the bringing together of the outputs of many innovators. Many products and services, particularly those that are cutting edge, involve combining methods, know how, activities and products from different sources. Institutional mechanisms that reduce the transaction costs that this innovation involves can increase productivity. Second, creative effort differs from most organised forms of market-mediated production in that it involves significant actors that are not strictly commercial

⁴ They are by no means the only tool available. Others include different types of regulation, some standards, government grants, industry policy and prizes for example.

in character. More specifically, public and quasi-public institutions – such as universities and research institutions – play a central role in investment in creative effort.

There is a fundamental tension between the two goals. On the one hand, an overly protective system of intellectual property rights can limit the social gains from innovation and creativity by reducing incentives to disseminate its fruits. On the other, an excessively weak system could reduce innovation and creativity by failing to provide an adequate return on investment. A balance in policy to affect these goals needs to be found that is appropriate to market conditions and conducive to growth. That balance is dynamic because the environment for creativity and innovation will change over time. That dynamism can have positive results allowing intellectual property interests to be maintained while technology moves apace. It can also create out-of-date legal norms, vested-interest lobbying and other complications.

1.4 Forms of Intellectual Property Rights

Here we summarise the basic forms of intellectual property rights that are used to attempt to correct market failure. The different forms of intellectual property rights and the legal basis for giving effect to these rights are discussed in greater detail in Chapter 4.

Patents provide rights to prevent for a set period of years the unauthorised making, selling, importing, or using of a product or process of technology that is recognised in patent claims. Patents must demonstrate novelty, inventiveness (non-obviousness) and industrial utility (usefulness). Patent offices examine patent application for all or some of these criteria, depending on the economy. The United States and European Union (EU) examine for all criteria. Generally, patent applications are made public before they are granted to disclose the information. Some systems as part of the examination process allow for pre-grant opposition in one form or another. These include New Zealand, Australia, China, Brazil and India, for example. Patents can be challenged post-grant by parties seeking revocation or sometimes changes.

Related to patents are utility models (sometimes called petty patents or innovation patents) which provide exclusive rights for a shorter period for incremental inventions. Patents establish exclusive rights which can be used for a market advantage in return for revealing technical knowledge. A similar type of exclusivity takes the form of **plant breeders' rights**, which have fixed terms, novelty requirements, and disclosure rules. They are intended to encourage the development and use of new plant and seed varieties for agriculture, horticulture and other uses. The United States has design patents, but almost all other economies protect designs using mechanisms available outside of the patent system.

Trade secrets are close relatives to patents. The disclosure of invention through patents is encouraged so as to avoid advances in technology being kept from society as secrets. Some businesses will use trade secrets as a complement to patents for matters that are not patentable or that are best kept secret for commercial advantage. Trade secrets may work well for patented products that cannot be reverse engineered. Trade secrets also have the advantage of lasting for as long as the relevant information is kept secret.

Copyright regulates the use of literary and artistic creations such as books, films and music as well as computer software. It provides exclusive rights for a defined term to publish, copy and sell particular expressions of ideas after they are fixed in some medium. Related rights are **performers' and broadcasters' rights** as well as **design rights** which protect designs that have been industrially applied. Like patents, copyright is limited in scope for various public policy purposes. Aside from copyright term, the most significant limitation to copyright rights are permitted acts (sometimes called fair use or fair dealing), under which it is lawful to copy or use works for certain

purposes such as quotation, research and education.⁵

Trade marks protect rights to market goods and services under identified names and symbols. Trade marks and brand names must be sufficiently unique to avoid confusing consumers, thereby playing the important role of reducing consumer search costs. These rights encourage firms to invest in name recognition and product quality.⁶ They also induce licensees to protect the value of assets by selling goods of guaranteed quality levels. If trade marks were not protected, rival firms could pass off their lower-quality goods as legitimate versions of those produced by recognised businesses. This situation would diminish incentives for maintaining quality and would raise consumer search costs. Trade marks differ from other forms of intellectual property in that they can be renewed (potentially indefinitely) and do not require the future disclosure of ideas or making available of content. Alongside registered trade marks, legal systems may protect related matters such as get-up and other product features. In some jurisdictions aspects of these can be registered as a trade mark but they are often also protected by other related rights such as passing off or unfair competition (these may mean different things in different jurisdictions).

As noted, these basic forms of intellectual property rights as well as a range of rights and instruments that are related to intellectual property are discussed in greater detail in subsequent Chapters. At this stage, however, three key points that relate to economic theory around intellectual property emerge:

- that intellectual property rights must be balanced rather than absolute to achieve their purposes;
- that the optimal settings for intellectual property rights will differ among jurisdictions, particularly because of their differing stages of development; and
- as such, there is a need for evidence to determine the appropriate level and scope of intellectual property rights.

⁵ See discussion in 4.2.5.

⁶ W Landes and R Posner, 'The Economics of Trademark Law' (1988) 78 *Trademark Rep* 267.

1.5 The Search for a Balanced Intellectual Property Regime

Intellectual property rights are justified on the grounds that they can spur innovation and creativity. They often take the form of personal property rights. This immediately distinguishes them from real property, such as land, where the owner of a real property right has the right to exclude others from their land indefinitely. The owner of an intellectual property right, on the other hand, has the right to exclude others from copying and/or distributing their invention or creative work for a limited period. Such owners can license and transfer their technology so as to capture value by efficient exchange. During this period, the right is likely to be qualified by giving others the ability to access the invention or copy the work for certain specified purposes.⁷

Intellectual property regimes, therefore, need to be carefully balanced to ensure they are genuinely useful instruments to promote creativity and innovation. This balance occurs among the needs of creators and inventors to maintain control of their creative works or inventions, the needs of potential competitors working on follow-on creative works and innovations, and of consumers of the products (digital and tangible) of intellectual property.

Striking this balance is not easy or a one-time thing. A system that too strongly emphasises the needs of creators and inventors may result in high costs and/or minimal dissemination of innovations and creative works. A system that too strongly favours consumers and competitors will lead to under-provision of creative works and inventions on which others can build. The closer societies can come to adequately striking this balance, the greater the incentives this mechanism provides for dynamic competition – that is, for competition through creativity and innovation. As this is the form of competition that over the longer term is the most powerful, intellectual property systems have the potential to contribute significantly to dynamic economies and societies.

In seeking the balance between the undoubted benefits and costs of intellectual property rights, individual jurisdictions have taken somewhat differing approaches. Despite this diversity, three broad sets of balancing mechanisms can be identified: the weight given to intellectual property rights relative to other rights; the design of these rights; and the administration of the intellectual property system. These issues are explored in subsequent Chapters.

⁷ The use of the term property creates a rhetoric around intellectual property as a kind of right that any balance subtracts from. This rhetoric, although contestable, is hugely powerful as it can be used to threaten withdrawal from markets and under-investment, particularly in socially needed but not immediately profitable innovation.

1.6 Each Jurisdiction Can Take Its Own Approach

International agreements establish minimum standards for intellectual property protection and frameworks for exceptions (see also discussion in Chapter 6). The international framework is not a one size fits all mechanism but includes flexibilities and policy space so that each jurisdiction can consider its own economic and development needs. The international debate is often broadly about the scope of the obligations and flexibilities. Despite the ongoing debate, the establishment of intellectual property regimes is not an all or nothing game for the jurisdictions seeking to take decisions on their development. Much recent literature emphasises the importance of individualised and regional approaches; the optimal level of intellectual property protection is contingent upon economy-specific factors. It is worth exploring briefly what some such factors might be.

The first and most obvious is the level of development and size and scale of the economy concerned. Many developing economies, and especially poorer developing economies, are unable to benefit from stringent intellectual property protection. These economies are almost always large net importers of technology and intellectual property intensive products. Such economies do not have enough of the associated institutions (such as universities, research institutes, high-tech companies) that are needed to allow strong intellectual property rights to contribute significantly to innovation and creativity. This does not mean that intellectual property rights are not important to these economies for the purposes of innovation. Rather, in taking their balancing decisions, these economies may often choose to implement simpler rights which are set at more modest levels.

The second concerns the industry structure and research sector in any given economy. Intellectual property rights are a particularly important incentive for innovation in specific industries such as pharmaceuticals and biotechnology. They are less useful in many other industries and strong rights in these areas may impede innovation. Furthermore, some developed economies, as well as most developing economies, may be significant importers of technology and may therefore prefer to maintain more modest rights. Their innovation systems may rely on copying existing technologies to improve and adapt products and services. Even if the industry policy of specific economies seeks to encourage the growth of more innovation intensive industries, it will be important to phase in the introduction of stronger rights to allow new firms to build on innovations that are taking place elsewhere.

The third is the legal structures and traditions that apply. For example, those economies with a legal tradition that emanates from English law and some civil law countries tend to interpret rights closely to the

precise definition of the extent of the rights as given in legislation.⁸ Another factor is that different legal systems approach disputes in different ways. Reliance on continuous litigation to develop and refine the law is predominant in the United States and in some European nations (such as the United Kingdom in patent law) but cases are fewer in smaller jurisdictions where statutory and regulatory detail is the paramount guidance. More generally, intellectual property law is subtle and complex and requires sophisticated legal institutions for its effective functioning.⁹ Governments balancing decisions on intellectual property rights need to consider these factors in some depth.

⁸ In common law countries case law will develop to interpret the legislation, such as the scope of originality for copyright works and the meaning of novelty and inventive step in patent law.

⁹ Institutions are discussed in Chapter 3.

1.7 The Need for an Evidence Based Approach

Gathering adequate evidence on which to base advice on how to structure intellectual property regimes has been a significant issue and has raised ongoing problems for policy makers in all economies. The subtle, diffuse and long-term contributions that innovation and intellectual property rights make to economic welfare are complicated to document and require analysis across disciplines (including economics, law, science and cultural studies). The paucity in comprehensive evidence that is relevant beyond one jurisdiction's limits has led to much dispute over what really are the impacts of intellectual rights on innovation and creativity.

There are often inflated claims made by advocacy groups representing owners of intellectual property rights. For example, the US Chamber of Commerce on its webpage highlights that the value of US intellectual is US\$6.6 trillion ("more than the GDP of any other economy in the world") and that US IP-intensive industries contribute 38.2% of total US GDP and 52% of exports.¹⁰ The heavy implication is that the US IP regime is significantly responsible for these economic outcomes, but no further analysis is provided to justify such conclusions.

Some reputable economists have produced modelling to claim quite different results. For example, Boldren and Levine claimed in 2013 that there is no significant evidence that patent rights act to spur innovation over time. Based on their analysis, they argue that Boulton and Watt's steam engine patent most likely delayed the industrial revolution by a couple of decades and that the Wright Brothers' airplane patent forced innovative work on airplane technology out of the United States to France for a decade or so.¹¹ Rufus Dawe has produced a sophisticated economic model that estimates an optimal global copyright term of just 15 years. Even using the most extreme assumptions, his model can find no justification to extend copyright term beyond 38 years.¹²

Conversely, many economists argue in favour of the benefits of optimised patents for innovation, particularly in innovation intensive industries such as pharmaceuticals and electronics. (Economists who argue in favour of currently applied copyright terms are harder to find.) But this does not help policy makers very much when seeking to find or generate specific empirical evidence to apply to their own economy's circumstances.

There are a growing number of empirical legal and policy studies to

¹⁰ See <www.theglobalipcenter.com>.

¹¹ M Boldren and DK Levine, 'What's Intellectual Property Good For?' (2013) *Revue Economique* 1.

¹² M Pollock, 'Forever Minus a Day? Calculating Optimal Copyright Term' (2009) *Rev of Econ Res on Copyr Issues* 35.

address policy concerns in intellectual property.¹³ Some examples include those measuring the value of authorial attribution¹⁴, showing that we are running out of trade marks¹⁵, testing the removal of trade marks for immorality and scandal in the United States,¹⁶ analysing the use of patent citations¹⁷ and assessing the value of public domain images.¹⁸

The difficulties government, and others, face in seeking to gather evidence on which intellectual property regimes are based was highlighted by the UK Hargreaves Review which examined the adequacy of the UK intellectual property system in the context of the then emerging digital economy¹⁹. At every stage, the review stressed the need for government decisions to be based on adequate, measurable and transparent evidence. Its first recommendation was that government should ensure that development of the intellectual property system is driven as far as possible by objective evidence. Policy should balance measurable economic objectives against social goals, and potential benefits for rights holders against impacts on consumers and other interests. The review noted that these concerns would be of particular importance in assessing future claims to extend rights or in determining desirable limits to rights.

¹³ See generally E Derclaye, *Empirical Studies in Intellectual Property Law* (Edward Elgar, 2023).

¹⁴ CJ Sprigman, C Buccafusco & Z Burns, 'What's a Name Worth? Experimental Tests of the Value of Attribution in Intellectual Property' (2013) 93 Boston U L Rev 1389.

¹⁵ B Beebe and J Frome, 'Are We Running Out of Trademarks? An Empirical Study of Trademark Depletion and Congestion', (2018) 131 Harv L Rev 945.

¹⁶ B Beebe, J Fromer, 'Immoral or Scandalous Marks: An Empirical Analysis,' (2019) 8 NYU J of Intellect Prop & Ent L 169.

¹⁷ Patent Citations and Empirical Analysis JM Kuhn, KA Younge, A Marco, 'Patent Citations and Empirical Analysis', <www.sites.bu.edu>

¹⁸ P Heald, K Erickson & M Kretschmer, 'The Valuation of Unprotected Works: A Case Study of Public Domain Images on Wikipedia' (2015) 29 Harv J of L & Tech 1.

¹⁹ I Hargreaves, 'Digital Opportunity: A Review of Intellectual Property and Growth' (2011) <www.gov.uk>.

In its response to the Hargreaves Review of intellectual property, the UK Government stated²⁰:

Fundamentally, the Government agrees with not only the Review's headline conclusion but also with its underlying critique: too many past decisions on IP have been supported by poor evidence, or indeed poorly supported by evidence. This is true at an international level as well as domestically. Recommendation 1 of the Review calls on the Government to make decisions on IP policy on the basis of good evidence, balancing economic objectives and the needs of various groups. Government is of course always seeking to base decisions on good evidence. The challenges involved in doing so are by no means confined to IP policy or to the UK. The Review identifies two particular difficulties in the IP field: a near-total lack of high-quality evidence on some issues and an overabundance of effective lobbying. To deal with the first issue, the Government has strengthened the IPO's economics team and begun an ambitious programme of economic research with partners. IPO will publish its research programme for the coming year, including work in response to the Review, in Summer 2011. The fundamental issue however is that key data is held by business and other organisations. IPO will work with those organisations to help them offer good-quality evidence; our challenge to them is to do so.

De Beer has conducted an extensive analysis of the state of evidence-based resources available to government intellectual property policy advisers²¹. He summarised the type of resources available as follows:

- data for advocacy which is used primarily by special-interest lobby groups. This literature is accessible to policy makers, but rarely transparent, verified or peer reviewed;
- valuations of aggregate economic contributions of IP-related industries which are influential worldwide. This literature usefully

²⁰ HM Government, 'The Government Response to the Hargreaves Review of Intellectual Property and Growth' <www.gov.uk>.

²¹ J De Beer, 'Evidence-Based Intellectual Property Policy Making: An Integrated Review of Methods and Conclusions' (2016) *J of W Intellect Prop* 150 <www.doi.org/10.1111/jwip.12069>.

allows an international comparison but reaches unfounded or misleading conclusions about the importance of IP to a particular industry;

- innovation indices and rankings which are increasingly used to assess comparative progress over time. This literature reports on a broad base of IP and innovative activity, but risks turning into a “statistical horse race”; and
- literature on scholarly theoretical and empirical research and modelling. This literature often relies on sound evidence but tends to use the available information—e.g. patent data—without explaining the context in which firms may or may not choose to use formal intellectual property rights. It is also rarely accessible to policy makers in the format or timelines required.

De Beer concludes that none of these resources alone or in combination are fully capable of providing complete and reliable evidence about the economic importance of intellectual property in any particular jurisdiction. Another related issue that makes the problem even more complex is that the status quo or starting point for reform may not have been evidenced based. For example, under the Berne Convention the minimum term for copyright protection is the life of the author plus 50 years and many FTAs signed after the Berne Convention have extended this to 70 years. Even if evidence is produced at national or regional level to suggest the 50-year term is too long (as some argue it is), that is the international minimum standard and without a change to international rules, it cannot be ignored.

In practical terms, therefore, policy makers can better assess the state of intellectual property and its impacts on innovation by situating it within the larger context of economic forces which affect firm behaviour and seeking to draw on data and analysis from these areas. The key challenge for the economics and policy advice professions in future, however, will be to connect empirical data and micro-economic analyses about firms’ strategic responses to intellectual property policy changes with statistics and macro-economic insights on overall economic performance.

In response to the obvious challenges that exist in this area, the World Intellectual Property Organization (WIPO) has produced a short set of “Guidelines to Using Evidence from Research to Support Policy Making”.²² This takes the form of a brief check list that policy makers can use to develop sound evidence for policy making. This is a starting point, but it still falls short of addressing the serious challenges, including those that have been identified in this section, which require more detailed analysis.

²² World Intellectual Property Organization, ‘Guidelines to Using Evidence from Research to Support Policy Making’ (2019) <www.wipo.int>.

Chapter 2

**Intellectual Property:
Cross Cutting Issues**

Intellectual Property: Cross Cutting Issues

Concentrating on the economic theory underlying intellectual property risks taking too narrow a view and ignores the fact that intellectual property law explicitly covers subject matter that impacts a wide array of societal concerns such as health and education. Even within intellectual property the rules are not only economic. In copyright, for example, the law includes both economic and moral rights. Although intellectual property rights are undoubtedly important to provide economic incentives to inventors or authors, it is also important to pause and think about the broader objectives of intellectual property regimes. Such regimes do not exist in a vacuum but rather to promote the interests of societal welfare and economic development. These issues came sharply into focus around the questions of applying intellectual property rights to control the sale and distribution of COVID-19 vaccines and therapeutics.²³

Such circumstances illustrate why it is wholly reasonable that intellectual property policy should also contribute to and/or be shaped by a range of other policy areas that advance societal welfare and economic development. Some of the linkages that policy advisers and decision makers need to consider are examined in this Chapter. These analyses are not exhaustive but rather point to some factors that policy makers might explore when framing intellectual property rights so that their effects are understood and can be placed in their proper context.

²³ S Frankel, 'COVID 19, Vaccines and International Knowledge Governance on Trial' (2022) 12 QM J Intellect Prop 441 <[www.doi.org/10.4337/qmjip.2022.04.00](https://doi.org/10.4337/qmjip.2022.04.00)>.

2.1 The Interaction of Intellectual Property and Competition Policies

The economic objectives for intellectual property and competition policies intersect and emanate from the same intellectual traditions. They both seek to balance the competing interests in ownership and exploitation of exclusivity against the negative effects that such exclusivity entails for consumers and competing innovators.

The previous Chapter outlined the way in which intellectual property policies should aim to stimulate optimised levels of creativity and innovation. Competition policy also plays an important role in stimulating innovation and spurs invention of new products and more efficient processes. Competition drives firms to identify consumers' unmet needs and develop new products or services to satisfy them. In some industries, firms race to innovate in hopes of exploiting first-mover advantages. Companies strive to invent lower cost manufacturing processes, thereby increasing their profits and enhancing their ability to compete.²⁴

When balance is not achieved, however, intellectual property rights can result in problems for competition. Generally, this occurs when the rights lead to firms having more power in a market than is necessary to achieve the desired level of innovation or creativity. Copyright laws which do not provide sufficient flexibility, in the form of exceptions to support legitimate user and consumer interests, or which provide too long a term of protection can impede future innovation and creativity particularly if they lock in market power based on network effects. In the case of patents, competition issues arise when patents:

- protect fundamental research (are too far upstream) and impede downstream innovation;
- are too broad in their claims which impedes follow on innovation and innovation in related areas;
- are longer than is necessary to incentivise the optimal level of innovation; or
- are grouped together in the form of patent thickets which can be used to impede future innovation.

Competition issues arising in this manner are particularly evident in such areas as health and pharmaceuticals and the operation of digital platforms, including AI. These areas have special characteristics which are explored in greater depth later in this Chapter.

These examples point to situations where competition law can work as a second-tier regulator of intellectual property rights. This should not be seen as unusual as competition law has the power to encroach upon other areas of laws, such as trade and company law. Exclusive

²⁴ W Kovacic, 'Intellectual Property and Competition', (2011) NYU Ann Surv Am L 421.

rights are on the face of it the antithesis of perfect competition, but when market failure is considered such rights are often justified as ultimately being pro-competitive. As such, competition can provide an assessment of whether other laws are contributing to economic welfare. Competition law does not interfere with the granting of intellectual property rights, merely the exercise of those rights in situations where they are used for anti-competitive purposes. In other words, where intellectual property rights are used to create a monopoly and result in legal barriers to entry, competition rules aim to maintain an effective competitive process and to ensure that dominant companies and monopolies do not misuse their power to restrict competition.²⁵

A few jurisdictions have a long tradition of using competition laws to off-set the competition problems that arise from the application of intellectual property statutes. In the United States, for example, conduct involving the use of intellectual property rights is fully within the reach of competition law. US competition agencies (the Department of Justice and the Federal Trade Commission) publish clear guidelines for parties to help them predict whether these agencies will challenge specific practices in this area as anti-competitive. These agencies have also taken many cases against businesses involving such practices and US courts will not hesitate to use mechanisms to address competition concerns, such as compulsory licences, where they conclude this is warranted.²⁶ The same is true in the EU.²⁷

Many jurisdictions in the Asia-Pacific region, however, do not have this tradition. They have sought to provide an appropriate balance between intellectual property and competition considerations within intellectual property laws themselves, rather than see the two areas of law balance each other. In part this approach results from the fact that competition law is a relatively new phenomenon in many APEC economies. Also, these economies come from different legal traditions which make it more difficult for the two areas of law to interact in this way.

That being said, all APEC economies now have competition laws in place and so can look to develop these competition policies, laws and institutions in a manner that increases the influence of competition considerations on intellectual property practices. Options for this to occur include ensuring that:

²⁵ H Schmidt, 'Competition Law and IP Rights: Not So Complementary: Time for a Realignment' (2019) 42 W Comp 451 <www.soton.ac.uk>.

²⁶ H Ergas, above n 3, at 27.

²⁷ See generally P Treacey, *EU Competition Law and Intellectual Property Rights* (Edward Elgar, 2025).

- Competition policy and intellectual property advice functions within government are closely linked. In New Zealand, for example, intellectual property policy advice is provided by the same branch within the Ministry of Business, Innovation and Employment that advises the government on competition policy issues. As such, the competition policy dimensions of intellectual property law can be carefully considered.
- Any intellectual property exceptions to or exemptions under copyright law are kept limited and explicit. For example, in 2023, New Zealand removed all intellectual property exemptions under its Commerce Act. This has implications for organisations such as New Zealand Copyright Licensing Limited (New Zealand's copyright collecting society for literary works). This body does, however, have the option under the Commerce Act of applying that its activities have a "clearance" (on grounds that they do not substantially lessen competition) or authorisation (on grounds that their public benefits outweigh any detriments to competition).²⁸
- Intellectual property laws are developed in a manner that provides for workable competition as well as innovation in any given area. While in the short term, there may be a trade-off to provide a time-limited right to exclude creators and innovators, the effects of this exclusion can be softened by appropriate rules in other areas. These can include, for example, the application of exceptions and parallel importing provisions within the field of copyright and trade marks, and of experimental use and compulsory license provisions for patents. (These are discussed further in Chapter 3).
- Competition agencies are provided with adequate resources and expertise to pursue intellectual property cases. This expertise will take time to build up given the issues involved in assessing anti-competitive behaviour in this area are subtle, complex and frequently counter-intuitive. As has occurred in the United States and the EU, competition agencies can also be encouraged to provide guidance to market participants on the types of behaviours involving intellectual property rights that are likely to fall foul of competition laws.

²⁸ Commerce Act 1986, Part 5.

2.2 Interests of Developing Economies

The question of how intellectual property affects economic development and growth is complex and based on many factors. While economists are devoting more attention to this issue, evidence to date is fragmented and somewhat contradictory, in part because many of the concepts involved are not readily measured. As such, the evidence is that stronger systems for protecting intellectual property could either enhance or limit economic growth depending on the specific circumstances of the economy concerned and whether the growth is purely domestic or transnational. In this respect, much depends on the stage of development that any economy has reached, the strength of its institutions and the ability of people and businesses to benefit from intellectual property rights.

There are many claims made in relation to the potential benefits of strengthening intellectual property regimes in developing economies. Developing economies will need to assess these claims for themselves on a case-by-case basis. For example, some argue that strengthened regimes will lead to **increased inward foreign direct investment (FDI)**, particularly for knowledge and technology-intensive products. Such FDI could lead to **increased domestic innovation** as spillovers occur from FDI and domestic innovators seeking to strengthen their own intellectual property rights. In turn this could lead to **increased trade**, both in terms of imports of knowledge-intensive goods and services and eventually of exports as domestic firms become more creative and innovative.²⁹

Finally, developing economies will need to decide where they stand on the claim that stronger rights in developing economies are necessary to incentivise **innovation in developed economies**. These claims are attached more frequently to key products such as pharmaceuticals in respect of which it is argued that a global or regional system of incentives is needed to provide an adequate pipeline of new and improved products. These are areas where developing economy consumers are extremely price sensitive and may claim that strong intellectual property rights merely have the effect of benefitting right holders from developed economies.

²⁹ Since the entry into force of the World Trade Organization (WTO) TRIPS Agreement (see general discussion in Chapter 6.2) many developing countries have provided considerable evidence to dispute this premise and they do so in multilateral fora in particular. The waiver of certain intellectual property rights relating to COVID-19 vaccines was brought about by developing countries and eventually signed on to by developed countries. The final waiver was, however, weaker than originally conceived of by developing countries. Nevertheless, the promise of FDI in exchange for higher levels of intellectual property protection has not come to fruition for many countries, especially least-developed countries. Least-developed countries are not yet required to comply fully with the TRIPS Agreement. When the Agreement was negotiated this was until 2005 but has been extended many times and now the compliance date sits generally at 2034. See WTO, 'WTO members agree to extend TRIPS transition period for LDCs until 1 July 2034', <www.wto.org>.

Part of the challenge with claims for stronger or indeed flexible rights is that it is difficult to assess the contribution of intellectual property in the context of other factors like poor infrastructure and poverty. Gradually, however, the ability to measure and test such contributions is improving as more empirical analyses take place. Writing in the US International Trade Commission's official journal, Alex Maxwell and David Riker concluded that strengthening intellectual property rights in developing economies:³⁰

- has little effect on the level of R&D expenditures and the rate of innovation in developed economies. But apparently such strengthening has a positive effect on the rate of international technology transfer from developed to developing economies;
- has an ambiguous effect on international trade between developed and developing economies but has a significant positive effect on FDI to developing economies. Stronger intellectual property rights can reduce technology imitation and therefore create a market in developing economies for innovative products exported from developed economies. On the other hand, strong intellectual property rights can encourage local production through FDI that displaces imports of these products;
- usually benefit developed economies at the expense of developing economies. However, there are well-defined cases in which stronger intellectual property rights can benefit developing economies. They can induce FDI and technology transfer and increase labour demand in these economies, and in some cases, they can increase innovation.

Digging deeper into these results confirms that the ability of developing economies to benefit from stronger intellectual property rights depends in large part on the level of development of the economies concerned, as well as the presence of supportive infrastructure and institutions.³¹ Empirical research published in the *Journal of Development Economics* supports the existence of a U-shaped curve regarding optimal IPR and level of economic development.³² This study shows that innovation and ultimately growth in a developing economy will at first decrease as intellectual property rights are strengthened but as development proceeds, strengthened

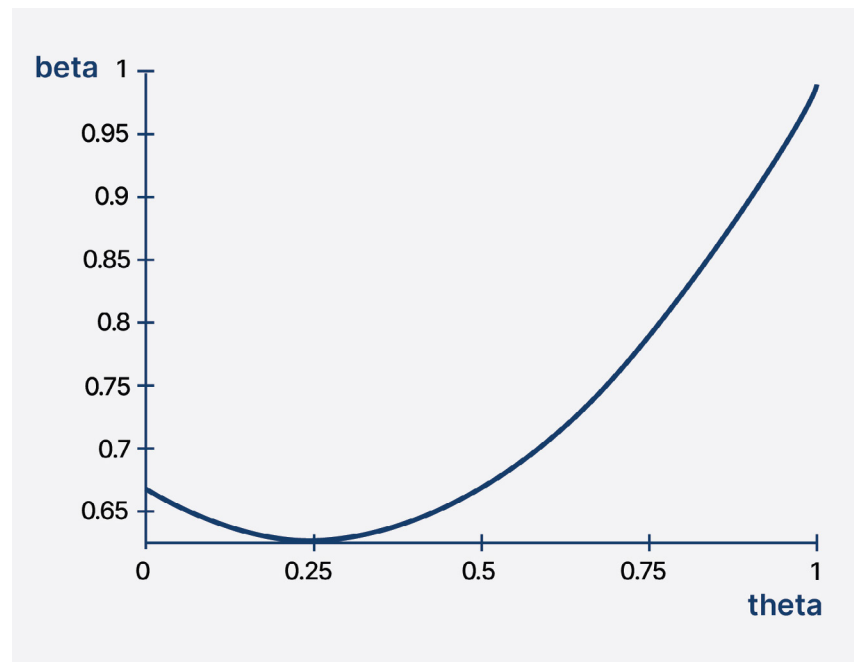
³⁰ A Maxwell and D Riker, 'The Economic Implications of Strengthening Intellectual Property Rights in Developing Countries' (2014) *J Int Comm & Econ*.

³¹ See K Maskus, 'Intellectual Property Rights and Economic Development' (2000) 32 *Case W Res J Int L* 471 <www.scholarlycommons.law.case.edu/jil> and JE Stiglitz, 'Economic Foundations of Intellectual Property Rights' (2008) 57 *Duke L R* 1693 <www.scholarship.law.duke.edu/dlj>.

³² Y Chen, T Puttitanun 'Intellectual Property Rights and Innovation in Developing Countries' (2005) 78 *J Dev Econ* 474.

rights will increase innovation and growth. The results are illustrated in Figure 1.

Figure 1: Relationship Between Per-Capita GDP (theta) and the Level of Intellectual Property Rights (beta)



This U-shape curve points to the essential importance of individual developing economies developing their own intellectual property regimes in terms of their own circumstances. It makes sense as at very low levels of development, poorer economies are essentially involved in copying or imitating products and services from developed economies. As development occurs, a process of technological catch-up will occur where gains from copying or imitating will start to decrease. At this point, it is more logical for the developing economy to begin gradually strengthening intellectual property rights and to seek the benefits from domestic innovation, inward FDI and trade that these will provide.

It is instructive to note that developed economies in North America, Europe and elsewhere followed a similar trajectory in the development of their own manufacturing and services sectors. When these sectors were in the early stages of development, these economies often quite aggressively limited the impact of their intellectual property regimes.

The optimal level of intellectual property rights is dynamic and, it would be fair to say that most APEC developing economies appear to have developed to the point where they have passed the bottom of the U-shape curve and are making their way up the other side.

This does not necessarily mean that they should be looking to further strengthen their domestic intellectual property rights. Analysis may show that the rights currently in place are, in fact, still too strong as these have been agreed to in the context of commitments made under multilateral, regional or bilateral trade agreements. Before considering further policy development, these economies may wish to move further up the curve to the point where the strength of the rights currently applied represents an optimum level. These issues are discussed in greater detail in Chapter 6 on International Cooperation.

Trade marks raise different issues. Developing countries, just like developed countries, have both businesses that seek to distinguish their goods and services from those of other traders and consumers who want to know about the source and origin of goods without confusion. Therefore, in some ways, trade mark law is more universal, but this may be different when it comes to cutting edge issues in trade mark law, such as the protection of famous trade marks and of indigenous signs and symbols.

In the meantime, APEC developing economies may wish to promote development in associated areas to gain the full benefits of their intellectual property regimes. These might include development of:

- institutions in areas such as intellectual property policy, the granting of rights (such as patents and trade marks), the courts, and expertise in the private sector;
- associated institutions such as those related to competition policy and law; and
- associated infrastructure with a goal to increase the value of intellectual property rights to the economy. This might include educational institutions, R&D and the development of more knowledge intensive industries.

2.3 The Role of Intellectual Property in Promoting Technology Transfer

Closely related to the role that intellectual property plays in promoting economic development and the interests of developing economies is the role it plays in technology transfer. Again, the evidence is mixed as many of the variables concerned are difficult to measure, as are the causal links between these variables. In this area, patent policy and law have been the important factors in promoting technology. Copyright and trade marks also have a role to play.

A major 2008 OECD study looked at the impacts of intellectual property rights on technology transfer.³³ The study found that the strength of patent law had by far the strongest impact on technology transfer. Copyright and trade mark law also showed minor impact. For patents, the key conclusion was that stronger levels of patent protection were positively and significantly associated with the inflows of high-tech goods and services, like pharmaceutical goods, chemicals, aerospace products, computer services, information, and office and telecom equipment. This result applied to all types of economies but was strongest for developed economies and less strong for developing economies.

Other studies present a different picture. In 2017, the Asian Development Bank adopted a different measure of technology transfer in terms of the impact of intellectual property rights on foreign technology licensing. The working paper concluded that:

The evidence leads to two conclusions: first, there is a positive and significant relationship between IP protection and foreign technology licensing only for affiliated firms, consistent with the existing empirical literature, whereas we find no relationship between IP protection and licensing for unaffiliated firms. Second, the environment in which a firm operates seems to moderate the relationship of IP protection and firm-level technology licensing: we find that tighter IP protection is associated with an increase in licensing activity only for firms operating in upper-middle-income countries, whereas there is at best no significant correlation between the degree of IP protection and technology licensing for firms operating in lower-middle-income and low-income countries.³⁴

The key lesson for APEC is that as its members move through the stages of economic development, the benefits of strengthening IP

³³ WG Park and D Lippoldt, 'Technology Transfer and the Economic Implications of Strengthening Intellectual Property Rights in Developing Countries' (OECD, 2008).

³⁴ E Gentile, 'Intellectual Property Rights and Foreign Technology Licensing in Developing Countries: An Empirical Analysis' (2017) Asian Development Bank Working Paper Series, No. 515 at 22.

(and especially patent) protection in terms of encouraging the transfer of technology should increase. A United Nations Conference on Trade and Development (UNCTAD)/ International Centre for Settlement of Investment Disputes (ICTSD) study looked at the case of Korea³⁵. The study found that strong intellectual property protection hindered rather than facilitated technology transfer and indigenous learning activities in the early stage of industrialisation when learning takes place through reverse engineering and duplicative imitation of mature foreign products. Korea has now moved well past this early stage of development. Only after economies have accumulated sufficient indigenous capabilities, with extensive science and technology infrastructure to undertake “creative imitation”, will intellectual property protection become an important element in technology transfer and industrial activities. Park suggests that Korea could not have achieved its current levels of technological sophistication if strong intellectual property regimes had been forced on it during the early stage of industrialisation. (He also argues that the same applied to the United States and Western Europe during their industrial revolutions.)

Once again, most studies stress that when an economy has developed sufficiently to use strengthened intellectual property rights as one means to promote technology transfer, other preconditions will also need to be present. There are complementary factors that help facilitate technology transfer, such as the quality of infrastructure, government policies and regulations, market structure, institutions and the extent of collaboration among different research organisations. There are also complex interactions to account for between innovative or absorptive capacities and intellectual property systems. Thus, reform of intellectual property regimes should proceed based on a holistic approach, also taking into account the state of domestic institutions and innovative capacities.

³⁵ L Kim, ‘Technology Transfer and Intellectual Property Rights: the Korean Experience’ (UNCTAD/ICTSD, 2003).

2.4 The Interests of Indigenous Peoples

The interests of Indigenous Peoples in intellectual property have become a global issue as the commercialisation of indigenous cultures has globalised and often without the indigenous cultures directly benefiting.³⁶ This problem has two core strands. The first is that “western” intellectual property regimes have been utilised as a new form of colonisation to extract value from indigenous communities without corelative returns to them.³⁷ The second is that economically empowered Indigenous Peoples have moved to adopt policies and approaches to exploit existing intellectual property rights for their own benefit and to seek to develop new forms of protection, in some jurisdictions at domestic level and internationally at WIPO.³⁸ When it comes to intellectual property policy, there might appear to be parallels between the interests of Indigenous Peoples and the populations of developing economies. Many Indigenous Peoples are based in developing economies and are often present among the poorer segments of society. But while some parallels can be drawn, there is also a need to take a quite separate focus on how innovation and creativity take place within indigenous societies.

In their work, “Indigenous Peoples’ Innovation and Intellectual Property” Drahos and Frankel, outline how indigenous innovation is based on “indigenous” or “traditional” knowledge.³⁹ Traditional knowledge has been described in many ways which makes a single definition problematic but as Drahos and Frankel argue also unnecessary; rather there are several common features that can be identified in indigenous or traditional knowledge:⁴⁰

- **Are place based.** For indigenous people, “their country is their laboratory” and they are linked together in a closely defined network. For Māori in Aotearoa New Zealand and Aboriginal people in Australia, for example, it “is this place-based network that maintains and advances knowledge. Individuals can, of course, leave the place of their spiritual affiliation and connection (their

³⁶ See generally S Frankel, ‘Traditional Knowledge, Indigenous Peoples and Local Communities’, in R Dreyfuss and J Pila (eds), *The Oxford Handbook of Intellectual Property Law* (OUP, 2017), ch 27.

³⁷ Suggestions about decolonising intellectual property have built on the broader decolonisation literature, see B Elkington (ed) *Imagining Decolonisation* (BWB, 2020), and see associated videos at <www.bwb.co.nz>.

³⁸ Examples of new domestic laws to protect traditional knowledge include in the Cook Islands, Traditional Knowledge Act 2013. See also HY Tualima, ‘Tracing Knowledge in Samoa’ (2024) <www.wgtn.ac.nz/nzciel>. For discussion of WIPO see discussion later in this part.

³⁹ P Drahos and S Frankel, *Indigenous Peoples’ Innovation and Intellectual Property Pathways to Development* (ANU e-press, 2012) <www.doi.org/10.22459/IPI.08.2012>.

⁴⁰ Ibid.

Country) but remain part of a network, communicating with its other members and contributing to its production of knowledge. Place anchors indigenous networks of innovation, but these networks can and usually do extend beyond place.”

- ***Can be traced back to acts of powerful ancestors.*** “The acts of ancestors are the threads that connect different parts of an indigenous knowledge system. One can, for example, give independent descriptions of a group’s botanical taxonomies, but the ultimate origins of these taxonomies lie in the names and classifications that ancestral spirits created along with the landscape and the animals and plants in it.”
- ***Can be linked closely to collective kinship networks that comprise indigenous societies.*** These networks are linked in turn to the natural world, the elements of which can provide practical uses (a tree can provide shelter) or innovative applications (the leaves of a tree are known to be medicinal). The people in these networks are linked in their own ways to different elements of the natural world in a manner that will describe a coherent whole.
- ***Are characterised by the strong presence of uncoded knowledge.*** Uncoded knowledge is transmitted through personal teaching and demonstration, being passed down through the generations. In many cases, such knowledge is not capable of being codified.
- ***Are subject to different forms of expression.*** Many non-indigenous societies see innovation through the lens of “technological artefacts” where innovations are recorded in a written form to be drawn on in future. An indigenous society “may choose to invest its resources into information that expresses itself more in services and processes than in technological artefacts. It may also emphasise the symbolic manipulation of information, meaning, amongst other things, that more time is devoted to the coding and transmission of information through storytelling, dance, ritual, art and other forms of symbolic manipulation.”
- ***Are not cumulative but cyclical in nature.*** Given that innovation is centred around guardianship of the natural world, innovation will occur and recur based on the natural circumstances at the time. The presence of drought or floods, for example, can recall different sets of knowledge which in turn allow innovation to occur based on the specific challenges being faced in a given moment.

The nature of indigenous innovation means that it does not make for an easy fit with the system of largely private rights that emerge from intellectual property regimes. Intellectual property regimes also provide incentives for the misappropriation of traditional knowledge. Examples include:

- Trade marks based on indigenous names and symbols, designs,

visual art and crafts and architecture;

- Indigenous names as geographical indications;
- Copyright drawing on indigenous music, performances, literature, stories and other oral traditions, dance and games;
- Designs utilising indigenous art; and
- Patents based on skills, techniques and practices that Indigenous people have developed, nurtured and passed on throughout the generations.

Such practices too often seriously impede indigenous innovation as private rights impinge on the future ability of indigenous people to make use of their knowledge in a manner acceptable to them. In addition, the framework of intellectual property rights, including the expiry of patent and copyright terms, will see the knowledge concerned made available more broadly to the public. This sits at odds with the custodial systems of Indigenous Peoples which provide access to knowledge under quite different systems which are not designed as individual ownership predominately for profit making but rather are typically defined by kinship links.⁴¹

Indigenous societies are present in most APEC member economies and careful consideration needs to be given to their interests in the design of intellectual property regimes. Two broad approaches can be considered to use separately or together. The first seeks to defend the interests of Indigenous Peoples, largely through safeguards being built into intellectual property law to address when indigenous interests come into conflict with intellectual property. For example, New Zealand intellectual property laws have provisions which allow the refusal of patents, plant variety rights, trade marks or geographic indication applications if the use or commercial exploitation of these would be offensive to Māori.⁴² Other options to address the interface of intellectual property and Indigenous Peoples' interests are a requirement to disclose the source for genetic resources in patent applications and the development of databases of traditional knowledge and genetic resources for use by patent applicants and

⁴¹ See examples discussed in Drahos and Frankel above n 39.

⁴² See Patents Act 2013, s 15 stating that inventions are not patentable on the grounds of *ordre public* or morality. See also ss 225–229 regarding Māori Advisory Committee on relevant patent matters; Trade Marks Act 2002 s 17(1)(c) prohibiting registration if “the use or registration of which would, in the opinion of the Commissioner, be likely to offend a significant section of the community, including Māori” and ss 177–180 regarding the Māori Advisory Committee; Geographical Indications Registration Act 2006, s 13A prohibiting registration of EUFTA related trade marks offensive to Māori and s 170 adding the geographical indications role to the Trade Mark Advisory Committee; Plant Variety Rights Act 2022, ss 3, 4, 57–68. And see Waitangi Tribunal, Report on the Crown’s Review of the Plant Variety Rights Regime (2020) <www.waitangitribunal.govt.nz>.

applying for intellectual property rights.⁴³ In 2024 WIPO finalised a treaty to require disclosure of origin of traditional knowledge and relevant genetic resources.⁴⁴

The second approach seeks to promote indigenous innovation and recognises that in the right circumstances, members of indigenous communities can themselves seek to make use of intellectual property rights for the purposes of promoting indigenous innovation. In this context it is worth remembering that as well as individuals or companies, intellectual property rights can be held by collective entities such as tribal authorities or other legal persons. WIPO has in part adopted this approach through the publication of materials to assist indigenous communities to utilise the intellectual property regime from their perspective as well as the provision of legal training and advice.

Some Indigenous Peoples and experts have called for more fundamental protections of indigenous or traditional knowledge through the creation of a “sui-generis” (or separate) regime.⁴⁵ Such a regime could be based on customary law, the law of the state or a form of pluralism. Where the rights to control traditional knowledge is in the hands of the traditional leaders of indigenous communities then, under the custom of those communities, such rights are already so vested. However, where those communities are subject to the law of the state, such community control may be very limited. This may be for a variety of reasons including: the lack of political will of the state to ensure protection; the inability of the indigenous community to move the dominant political position; the resources and expertise required to design and enforce sui generis systems; and because the codification of traditional knowledge sits at odds with the more flexible and non-codified systems applied by Indigenous Peoples themselves. Codification of customary regimes may also risk harming the very process of indigenous innovation that they are designed to promote and hand power over them to the state.

⁴³ See S Frankel and J Lai, *Patent Law and Policy* (LexisNexis, 2016).

⁴⁴ WIPO Treaty on Intellectual Property, Genetic Resources and Associated Traditional Knowledge, see text and explanation at <www.wipo.int>.

⁴⁵ *Ko Aotearoa Tēnei*, Report of the Waitangi Tribunal on Claims Concerning New Zealand Law and Policy Concerning New Zealand Law and Policy Affecting Māori Culture and Identity (2011), recommends a sui generis protection of mātauranga Māori as well as protections where there is a direct intersection with the intellectual property system. Susy Frankel was an Expert Counsel to the Waitangi Tribunal on this report and one of the authors of chapters 1 and 2 which discuss intellectual property.

2.5 Intellectual Property and SMEs

Small and medium enterprises (SMEs) are an extremely heterogeneous group in most APEC economies. Their innovative capacity and ability to develop new and innovative products, processes and services vary significantly depending on their size, focus, resources and the sector and business environment in which they operate. In certain knowledge and innovation intensive sectors such as pharmaceuticals, biotechnology and digital, SMEs have been a key to growth and dynamism. Patenting and other intellectual property rights are used more frequently in these sectors and small firms rely heavily on these to attract research partners and investment. However, they may rely on the patents in the countries where they partner with researchers more than their home markets.⁴⁶

Many studies reveal that SMEs face severe barriers in seeking to make use of intellectual property rights.⁴⁷ This is often due to their limited knowledge of intellectual property systems, lack of clarity concerning the relevance of intellectual property rights to their business strategies and competitiveness, and finding these systems too complex and expensive to use. This can result in too much reliance on trade marks in the hope that these will be enough to protect business intellectual property related interests. Small businesses from indigenous societies face additional barriers because they often come from the poorest sections of society and operate in social and economic systems where the concept of private property rights is unfamiliar.

The costs of patenting are perceived as a considerable barrier for SMEs. Barriers that SMEs face in this area include:

- The backlog that exists in many patent offices. Often a patent will take several years to be granted, and SMEs simply do not have this time to wait before they seek to commercialise their innovations.
- The success of SMEs in terms of patents being granted is lower than it is for large firms.
- For patenting to be a successful commercial strategy, patents will need to be acquired in multiple jurisdictions, significantly increasing the cost and complexity of patenting for small firms.

These may also be the reasons that some firms rely on trade secrets where that protection is available and known.

A major review based on data extracted from United States R&D and Innovation Survey for eight years between 2008 and 2015 looked at

⁴⁶ S Frankel, *Test Tubes for Global Intellectual Property Issues* (CUP, 2005), ch 5.

⁴⁷ These are surveyed in E Burrone, 'Intellectual Property Rights and Innovation in SMEs in OECD Countries' (2004) *J Intellect Prop Rights* 34.

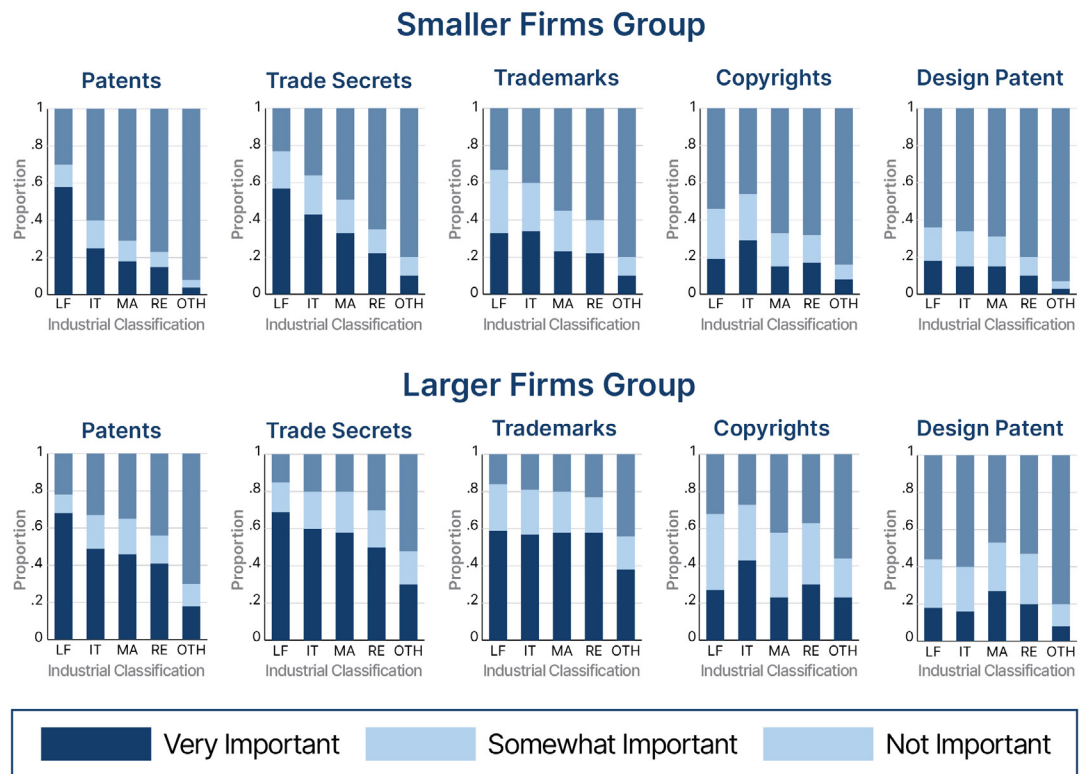
firm size.⁴⁸ The study found that firm size is an important determinant of a firm's attitude to intellectual property. Larger firms considered all types of formal intellectual property – patents, trade secrets, copyrights, and trade marks – to be more important. In fact, the largest firms considered patents three times more important than smaller firms. Moreover, the relationship between firm size and patenting held when controlled for industry, firm age, R&D investment, innovation output, expertise in the market for technology, and the use of other types of intellectual property. The differences between large and small firms' attitudes to the various forms of intellectual property is illustrated in figure 2 below.

A well-known US patent and licensing adviser, Stephen Key, writes in *Forbes Magazine*: "If you have an idea for a new consumer product that you want to license, should you bother patenting it? I wouldn't. The typical lifespan of consumer products today is about 18 months. Sure, there are evergreen products that keep on selling year after year. But those are few and far between." Many SMEs adopt this approach. They rely on a range of other strategies including secrecy, speed to market, ongoing innovation, relationships based on trust and trade marks to differentiate their products. But Key continues "When you are attempting to license an innovation that requires a significant amount of time and capital to bring to market, having patents becomes extremely important. There's so much more at stake. Keeping your competition at bay will allow you to recoup your expenses much more quickly."⁴⁹

⁴⁸ F Mezzanotti and T Simcoe, 'Innovation and Appropriability: Revisiting the Role of Intellectual Property' (US Government Census Bureau, 2022).

⁴⁹ S Key 'In Today's Markets Do Patents Even Matter?' *Forbes Magazine* (13 November 2017) <www.forbes.com>.

Figure 2: Different IP Protection Strategies by Industry for Large and Small Firms



Source: Mezzanotti and Simcoe, p 30

The question arises as to what role can governments play in promoting intellectual property strategies among SMEs trying to compete in innovation and knowledge intensive industries such as information technology, pharmaceuticals and information technology.⁵⁰ For a period, some governments considered or implemented such instruments as “utility” or “petty” patents, which are less complex for SMEs to navigate. However, these have been little used because the value of the property right they provide is so much lower. The survey conducted by Mezzanotti and Simcoe showed that SMEs had little interest in applying for such instruments.⁵¹

SMEs will benefit if governments make their laws and processes around applying for and enforcing intellectual property rights as simple and efficient as possible. There are also a range of other strategies

⁵⁰ The World Intellectual Property Organization has ongoing work on SMEs, see for example the work and seminars listed here <www.wipo.int>.

⁵¹ Mezzanotti and Simcoe, above n 48, at 12.

that governments can employ outside their legal frameworks to assist SMEs. These include awareness raising and training, customised intellectual property services, and working with intellectual property advisers and business organisations.

These issues are highly relevant to APEC economies given the prevalence of SMEs in all APEC members. They have been discussed at several APEC events⁵² which have stressed the need for APEC intellectual property regimes to consider the challenges faced by SMEs (especially those operated by women and in the indigenous economy). They have also stressed the need for intellectual property regimes to be accompanied by education and support services in order to promote greater participation by SMEs, particularly in key sectors.

⁵² See for example 'Promoting SME Innovation Through Smart IPR Policy' (APEC, 2014) Final Report of the Workshop held in Chiang Mai Thailand.

2.6 Patents and Pharmaceuticals

The issue of appropriate patent policies for the development of new pharmaceuticals was thrown into sharp relief by the COVID-19 pandemic. In seeking to develop new vaccines for COVID-19, many economies progressed necessary research and development, and the granting of patents and regulatory approval for vaccines, at record speeds. The question of a waiver of some TRIPS rights in order to enhance the production and distribution of vaccines received strong support from the outset of the pandemic, although nothing was agreed until late in the pandemic and that agreement fell short of the waivers sought by the initiators of the discussion.⁵³ At the end of the day, however, the world witnessed vaccines being stockpiled in developed economies at a time when extreme shortages persisted in poorer developing economies where the need was greatest.

Some commentators consider that the patent system played a considerable part in creating these adverse effects. They say the framework of the international patent system (which prioritises private rights and thus places the licensing of rights in private hands) has arguably supported a structure that was not fit for purpose for manufacturing and distributing vaccines in a timely manner for a pandemic. On the other hand, pharmaceutical companies have stated that without patents they would not have been able to speedily invent the vaccines. They claim that difficulties in developing economies say more about infrastructure and capacity to manufacture rather than the existence of patents.⁵⁴

Creating an optimal patents regime for the development of new innovative pharmaceuticals is complex and vexed but extremely important for the health outcomes achieved in all economies. There is no question that for jurisdictions with large innovative pharmaceutical sectors, the presence of effective patents is essential for the development of new drugs and that without patents, market failure would occur. New drugs are expensive to develop. The average research and development investment required to bring a new drug to market has been estimated to be over US \$1.3 billion, after accounting for the costs of failed trials. Some contest this estimate (which is not independent) as real investment figures are often confidential.⁵⁵ However, once created, new chemical drugs may be easy for generic firms to imitate (this is less so for biologics).

⁵³ For the final text of the waiver see Council for Trade-Related Aspects of Intellectual Property Rights Ministerial Decision on the TRIPS Agreement, adopted on 17 June 2022 WT/MIN (22)/30, 9.

⁵⁴ Frankel, above n 23.

⁵⁵ See United Nations Secretary-General's High-level Panel on Access to Medicines, (Report, 2016) <www.unsgaccessmeds.org> at 33–36 for an elaboration of this debate.

As a result, competitive markets may underinvest in drug development from society's point of view. This market failure can be particularly pronounced in the case of research investments for vaccines.⁵⁶ However, in the case of the pandemic, potential market failure was addressed in an early and effective fashion through government funding of research and waivers of liability. This meant that both vaccines were developed and pharmaceutical firms almost certainly recouped their investment in a very short time.

The importance of patents to the development of pharmaceuticals is underlined by the fact that jurisdictions with large innovative pharmaceutical sectors have often sought the means to extend their "effective patent life". Several means have been put in place to achieve this including:

- ***An extended patent term for pharmaceuticals*** – an extended term is provided in some jurisdictions when the time taken to obtain regulatory approvals for a new product has shortened the time period for which the patent holder can market the product on an exclusive basis.
- ***Allowing incremental patenting*** of new uses of known pharmaceuticals, including to treat new conditions, using new dosages and new patient groups.
- Patent "linkage" provisions – these generally link the granting of marketing approval or other regulatory approval for a generic or biosimilar pharmaceutical to the status of a patent for the originator reference product. Under these provisions, patent holders need to be identified and are given the right to challenge the granting of marketing approval.
- ***Extended data exclusivity*** – Data exclusivity refers to a period of protection for data provided by an innovator company to a regulatory agency to prove the safety and efficacy of a new pharmaceutical product. The period of protection prevents a competitor from relying on the innovator's data when seeking approval of a generic version of the same pharmaceutical product with the same regulatory agency.

Some key questions arise on these types of regimes. The first is in markets with large innovative pharmaceuticals sectors, how much protection is too much? At what point do the benefits of patents for innovation outweigh the costs to consumers and future innovators? Given the rewards involved, it is economically rational for pharmaceutical patent holders to adopt strategies that seek

⁵⁶ T Saxell, T Takalo and O Izhak, 'Optimal Patent Policy for Pharmaceuticals: Balancing Innovation and Access to New Drugs' (VOXEU/CEPR, 2020).

to expand and extend their monopolistic positions (also known as “evergreening”). In addition to seeking to take advantage of the provisions outlined above, patent holders can legally seek new patents for new uses for existing drugs and even in some cases new methods to administer existing drugs for existing uses. Patent “thickets” are also evident as large pharmaceutical companies seek to group many of their patents together and use legal challenges to deter competing innovators drawing on relevant existing information to develop new products.⁵⁷

To date, there appears to have been a limited amount of modelling work done by economists to determine the optimal strength for patents in jurisdictions with large innovative patent sectors.⁵⁸ On the other hand, the debates around this are both significant and prevalent in the academic legal literature and court cases in the context of applying the rules. A straightforward way to conceive of optimal strength is to consider whether patents unduly inhibit or encourage upstream or downstream research. As Rochelle Dreyfuss has stated, in connection with questions of patentability, and the Supreme Court of the United States has cited:

To determine how high costs would run for any particular patent, it is useful to conceptualize knowledge as a pyramid: the big ideas are on top; specific applications are at the bottom. Specific applications are largely dead ends. Private ownership of these applications does not entail high social cost because others will never need these inventions as a basis for their own inventiveness. But as one moves up the pyramid, the costs associated with privatization increase. As a result, the big inventions at the top—inventions denominated as ideas or principles—are not considered patentable.⁵⁹

Further, some jurisdictions have developed the capacity to put in place rules and processes which inherently “balance” the effects of strong patents. One example is strong competition rules for the pharmaceuticals sector. This is evident in the United States where competition agencies have taken many actions against pharmaceutical companies seeking to maintain patent-based monopolies. These involve cases asserting monopolisation of markets for pharmaceutical

⁵⁷ A Nawrat, ‘From Evergreening to Thicketing: Exploring the Manipulation of Pharma Patents’, (2019) Pharm Technol <www.pharma.nridigital.com>.

⁵⁸ M Zhang, X Zhu and R Liu, ‘Patent Length and Innovation: Novel Evidence From China’ (2024) 198 Tech Forecast & Soc Change <www.sciencedirect.com>.

⁵⁹ R Dreyfuss, ‘Are Business Method Patents Bad for Business?’ (2000) 16 Santa Clara High Tech L J 263; see *Bilski v Kappos* 561 U.S. 593 (2010).

products and distribution and opposing mergers of companies involved in the manufacture and distribution of pharmaceutical products.⁶⁰ Another approach is to provide expedited regulatory marketing approval pathways for generic pharmaceuticals so that as soon as a drug comes off patent, competing products can be brought to market quickly.⁶¹ The combined effects of these balancing factors means that the United States, despite its strong patent laws, has historically been one of the most active markets for generic pharmaceuticals in terms of achieving rapid introductions and low prices. However, in recent years the prices of generic drugs in the United States have started to increase, raising questions as to why this is occurring.⁶²

A second question arises as to the effect of such regimes on jurisdictions that do not have locally based or large innovative pharmaceutical industries. Many of these are developing economies which have put in place such regimes because of trade agreements signed with developed economies. Such jurisdictions do not have the capacity to put in place the checks and balances on pharmaceutical patents that are evident in larger economies. An empirical study of the effects of the implementation of “TRIPS-plus” provisions such as patent term extension, patent linkage and enhanced data protection in developing economies has demonstrated that the stronger pharmaceutical monopolies created by TRIPS-plus intellectual property rules are generally associated with increased drug prices, delayed availability and increased costs to consumers and governments. There is evidence that TRIPS flexibilities (such as compulsory licenses, expedited regulatory processes or parallel imports) can facilitate access to medicines although their use is limited to date.⁶³

This does not mean that developing economies will not develop the institutions that promote new pharmaceuticals. For example, India for many years only provided process patents for pharmaceuticals and built up a significant generics industry in this environment. India was required to introduce product patents in 2005 when it implemented TRIPS. By this stage, its research infrastructure was sufficiently developed to be of real interest to the large pharmaceutical companies. Today many have a significant presence in India because

⁶⁰ See, for example, ‘Overview of FTC Actions in Pharmaceutical Products and Distribution’ (US Federal Trade Commission, 2019).

⁶¹ See discussion in part 4.4.4 where Canada’s exception of this nature was the subject of WTO dispute settlement.

⁶² See R Gupta, ND Shah and JS Ross, ‘Generic Drugs in the US: Policies to Address Pricing and Competition’ (2018) Clin Pharmacol Ther <www.pubmed.ncbi.nlm.nih.gov>.

⁶³ B Tenni and others, ‘What is the Impact of Intellectual Property Rules on Access to Medicines’ (2022) Global Health <www.pubmed.ncbi.nlm.nih.gov>.

with adequate patent protection, R&D activities are so much cheaper. But this is a fine policy balance for India as it still has a large generics industry which it wishes to retain. India, therefore, has firmly opposed to such TRIPS plus measures for pharmaceuticals such as extended patent term, patent linkage and enhanced data protection.

Obviously, APEC members will need to take quite different approaches to the patenting of pharmaceuticals based on their individual circumstances. Yet there is much APEC can do as an incubator of ideas to share experiences on the way forward. Despite having two sub-fora of relevance – the Intellectual Property Experts Group and the Life Sciences Innovation Forum – there is little evidence of such discussions taking place. In this respect, a project promoted by Korea to share experiences in the Intellectual Property Experts Group on the operation of patent linkage for pharmaceuticals is a welcome exception.⁶⁴ But post-COVID-19, there is also an urgent need to consider whether and the extent to which patents and patent policies have delayed the distribution of vaccines to poorer economies with the greatest need.

⁶⁴ APEC Intellectual Property Rights Experts Group, 'Patent Linkage System for Intellectual Property Rights and Public Health Harmonisation' (2023).

2.7 Intellectual Property and Climate Change

A 2020 paper on whether the international response to COVID-19 might also spur cooperation on climate change stated:⁶⁵

The climate emergency is like the COVID-19 emergency, just in slow motion and much graver. Both involve market failures, externalities, international cooperation, complex science, questions of system resilience, political leadership, and action that hinges on public support. Decisive state interventions are also required to stabilize the climate, by tipping energy and industrial systems towards newer, cleaner, and ultimately cheaper modes of production that become impossible to outcompete.

Climate change is the existential challenge of our age. The international community has recognised that effectively combatting climate change will require a concerted international effort. Under the Paris Agreement, participating members have sought to limit the rise in average global temperature to 1.5 degrees Celsius. To achieve this, individual participants will need to achieve net zero emissions by 2050, with most now committing to do so. This will require significantly reduced emissions in key sectors such as electricity generation, transportation, manufacturing, building and agriculture.

The Paris Agreement and subsequent revisions all call for technological solutions to mitigate climate change and for developed countries to transfer technology to developing countries. Many, but not all, of these technologies are subject to patents (and trade secrets). The question arises as to what role the intellectual property system has in combatting climate change. For example, should climate friendly technologies be subject to compulsory license of patents and trade secrets?

Like intellectual property policy, the response to climate change requires governments to deal with the issue of market failure. The market failure underlying climate change results, in part, from the fact that firms and individuals do not currently bear the full costs of the emissions that they produce. This is why governments are increasingly interested in putting a price on carbon through mechanisms such as emissions trading schemes.

International Energy Agency (IEA) analysis, however, shows that even with the painful process of establishing a price for carbon, current climate targets can only be achieved by a major acceleration in clean energy innovation, as many of the technologies required in the coming

⁶⁵ C Hepburn and others, 'Will Covid-19 Recovery Packages Facilitate or Retard Progress on Covid 19?' (2020) 36 Ox Rev Econ Policy 359.

decades to bring down CO2 emissions are only at the prototype or demonstration phase today. It estimates around half the emissions reductions to get to net zero by 2050 may need to come from technologies that are not yet on the market.⁶⁶

The question arises as to what role intellectual property instruments can play in addressing the market failure associated with climate change. The consensus is that patents are rather poorly suited to this role. The IEA analysis shows that the number of patents for clean energy technologies generated amongst its members has grown slowly. A subsequent study shows similar results in the growth in overall patent numbers relating to these and other climate friendly technologies.⁶⁷ To assess whether the contribution of patents might be improved, Tabrez Ibrahim has explored several options (particularly in developed economies) for reform. These include:

- **Eco-patent commons** – An increasing number of firms across different industries have pledged to limit their ability to enforce patents in order to promote new technology and pursue societal goals. Under this approach, patent assets are retained by their owners and benefits are conferred to all third parties (not necessarily the participating contributors) so as to promote collaboration between businesses and accelerate innovation. However, attempts to establish these have generally been disappointing in terms of leading to increased innovation or subsequent patenting.
- **Fast track programmes** – several patent offices have put in place programmes aimed at expediting patent examination for clean and sustainable technologies. These programmes have differed significantly and again, results have been mixed. The United States Patent and Trademark Office, for example, launched such a programme in 2009, only to close it again in 2012. However, increasingly both environmentalists and academia have recognized the role that such programmes could play and have called for them to be harmonised to maximise eligibility across jurisdictions and to make participation easier and more efficient.
- **Patents rewards system** – patent rewards is a concept aimed at addressing the market failure associated with climate change. In effect, a rewards proposal is akin to a prize, where an inventor is paid an amount in the form of prize and the invention is then placed into the public domain. While such an option has been the subject of much scholarly debate, no jurisdiction has yet implemented such a system.⁶⁸

⁶⁶ 'Patents and the Energy Transition' (International Energy Agency, 2021).

⁶⁷ M Ghodsi and Z Mousavi, 'Patents as Green Technology Barometers: Trends and Disparities' (Vienna Institute for International Economic Studies, 2023) <www.wiiw.ac.at>.

⁶⁸ T Ebrahim, 'Clean and Sustainable Technology Innovation', (2020) 45 Curr Opin Environ Sust 133.

The disappointing overall contribution of patents to the development of cleaner technologies leaves the complicated question of whether patent regimes contribute to or hinder the transfer of clean and sustainable technologies from developed to developing economies. In a survey of this issue, Hall and Helmer reached the conclusion that the limited existing empirical evidence suggests that developing economies can be split into two groups. In the first group are emerging economies, such as Brazil, China, India, and Mexico, where a strengthening of intellectual property rights will most likely have a positive impact because these economies have large enough markets and sufficiently strong institutions to obtain the benefits. The second group comprises poor developing economies where there is no evidence that strengthened intellectual property rights will lead to improved technology transfer.⁶⁹

The problem for the Asia-Pacific region is that as developed and stronger developing economies seek to rein in their emissions through such mechanisms as a higher price for carbon, production in emissions intensive industries may increasingly shift to poorer developing economies which have not put in place such mechanisms. This is known as the challenge of “carbon leakage”. There is a shared common interest in ensuring that new cleaner technologies can be effectively utilised in poorer developing economies if this challenge is to be addressed. Given the strong commitment to tackling climate change under the Putrajaya Vision 2040 and the Aotearoa Plan of Action, this is an area where APEC should seek to play a role in terms of promoting improved practices in all its member economies.

⁶⁹ B Hall and C Helmer, ‘The Role of Patent Protection in Clean/Green Technology Transfer’ (NBER Working Paper, 2010) <www.nber.org>.

2.8 Intellectual Property and the Digital Economy

Digital technologies are driving transformative change. Economic paradigms are shifting. New technologies are reshaping product and factor markets and profoundly altering business and work. The latest advances in AI and related innovations are further expanding the digital revolution.

Intellectual property regimes have been struggling to keep up with the changes. NZPECC's policy primer, "Economic Issues Posed by the Digital Economy",⁷⁰ outlined the challenges in this area. It argued that the digital economy has greatly improved the ability of creators, authors, businesses and internet service providers to disseminate goods, services and content. This in turn has increased the incentives to innovate—but has also highlighted that intellectual property settings now may be too strong in some areas and too weak in others to promote necessary innovation. For example, copyright owners seek long term protection of substantive rights, whereas users seek less protection and further exceptions – in order to promote innovative uses. Significant policy development is still required to develop intellectual property provisions that are appropriate for all aspects of the digital age.

The Primer went on to show that the provision of content in the digital economy – including content and data that may or may not be protected by intellectual property rights – takes place on a quite different basis than in the physical economy.

Digital delivery services are a means of distributing such content, but services and intellectual property policies are often treated as separate disciplines. This nexus between digital delivery of services and intellectual property is important, and this relationship needs to be better understood. Another NZPECC supported project showing the linkages between intellectual property and services maps out this relationship in a detailed manner.⁷¹

The enforcement of intellectual property rules in the digital environment is a particularly vexed issue. For example, the digitisation of major industries – music, movies, games, journalism – has created unprecedented intellectual property challenges. It is technologically simple, and cheap, to copy and distribute products that used to necessitate the purchase of a physical medium. The Internet is also used to sell counterfeit products from pharmaceutical goods to luxury handbags, creating new challenges for patent and trade mark holders. In the digital economy, law enforcement functions once carried out

⁷⁰ 'Primer on Integration Issues Posed by the Digital Economy' (PECC Signature Project on the Digital Economy, 2021) <www.nzpecc.or.nz>.

⁷¹ For a detailed analysis of the linkages among IP and services see S Frankel and N Melashchenko 'IP-Services Research Project' <www.ipservices.nz>.

by the state have shifted, at least in part, to the private sector. At the centre of the digital economy are the private companies that serve as the conduits and content intermediaries over which information flows. Search engine companies sometimes factor copyright infringement history into algorithms, demoting search engine rankings of sites alleged to be repeat offenders. Internet service providers deploy graduated response approaches, also called three-strikes policies, that cut off access to customers that repeatedly engage in illegal file sharing.⁷² Governments have sought to underwrite this enforcement by providing legal support outlawing the circumvention of “digital locks” known as technological protection measures. Some choose to make such circumvention illegal for all purposes while others only choose to make circumvention illegal for the purposes of infringing copyright.

The use of intellectual property rights by digital firms and platforms to protect themselves against competitors is a cause for increasing concern.⁷³ Such firms often use a large portfolio of patents and trade marks to achieve this. Some competition analysts are concerned that the positions of large digital platforms are becoming increasingly entrenched. As such intellectual property rights may not be serving to promote innovation and dynamism in the longer term, particularly in highly networked digital sectors where incumbency is such an advantage.⁷⁴

This once again points to the importance of strong competition policy and law to regulate the manner in which intellectual property rights promote innovation in the digital economy. If firms are shielded from competition in this sector, there are fewer incentives for them to innovate or if they do innovate, this is often to find new ways to continue to exclude competitors rather than develop new technologies that promote consumer welfare. In an environment characterised by highly concentrated, strongly entrenched market power, the risk of permanent damage to competition and innovation is particularly high.

The challenges to intellectual property regimes posed by the digital economy have increased with the advent of AI. The details of how intellectual property and AI interact are not fully understood, although both intellectual property owners and users are putting governments under pressure to act. And in major jurisdictions there are cases over the ownership of AI created works. Digwatch, an online technology platform has, on an initial basis, outlined some of the benefits and challenges of AI for intellectual property.⁷⁵

⁷² L De Nardis, Introductory Chapter in ‘Mapping the Frontiers of Trade and Intellectual Property’ (CIGI, 2017) <www.cigionline.org>.

⁷³ See R Giblin, ‘Evaluating Graduated Response’ (2014) 37 Colum J L & Arts 147.

⁷⁴ H Schmidt, ‘Competition Law and IP Rights: Not So Complementary – Time for a Realignment of Goal’ (2019) W Comp <www.eprints.soton.ac.uk>.

⁷⁵ See Digiwatch, ‘Intellectual Property Rights’ <www.dig.watch>.

Among the benefits, AI could:

- enable efficient R&D, leading to new inventions and patent applications. The collaborative nature of AI research promotes knowledge sharing and open-source projects, fostering innovation and learning in the field;
- help enforce intellectual property rights. For copyright, AI could help identify plagiarism, unauthorised copying, and distribution of copyrighted materials. AI algorithms can detect similarities and flag potential violations by comparing digital content against existing databases and reference materials;
- streamline the patent examination process. AI algorithms can analyse vast amounts of previous art and technical literature to determine the novelty and non-obviousness of inventions;
- improve the process of trade mark search, registration, and monitoring. AI can analyse vast databases of existing trade marks, detect potential conflicts or similarities, and make suggestions for trade marks that can be registered. It can further automate certain aspects of the trade mark examination process, reducing the workload for trade mark offices and expediting the trade mark application review process. Trade mark owners can also employ AI to monitor online platforms, marketplaces and social media to identify trade mark infringement or counterfeit products.

On the other hand, the rise of AI could present threats to maintaining intellectual property rights. There is considerable ongoing litigation about AI large learning models wholesale copying large numbers of copyright works as the data from which they “learn”. One part of the issue is whether this is wholesale copying or whether copyright’s flexibilities, such as permitted acts or fair use, somehow permit such uses of copyright works. Also, AI algorithms can produce large volumes of content that may infringe existing copyrighted material. AI also enables AI-assisted infringement, where algorithms automate and streamline intellectual property infringement activities, facilitating piracy and counterfeiting.

An important point that often appears to get overlooked in the discussion and debate about development and training of GenAI tools is somewhat overly broad claims that undertaking (computational) analysis of copyright works, without their wholesale copying, somehow breaches or otherwise infringes copyright in those works. However, Article 9.2 of the TRIPS Agreement, which provides that copyright protection shall extend to expressions and not to ideas, procedures, methods of operation or mathematical concepts as such, there is no protection of ideas and information in tangible expressions of such. Authorising the analysis, whether by humans directly or indirectly, by using computers and algorithms to read and understand the ideas and information expressed, is not on its own infringement of

an exclusive copyright right.

In the area of patents, requirements for patentability include the elements of inventiveness and non-obviousness. As AI systems are now capable of producing novel inventions and discoveries, it is challenging to determine whether an AI-generated invention satisfies requirements for patent protection and whether to attribute inventiveness to human intervention or AI. At the time of writing, in New Zealand, Australia, the United States and the UK, applications for AI to own a patent for a wholly AI created invention have been refused. The only Patent Office to accept AI as an inventor is South Africa. Inventions that use AI, but are not wholly AI created, are patentable in most jurisdictions.⁷⁶

More fundamentally, AI is magnifying the deep-set tensions between intellectual property regimes and the digital economy, and the issues are far from settled. On the one hand, intellectual property rights were conceived for products and works in an analogue environment that could be bought and sold individually and protected as such. The rules have been developed to address several issues in the digital environment, but the framework has remained the same and has not fully adjusted to address the protection of intellectual property and legitimate access to uses of it in the online world. There remains, for example, considerable debate about the extent to which infringement online should be protected and what exceptions should prevail, such as exceptions for libraries and education. AI will further highlight the fact that the digital economy is highly networked, that content is bundled and that consumers expect instantaneous access. It is also likely to lead to cumulative innovation at a speed not previously witnessed, leading to further calls for reform of intellectual property regimes.

On the other hand, there is an important policy question to be asked about AI and the extent to which the intellectual property rights are needed to generate AI outputs to incentivise and encourage more innovative and creative works for the wider public consumption and benefit? If the basic objective of the intellectual property system is to encourage innovation and creativity, does the system need to provide any protection to the outputs of AI to encourage more outputs and investment? If intellectual property protection was not needed to get to where we are now, why is intellectual property protection needed to go further?

⁷⁶ EP Cloud, C Dom and TM Hopfinger, 'AI Inventorship: Navigating Patent Rights Around the Globe' (Sterne, Kessler, Goldstein and Fox, 2024).

2.9 Intellectual Property and the Creative Sector

Human ingenuity can underpin any economic activity, making it difficult to define what is meant by the “creative economy”. UNCTAD and the United Nations Development Programme (UNDP) consider it as an “evolving” concept based on creative assets with a potential to generate economic growth and development. It comprises a diverse set of knowledge-based economic activities, such as advertising, architecture, arts and crafts, design, fashion, film, video, photography, music, performing arts, publishing, research and development, software, or broadcasting. It thus lies at the interface between human creativity, ideas, culture, intellectual property, knowledge and technology.⁷⁷

The creative sector is large with cultural and creative industries contributing significantly to the world economy. The cultural sector accounts for 3.1 per cent of global gross domestic product (GDP), while UNCTAD estimates that in 2020, creative goods and services represented 3 and 21 per cent of total merchandise and services exports respectively. Trade in creative services has been growing much more quickly than trade in goods, in part spurred on by online trade during the pandemic. Global exports of creative goods increased from US\$ 419 million in 2010 to US\$ 524 million in 2020, while exports of creative services increased from US\$ 487 billion to almost US\$ 1.1 trillion during the same period.⁷⁸

As with other knowledge and innovation, intellectual property rights provide the potential incentives to provide societies with optimal levels of creativity.

⁷⁷ UNCTAD, *Unlocking the Potential of Intellectual Property Rights for the Creative Sector*, 2021.

⁷⁸ UNCTAD, *Creative Economy Outlook*, 2022.

Creative output can be protected through many forms of rights as follows:

Protecting Creativity Through Intellectual Property Rights⁷⁹

Copyright for authors of original works

- Books, music, paintings, plays, architecture, dance, software etc
- Prevents others from copying, communicating to the public (e.g. through the internet)

Related rights for intermediaries that make works available to an audience

- Performers (actors, musicians)
- Producers of phonograms (record labels)
- Broadcasting organisations

Intellectual property rights protect creativity through reputation

- Trade marks designate origin (producer)

Intellectual property rights protect creativity in appearance

- Industrial designs: outer appearance of a product, not its technical function
- Textile patterns, design of clothes, shapes of smart phones and other devices, ornamental elements of architecture etc
- Technical functioning protected by patents or utility models

Many areas of the creative sector are dominated by SMEs which find it difficult to monetise their creativity and enforce their intellectual property rights. Many developing and even some developed economies do not have sufficiently strong legal and administrative mechanisms under which the collection and distribution of royalties, as well as the enforcement of intellectual property rights, can take place systematically.

The growth of the digital economy has created major new opportunities for the creative sector as well as challenges in using and

⁷⁹ C Spenneman, 'Presentation on Intellectual Property Rights' (UNCTAD, 2019).

enforcing intellectual property rights. As a 2013 World Economic Forum paper states:

This creates challenges – and opportunities – for the global intellectual property system arising from multiple trends. Distribution models are shifting towards instantaneous, ubiquitous access, sometimes using social networks, and increasing the reach of content creators. New technologies are allowing content creators to engage directly with their audiences in innovative ways and enabling new mechanisms for collaborative content generation. Business models are shifting as well, with licenses for content access often replacing ownership of copies of content. In addition, increased cross-border movement of content is raising jurisdictional challenges, including potential incompatibilities between national legal systems.⁸⁰

The paper recommended that governments should undertake regular reviews of copyright and related frameworks in the digital era. In conducting these reviews, governments should not only study the changing creative content landscape in a world in which much of the population now has at least one internet-connected device, but also move to concrete action, as appropriate where evidence demonstrates such action is required, to update national copyright laws and coordinate them between jurisdictions. Policy makers should also develop frameworks enabling increased lawful access to content via the Internet, thereby reducing the incentives to obtain pirated content.

In 2016, New Zealand's Ministry of Business, Innovation and Employment produced a discussion document that outlined and surveyed these issues for New Zealand's creative sector. It found that the sector was incredibly diverse, but that copyright clearly mattered to most creators. At the same time, many were also aware that digital technologies provided new opportunities to disseminate works as well as new ways to monetise content. Furthermore, these technologies were broadening the scope of creativity as creators could draw much more on the work of others to inspire future creativity or work with other creators to produce more collaborative output. The review noted the difficulties in enforcing intellectual property rights, especially across borders but found that digital technologies also provided creators with additional options to enforce these rights.⁸¹

⁸⁰ 'Intellectual Property Rights in the Global Creative Economy' (*World Economic Forum*, 2013) <www.weforum.org>.

⁸¹ 'Copyright and the Creative Sector' (Ministry of Business, Innovation and Employment, 2016) <www.mbie.govt.nz>.

Conclusion

As noted in the introduction to this chapter, policy makers might explore the cross sector issues when framing intellectual property rights so that their effects are understood and they can be placed in their proper context. This Chapter has discussed cross sector issues including:

- The Interaction of Intellectual Property and Competition Policies
- Interests of Developing Economies
- The Role of Intellectual Property in Promoting Technology Transfer
- The Interests of Indigenous Peoples
- Intellectual Property and SMEs
- Patents and Pharmaceuticals
- Intellectual Property and Climate Change
- Intellectual Property and the Digital Economy
- Intellectual Property and the Creative Sector

Chapter 3

Designing Intellectual Property Regimes

Designing Intellectual Property Regimes

As discussed in Chapter 1, policy makers and legislators who design intellectual property regimes are working at the intersections of competing goals - driving innovation and creativity, and the interests of different and various actors. Their task is to address those interests in ways where they work together to achieve a complex range of goals for the overall benefit of society. This is often called balancing interests, but it can be much more complex than balancing interests that appear to be in opposition; rather the task will involve looking at the multiple interests of creators, inventors, authors and owners of intellectual property (whose interests both coincide and diverge) and users and consumers of intellectual property (whose interests may coincide and diverge particularly where users are also innovators or owners). In each area of intellectual property (be it copyright, trade marks, patents or others) these considerations involve different detail and actors and, consequently, different interests. And the issues are not static. Intellectual property, particularly because of its relationship with innovation, is inherently dynamic and its goals can evolve depending on the relevant economic circumstances and stage of development.

There is always the risk that the dynamism of science and technology (inventiveness and creativity) will outpace any legislative endeavours. This can give the appearance of social norms and legal norms not quite lining up. Disruptive technologies can highlight this problem. Copyright law for example has gone through many upheavals and changes with the evolution of the internet and platforms that operate on it. That process has not ceased but rather continues to develop and now AI is part of the mix.

Intellectual property related legislative responses and strategies to

address the effects of these major technological events vary.⁸² The optimal intellectual property strategy to adopt will also vary. It may involve detailed rules addressing new technologies, relying on the courts and/or business activity to determine outcomes or even waiting to see. Between major events there is a variety of cultural, scientific and technological developments that intellectual property systems respond to. An optimal intellectual property regime is one that is capable of effectively addressing these changes in between major legislative and policy reform.

In this Chapter we outline three framework issues that are vital to designing intellectual property regimes:

- optimal policies for intellectual property systems in terms of the strength of rights, right holders' obligations and the use of exceptions;
- robust intellectual property institutions including in such areas as the development of intellectual property laws and putting in place processes for the granting and enforcement of and challenges to intellectual property rights; and
- balanced strategies for the enforcement of intellectual property rules so that they provide adequate protection for owners of intellectual property, for those seeking to innovate and create in future, and for consumers.

⁸² Some responses may not be primarily intellectual property law developments, but others will use intellectual property law to address effects of new technologies.

3.1 Optimal Intellectual Property Policy

How should an economy use intellectual property for its own development? How should an economy ensure its local publishing industry can produce high-quality literature, works of art and creative products and that its consumers have access to such goods from overseas at affordable prices? How can an economy ensure that it has a local film industry or a local sound-recording industry and that its citizens have good access to movies and music from Hollywood and London? How can an economy ensure that its own authors and copyright owners are able to thrive and produce works for the local culture? How can the environment be favourable to creating works of authorship that are both unique to that culture and have the potential to, but not necessarily need to, transcend boundaries? How should an economy ensure that its citizens can purchase high-quality pharmaceuticals even when they are not manufactured locally? How can an economy retain its publicly funded health service and subsidised pharmaceutical systems? How can an economy encourage research and development within its borders and also ensure that technology is transferred from overseas? How can local businesses ensure that their brands and trade marks help them achieve a competitive edge in the global marketplace? How can businesses be structured so as to achieve optimum gains from intellectual property when the local market is of a small scale and the international market may give better returns?

Susy Frankel *Test Tubes for Global Intellectual Property Issues : Small Market Economies* (CUP, 2015)

The potential questions for intellectual property policy makers are many. What makes an optimal intellectual property policy is not an easy question to answer and the answers will not be the same for all economies, or even for all intellectual property issues within a single economy or regional grouping. The relationship between protecting intellectual property and using intellectual property for economically, culturally and socially desirable outcomes, both within an economy and across borders, is at the heart of global issues in intellectual property.⁸³

⁸³ Above n 46, at 2–3.

An optimal intellectual property policy is one that reflects the economic and cultural status of an economy. We do not suggest this is either one dimensional or necessarily easy to define. Often international intellectual property policy makers adopt the United Nation's language of developed, developing and least-developed members. (These categories may now be better understood as high-, upper-middle-, lower-middle-, and low-income economies). Within those categories there is significant variation and that variation is relevant to the optimal intellectual property policy. One size does not fit all. So, for example, a developing economy is usually best placed to have policies that encourage the development of local innovation and cultural activity. In contrast, a developed economy might seek stronger protection for its incumbent industries and be more flexible around those that it seeks to develop. Many economies and therefore intellectual property policies reflect a mix of these goals. The United States, for example has relatively strong protection for its pharmaceutical industry through patents and trade secrets, but much lesser protection for traditional knowledge. Economies that are not at the forefront of innovation generally gain little from having strong domestic intellectual property protection. They may have a strong level of protection because they have traded this off for international trade gains, particularly market access for their own exports. The products of intellectual property, often called knowledge-based products, such as education materials and patented pharmaceuticals, are usually more expensive in relative terms than the commodities that developing economies export. Even if developing economies have agreed to such standards, the imposition of high standards of intellectual property protection can be seen as imbalanced as it transfers resources from poorer to wealthier economies.

The counter argument is that investment in knowledge-based industries is only made in exchange for intellectual property protection. In the right circumstances, intellectual property can create strong incentives for domestic innovators and creators and for foreign businesses to invest in such domestic innovation. Intellectual property can also create technology transfer and even inspire governments to support industries that move their economy towards more domestic innovation and greater productivity. In an ideal world, the outcome might be that if all economies protected intellectual property to the same high level, then all would reap the benefits of inspiring domestic innovation and exporting it. But this pro-harmonisation story is one dimensional and does not factor in cultural differences or market size, let alone factors that, in addition to intellectual property, are important for innovation such as high levels of education and capacity, and the availability of funding and foreign direct investment. Whether foreign investment occurs in any economy will vary.

These arguments were relevant to the development of a global intellectual property system that requires minimum levels of

protection. Now that such a system is in place these arguments remain relevant to both its further development and the implementation of protection and flexibilities at domestic level. Put differently, while some seek harmonisation of global intellectual property law (beyond minimum standards) others seek a form of distributive justice. This is relevant to the international framework and debate which draws on the experience of relevant national and regional laws and policies.

Perhaps paradoxically, the relationship between national intellectual property policy goals and the law may alter if seen as a global rather than purely domestic issue. For example, a law created in the name of supporting innovation at a domestic level may do exactly the opposite in the international arena. For example, a developed technology exporting economy may choose to extend patent term for pharmaceutical patents and protect new uses of existing pharmaceutical compounds when pharmaceutical companies in that economy research, develop, manufacture and even control worldwide distribution of pharmaceuticals. The same rationales do not apply to economies that do not do these things. Yet, in the field of intellectual property, some economies will adopt laws that are based on policies or evidence relating to the economic conditions of other economies. While most often described as developed economy policies being forced on developing economies, this phenomenon is also seen in small-developed economies, which also sometimes adopt ill-fitting intellectual property laws.

The matter may be further complicated by the large technology exporting economies having the capacity to adopt domestic policies to ameliorate some of the effects of the greater levels of intellectual property policy. Examples include the US approach to fair use of copyright or countries that subsidise the purchase of pharmaceuticals through governments or insurance. Such ameliorating policies do not necessarily spill over into other economies. The optimal intellectual property framework at a domestic level should include both protections and exceptions. Framing the exceptions while maintaining the internationally required level of protection requires expertise, strong institutions and resourcing.

Intellectual property regimes at national level are now framed by international agreements that are already in place (such as the TRIPS Agreement) and ongoing negotiations for bi-lateral and plurilateral expansions of international protection. Such regimes will also be framed by domestic interests and in some circumstances foreign business interests. Balancing these interests may result in an intellectual property regime that reflects more than just intellectual property and innovation policy. Thus, the intellectual property system in place might reflect trade policy more than it does optimal intellectual property settings. These issues are discussed in greater detail in Chapter 6 on the international dimensions of intellectual property policy.

Additionally, intellectual property law is often called upon to consider and address other goals, such as supporting health, and various interests which it impacts, such as those of consumers. These goals and interests often involve multiple issues and stakeholders. That is hardly surprising because all of humanity might claim to have an interest in culture and innovation and their outputs. Most of these other interests are frequently about access and use of the products of innovation and creativity. Access and use need to be reconciled with creativity and innovation goals. In global markets, access issues include both affordability and availability.

In spite of the challenges outlined above, it is possible to consider what structural features an optimal intellectual property regime should have. These include:

- an adequate level of protection to achieve the innovation and incentive rationales of intellectual property;
- sufficient flexibility:
 - to encourage a diversity of creators and innovators;
 - to enable substitute products where they are not infringing; and
 - to develop follow on innovation when the intellectual property protection expires; and
- features to ensure both protection and flexibilities meet important social needs and goals where intellectual property is relevant such as health, education and adaptation to and mitigation of climate change

3.2 Intellectual Property Institutions

Both internationally (sometimes regionally) and at national level, robust and flexible institutions are needed to support, maintain and develop optimal intellectual property regimes. Once the lawmakers have framed the law, its ongoing development and enforcement lies in the hands of institutions and the actors who staff them as well as the stakeholders who use them. Without strong institutions there is less likely to be balanced processes in the registration of rights or enforcement outcomes. Such institutions can be expensive to maintain and resourcing issues cannot be underestimated. In some instances, regionalism can address some of these issues but not always, particularly where national goals differ within regions where, for example, some economies have different development needs and economic goals to others.

3.3 International Institutions

International intellectual property institutions set the framework of global intellectual property policy. For that to work the institutions must be both well-resourced and represent multilateral interests. The global regime is important first because many intellectual property products are traded across borders and global policy sets minimum standards of what intellectual property laws should be in most jurisdictions. That is so even if the laws at national level differ because the global regime allows for differences and some flexibility.

The two key international institutions are WIPO and the World Trade Organization (WTO). Several other international institutions are relevant to intellectual property, however, intellectual property is not as central to their functions as it is for WIPO and the WTO. These institutions include the World Health Organization (WHO), the United Nations (which frequently comments on the effect of intellectual property on human rights) and international environmental organisations such as the Convention on Biological Diversity.

The organisation that eventually became WIPO was established in the

late 19th century and it negotiated two ground-breaking conventions that remain a significant part of the international intellectual property framework today. Those Conventions, which WIPO continues to administer, are the Berne Convention for the Protection of Literary and Artistic Works (which sets minimum standards for the protection of copyright)⁸⁴ and the Paris Convention for the Protection of Intellectual Property (which provides certain standards and rules for what was then called industrial property including patents, trade marks and designs).⁸⁵ There have since been several revisions to these two Conventions and WIPO has also negotiated more treaties, including treaties to address digital issues in copyright and performer's rights,⁸⁶ and treaties to facilitate the international registration of patents (Patent Cooperation Treaty⁸⁷) and trade marks (The Madrid System)⁸⁸.

The WTO administers the TRIPS Agreement which was part of the single undertaking of the Uruguay negotiations that gave rise to establishment of the WTO. The TRIPS Agreement is fundamentally different from other key of agreements of the WTO such as those which address trade in goods (GATT and its related agreements), trade in services (GATS). The nature of the TRIPS Agreement requiring minimum standards at domestic law is the key difference from the agreements relating to goods and services that focus on market access and barriers to trade. Although intellectual property standards can affect access to markets, TRIPS is not primarily an agreement directed at liberalising market access for goods or services but rather the Agreement requires protection of intellectual property including rights which attach to traded products. Further the intellectual property is itself tradable independently of any goods or services to which it relates.

The TRIPS Agreement requires that each WTO Member enable certain activities, such as registration of intellectual property rights which requires certain national institutions, such as registration offices. The Agreement also requires the involvement of other institutions, such as courts and administrative tribunals (acknowledging that there are different legal institutions in different jurisdictions) be involved in enforcement of intellectual property rights.

⁸⁴ Berne Convention <www.wipo.int>.

⁸⁵ Paris Convention <www.wipo.int>.

⁸⁶ See WIPO, Administered Treaties <www.wipo.int>.

⁸⁷ See WIPO, Patent Cooperation Treaty <www.wipo.int>.

⁸⁸ See WIPO, Madrid System <www.wipo.int>.

3.4 National Institutions

In many jurisdictions intellectual property law has predominantly been a bundle of statutes which are collectively referred to as ‘intellectual property’ but are not necessarily coherent in their nexus either with innovation or with cultural policy, even though as Chapter 1 discusses, these are key rationales for intellectual property protection. Often different parts of government administer these statutes, and they are recognised, in varying degrees, as part of business, science and innovation, agricultural, health and cultural policies.

In addition to the policymakers, national institutions of relevance to intellectual property law are registration offices, administrative offices and the courts. These institutions have differing and complementary roles in developing and maintaining intellectual property policy and laws. Other arms of government may also be relevant to intellectual property. These can include health regulators that approve the marketing of pharmaceuticals and authorities that govern market exclusivity arrangements. These regulators may or may not directly interact with intellectual property offices. One example of such interaction is patent linkage where the regulator of pharmaceutical products, subject to a patent or patents, may be required to notify the relevant patent office and/or the patent owner.

In some jurisdictions, there are Copyright Boards or Tribunals that hear disputes over licences for the use of copyright works. In some instances, these Boards or Tribunals regulate all copyright licensing schemes that involve multiple owners and users. These institutions may also be involved in developing copyright related to competition policy.

Registration offices are responsible for registering intellectual property rights that require registrations. These include patents, plant variety rights, trade marks and some designs. In some countries there may be registration offices for geographical indications and traditional knowledge matters (see Chapter 5). Copyright is not required to be registered at international law. However, some economies do register copyright. For example, the United States, has a Copyright Office which registers copyright for domestic law purposes and also makes and advises on copyright policy for the United States.

Registration offices usually maintain publicly available registers of intellectual property rights. This enables interested parties to see what is registered and to avoid infringing registrations. These offices usually employ examiners whose role is to assess whether applications for registration of intellectual property rights (patents, plant variety rights, trade mark and designs) meet the relevant statutory criteria. Such offices are responsible for upholding and maintaining registrability criteria before the exclusive rights that flow from the registration of an intellectual property rights are granted. Intellectual property offices may also be involved in pre-grant opposition procedures and post-grant revocation procedures. Through exercising these functions

intellectual property offices should represent the public interest in both granting intellectual property rights and also making sure they are not arbitrarily granted. Such offices are usually heavily influenced by those who register intellectual property rights and often have advisory committees and expert committee based on business interests.⁸⁹

To be effective, an intellectual property office must be resourced with sufficient experts to register rights and to ensure as far as is practical that those rights meet the necessary criteria for registration under domestic law. This can be expensive to maintain and so offices have differing standards of examination and internal procedures. Sometimes this can incentivise regional and international regulatory cooperation.

Despite the lack of a global registration system, there is some cooperation among intellectual property offices. In the European Union this involves regional institutions. In other regions it is more likely to involve regulatory cooperation between relevant government departments where that cooperation is politically feasible. The New Zealand Intellectual Property Office (IPONZ) and the IP Australia, for example, cooperate on many aspects of their work and regularly exchange information about their processes. Even though there is this cooperation the two jurisdictions continue to have separate registration regimes.⁹⁰ Because registration is territorial, there are agreements at the international level that make registration of similar rights, in more than one jurisdiction, easier for the applicant. Where protection is sought in several jurisdictions, these agreements standardise certain procedural requirements, even if registration is ultimately a matter of national discretion. Examples of these agreements include the Patent Cooperation Treaty, the Patent Prosecution Highway and the Madrid System for trade mark registration.

The decisions of intellectual property offices are subject to various review processes. Registration related decisions that have been made by examiners can be opposed before grant in some jurisdictions and in most jurisdictions can be revoked after grant. Decisions of such offices are often subject to review by domestic courts. In some jurisdictions these reviews are more administrative law focussed than in others.

In addition to hearing disputes about whether intellectual property rights should be registered, the courts are usually responsible for

⁸⁹ For criticism of this in relation to patents see P Drahos, *The Global Governance of Knowledge: Patent Offices and their Clients* (CUP, 2005).

⁹⁰ S Frankel and M Richardson, 'Limits of Free Trade Agreements - The New Zealand/Australia Experience', Victoria University of Wellington Legal Research Paper No. 38/2011 <www.ssrn.com>; C Antons and R Hilty (eds), *Intellectual Property Aspects of Free Trade Agreements in The Asia-Pacific Region* (Kluwer Law International, 2011).

hearing cases about the infringement of intellectual property rights. In some jurisdictions this is done by general courts while in other jurisdictions there are specialist intellectual property courts. Examples include in the United States Federal Circuit for patent appeals from state courts, the European Union Unitary Patent Court, the United Kingdom Patent Courts and specialist divisions of the Courts of England and Wales, and, in China, specialised courts in Beijing, Shanghai, and Guangzhou and the IP tribunal of the Supreme People's Court. Whether specialist courts or general courts are superior and/or produce better results is the subject of a large literature and ongoing policy assessment, which often depends on the practices of the relevant jurisdiction.

WTO Members must provide civil procedures and remedies for the infringement of intellectual property and criminal procedures. These minimum standards of enforcement are found in the TRIPS Agreement which recognises that court structures and procedures differ among members and regions. Consequently, those standards do not require any particular kind of court process and effectively recognise that there are different cultural practices in relation to courts and enforcement procedures of both common law and civil law. These types of legal systems and mediation, arbitration and administrative procedures may all be acceptable approaches to intellectual property enforcement. But under the TRIPS Agreement, WTO Members must provide effective enforcement. In other words, there must be the real possibility of both nationals and foreigners bringing disputes.

Increasingly of relevance to intellectual property are regulators who assess products for health and efficacy (e.g. pharmaceuticals and agricultural products) and grant permission for such products to be placed on the market and in some economies (such as New Zealand) to be potentially publicly funded. These agencies collect regulatory data in order to authorise the products submitted to them. In the case of pharmaceuticals this data takes the form of clinical trials.⁹¹

⁹¹ As discussed in Chapter 1, modern patent law and the exclusive rights it embodies are primarily justified because they ostensibly incentivise invention. In contrast, the requirement to submit regulatory data is directed to health (more precisely, safety and efficacy). As major beneficiaries of the patent regime, the pharmaceutical industry (including the biotech industry) considers that patent law may not be as effective to protect new uses and some biologics as it once was because of the checks and balances that are part of the law and that some parts of patent law were primarily designed with chemical/small molecule pharmaceuticals in mind (discussed further Chapter 2.6). See PJ Pitts, 'Why Data Exclusivity is the New Patent Protection' (2010) 16 J Commer Biotechnol 3; S Sorscher, 'A Longer Monopoly for Biologics?: Considering the Implications of Data Exclusivity as a Tool for Innovation Policy' (2009) 23 Harv J L & Tech 285; L Tzeng, 'Follow-On Biologics, Data Exclusivity, and the FDA' (2010) 25(1) Berkeley Tech L J; K Lybecker, 'When Patents Aren't Enough: The Case for Data Exclusivity for Biologic Medicines' (2014) 40 William Mitchell L Rev 1427.

3.5 Strategies to Accommodate Competing Interests

As the previous chapters show, balancing intellectual property interests can be complex. To do so requires robust institutions with significant capability to design relevant law and policy and to provide the infrastructure to both register and enforce intellectual property rights. Registration and enforcement each come with many checks and balances to ensure only that which is worthy of protection obtains it. More details of these laws are explained in Chapter 5.

Both WIPO and the WTO are involved with capacity building exercises to improve the capability of intellectual property related institutions and legislative design in developing and least-developed economies. Some technical assistance provided as part of the implementation of certain trade agreements may also contribute to capability and capacity building in intellectual property.

In the following sections we sketch some strategies relating to developing laws and policies. This is by no means exhaustive but illustrates some of the complexities involved in all areas of intellectual property rights.

3.5.1 Copyright and Patent Related Strategies

For lawmakers to design an effective copyright regime they will need considerable expertise in relevant legislative drafting if the laws, in practice, are to achieve a balance among competing interests. While it is relatively easy to put in place the rights that arise from copyright ownership (predominantly to control copying and distribution) it is comparatively difficult to frame the exceptions to such rights. The central policy questions for framing copyright exceptions are: a) what uses of copyright works should be permitted without that use amounting to infringement? and b) should that permitted use be free or subject to a royalty? Related to the question of payment is by whom and how will that royalty be determined.⁹² Such exceptions can be carefully delineated with specified purposes in mind, such as for research, educational classroom use, or they can be designed for Courts or Tribunals to determine the parameters of third party use on a case-by case basis. Whatever approach is taken, these exceptions must also comply with the international minimum standards.

Using the laws of other economies as models is a possible strategy, but the effectiveness and appropriateness of those laws will vary

⁹² This might be subject to a regulator such as the Copyright Board in Canada or left to the market with an avenue for disputes such as the Copyright Tribunal in New Zealand and the United Kingdom.

depending on the stage of development in the adopting jurisdiction and the culture and expectations around enforcement. The approach to copyright exceptions in the United States, while including some specifically delineated permitted uses in its Copyright Act, involves a broad concept of fair use made up of various legislated factors, such as the transformative nature of the use. The scope of fair use is guided by the statute but is progressively developed through the Courts in various states and at appellate level through the Federal and Supreme Court systems. There can still be uncertainty about the scope of fair use even if it is tested in the courts. The Federal structure of the United States means that different circuits often reach different results and, when that happens, the Supreme Court is charged with deciding which approach is correct. This can take a long time to happen and in the interim uncertainty can prevail. In societies where litigation is used less often, the open nature of legislative provisions may not be as effective because it is thought to create uncertainty. This is true even in other common law jurisdictions. The United Kingdom and its former colonies including India, Australia, and New Zealand all have lists of permitted acts with specified purposes that are delineated in various ways, such as research, private study, and specific provisions for education, libraries and archives. The European Union also tends to favour the approach of well defined permitted acts.

All these models for approaching exceptions to copyright come with detail, jurisdictional history and experiences that make adoption of one method over another a matter of some considerable skill and often considerable debate within an economy. While it might be tempting to adopt what appears to be the most expansive set of exceptions under the fair use framework, that may simply not be the best approach to achieve the effective use of copyright works in all places. All exceptions to copyright must comply with what is known as the TRIPS Agreement three step test which is discussed further in Chapter 4.

Patent Law has comparatively fewer exceptions to exclusive rights than copyright but accommodating competing interests in the legislative framework is equally, if not more, important. Crafting compulsory licensing provisions or experimental use of inventions for follow on research is complex and there is 'no one size fits all' model. A wide experimental use exception is not much use if the requisite capability to experiment is not present. Most experimental use exceptions (if they exist) are somewhat curtailed so that they do not interfere with the commercial exploitation of the patented invention. In patent law the scope of patentable subject matter will be where much of the strategy for lawmakers lies. International agreements do not define the criteria of novelty, inventive step and utility, meaning that legislatures have crafted them according to local needs. India, for example, has a standard which sees many second uses of pharmaceuticals as unpatentable where they may be patentable in the United States, the EU and Australia (for more detail see discussion

in Chapter 5). As with copyright, using the laws of other countries to frame patent law may be helpful but differences in economic conditions will also be relevant and so the expertise to ensure the laws meet local needs will be important.

3.5.2 Trade Mark Strategies

Trade marks are the most ubiquitous form of intellectual property and having systems that ensure local SMEs can benefit from trade mark rights is an important strategy in many economies. New Zealand is a particularly good example where the trade mark registration office (IPONZ) has a very efficient system. There are international agreements that facilitate registration (the Paris Convention and the Madrid System)⁹³.

In the online era, even small companies can sell their product or service in many different countries. Those marks may become known even in countries where the product or service is not on offer. This poses problems for marks that are known but not used in commerce in certain territories. When a mark is considered “well-known” in an economy (even without commercial use in that territory), it may benefit from a degree of protection under international rules. Consequently, a challenging issue is the degree to which there should be protection of the famous marks of international brands. The TRIPS Agreement requires protection of well-known marks provides that in determining what is well-known Members should take account of the knowledge of the trade mark in the relevant sector of the public. A WIPO Recommendation on the Protection of Well-Known marks gives the TRIPS guidance more definition. FTAs often provide more detail on what is required to protect well-known marks.⁹⁴

⁹³ See WIPO, Administered Treaties <www.wipo.int>.

⁹⁴ See generally F Mossart, ‘The Protection of Well-Known Marks under International Intellectual Property Law’ in I Calboli and JC Ginsburg (eds), *Cambridge Handbook of International and Comparative Trademark Law* (CUP, 2020).

Chapter 4

The Substance of Intellectual Property Laws

4.1 Terminology and Scope of this Chapter

The term intellectual property is used to group together laws and legal doctrines that have an overall function of excluding unauthorised users from the use of intangible assets. Each area of intellectual property differs in significant respects from other areas of intellectual property both in terms of the subject matter protected and the rights of owners and opportunities for users including consumers, follow-on inventors and creators. In international agreements there are two overarching descriptions of the term “intellectual property.”

Article 2 of the Convention Establishing the World Intellectual Property Organization (WIPO) defines the term as including the rights relating to:

- literary, artistic and scientific works,
- performances of performing artists, phonograms, and broadcasts,
- inventions in all fields of human endeavor,
- scientific discoveries,
- industrial designs,
- trade marks, service marks, and commercial names and designations,
- protection against unfair competition,

and all other rights resulting from intellectual activity in the industrial, scientific, literary or artistic fields.

The TRIPS Agreement, administered by World Trade Organization (WTO), describes its coverage of “intellectual property”, as follows:

For the purposes of this Agreement, the term ‘intellectual property’ refers to all categories of intellectual property that are the subject of Sections 1 through 7 of Part II” (TRIPS Agreement, Article 1.2)

Sections 1 through 7 of Part II are:

1. Copyright and Related Rights
2. Trademarks
3. Geographical Indications
4. Industrial Designs
5. Patents
6. Layout-Designs (Topographies) of Integrated Circuits
7. Protection of Undisclosed Information

The WTO list overlaps with the WIPO description but is both more limited in its overall scope and differs in explicitly mentioning “geographical indications” and layout-designs of integrated circuits.

Notably, neither agreement refers specifically to plant variety rights (PVR), which are sometimes called plant breeders’ rights. These are connected to patents and under the TRIPS Agreement countries must either provide patent or a PVR type protection for plant related inventions. Also, neither agreement directly addresses traditional knowledge and Indigenous People’s rights over their knowledge assets.

Members of the international agreements must meet certain standards of protection in their domestic law. For the most part, this means countries enact their own legislation to comply with their international obligations, resulting in a series of territorial laws that make up the global picture. There is no global intellectual property right; rather there are territorial rights that follow internationally agreed minimum standards. For example, whether someone holds a patent or copyright protection under New Zealand law is a separate question from whether they hold the same rights in China or the United States. For many intellectual property rights this territoriality extends to sovereign registration systems, although there may be regional cooperation among registration systems.

The WIPO and WTO definitions reveal, and it is widely agreed, that the three core areas of intellectual property are copyright, trade marks and patents. The other rights are often described as related rights or in some jurisdictions they may be known as neighbouring rights. Related and neighbouring rights are discussed in the next Chapter. The remainder of this Chapter discusses the three core intellectual property rights. Each section explains what the rights are and gives illustrative examples of some of the different approaches among jurisdictions. Those examples include both successful and unsuccessful intellectual property legislative strategies. Each of these sections also discusses the nexus and disconnect with traditional knowledge.

4.2 Copyright

Individual creators, the publishing, music, film and all creative industries, businesses, internet platforms and even some not for profits rely on copyright to differing extents and in differing ways.

Unlike the other intellectual property rights there is no international obligation to register copyright or have any institution, such as a copyright office. The main institutions that regulate copyright behaviours are courts, copyright tribunals and private organisations such as collecting societies and internet service providers. When copyright systems are designed, they, in part, presumptively assume that the market will work out any issues and if it cannot dispute settlement mechanisms are the way forward. In reality, many users of copyright and owners cannot afford to litigate whenever there is an issue and so strong dispute settlement institutions are not enough to balance the interests among interested parties.

Consequently, some of copyright's mechanisms to balance competing interests are internal and some are found in cognate legal areas such as competition and consumer law. How to balance competing interests in copyright law is a constant tension in the law and the continual need to adjust that balance is part of the framework and tension of copyright law. That framework is premised on the utilitarian and natural rights rationales discussed in Chapter 1. In individual jurisdictions, the law is most commonly framed as what constitutes a copyright work (what is needed for copyright to subsist), who owns copyright works and what rights do they have, who can use copyright works and to what extent.

4.2.1 Subsistence of Copyright

The Berne Convention for the Protection of Literary and Artistic works includes a list of the types of works that copyright protects.⁹⁵ The Berne Convention defines copyright subject matter as:⁹⁶

every production in the literary, scientific and artistic domain, whatever may be the mode or form of its expression, such as books, pamphlets and other writings; lectures, addresses, sermons and other works of the same nature; dramatic or dramatico-musical works; choreographic works and entertainments in dumb show; musical compositions with or without words; cinematographic works to which are assimilated works expressed by a process analogous to cinematography;

⁹⁵ Berne Convention, art 2; also incorporated into the TRIPS Agreement, art 9 (2).

⁹⁶ Berne Convention, art 2(1).

works of drawing, painting, architecture, sculpture, engraving and lithography; photographic works to which are assimilated works expressed by a process analogous to photography; works of applied art; illustrations, maps, plans, sketches and three-dimensional works relative to geography, topography, architecture or science.

The list is largely self-explanatory. Protection of industrial designs can occur either as copyright or it can have a separate framework. In many jurisdictions (such as New Zealand, Australia and the United Kingdom) designs are protected through a combination of a designs specific framework and copyright.

Members of Berne (known as the Berne Union) have flexibility around the terminology they use in their law, but the categories of work must be protected. This also allows movement with technology, so that a jurisdiction may use “film” rather than “cinematographic work”, for example. The TRIPS Agreement adds computer programs as literary works, to this list of copyright works, and that databases (but not the data) which are the result of intellectual creativity must also be protected.⁹⁷ While some aspects of copyright law adjust with technology, overall the changes brought about by digital technology and AI are not so easily accommodated in copyright law.

In most jurisdictions, there is a list of categories of works protected by copyright in legislation. In understanding what is a copyright work, it is important to distinguish between the copyright and the goods and services to which copyright attaches.

Once a category of copyright work is established, the next question is whether the work is original. Unless a work is original it cannot qualify for copyright protection.

4.2.2 Originality

For copyright to subsist in a work, it must be original. There is much international dispute around the boundary of originality as it is a gatekeeper of protection. The lower the standard, the more works attract copyright protection and conversely the higher the threshold, the fewer works gain protection. While it is tempting to think of this as legal detail, the economic reality is that the lower the threshold, the closer copyright comes to giving inefficient market privileges.

The TRIPS Agreement (Article 9.2) requires that copyright must

⁹⁷ TRIPS Agreement, art 10.

protect the expression of a work and not the idea. This means that the expression must be original, but neither TRIPS nor other international agreements define originality. Several copyright works can have similar plots or themes, but they are different in their expression. For example, a romance between two young lovers opposed by the parents forms the plot perhaps most famously of *Romeo and Juliet* but also of multiple other copyright works. The hero in *Star Wars* who sacrifices his life for the sake of others is also a common plot, having perhaps religious origins, but manifesting itself in many works of fiction described in copyright terms as literary works or films. The many manifestations may be protectable as expressions but not the general genre which is an idea.

Copyright cases have taken several approaches as to the meaning of originality, and this varies among jurisdictions, sometimes depending on what category of work is at issue.

An outdated test often proffered to solve any issues of originality is that a work which is worth copying is worth protecting. While this test has economic appeal, it suggests that copyright should protect all works, no matter how devoid they are of originality. Such an approach undermines any tenets of public interest placing parameters around the protective power of copyright.

The level of originality in a work will determine the extent to which it attracts exclusive rights. If a work includes both original and unoriginal parts, the whole work may be classified as an original work. And if a person other than the owner of that work uses the unoriginal parts of the work, that person will not have infringed the original work. Even though concepts of originality and infringement overlap, each question is considered separately.

A starting point to understand “originality” is the idea that a work is not original when it is copied, but originality is much more complicated. A person can copy an old painting and their “new” version may attract copyright because the copyright in the old painting has expired and the new artist has expended their own skill to create an original work. A slavish copy, one made without additional skill and judgement, will not attract copyright, however. Also, if a work infringes the copyright in another work, it cannot be original. These propositions, however, only take the matter so far. Many jurisdictions also require authorial input to establish originality or, where the work is apparently mundane (such as directories), a “spark” of creativity.⁹⁸ Independent creation also plays a role in establishing originality. A work may still be independently created if it draws on existing works, regardless of whether or not

⁹⁸ Perhaps the most famous articulation of this, which has also been adopted in many other jurisdictions, is found in the United States Supreme Court judgment *Feist Publications Inc. v Rural Telephone Service Co.*, 499 U.S. 340 (1991).

In the words of Judge Learned Hand:

Borrowed the work must indeed not be, for a plagiarist is not himself pro tanto an “author”; but if by some magic a man who had never known it were to compose a new Keats’s Ode on a Grecian Urn, he would be an “author”, and ... others might not copy that poem, though they might of course copy Keats’.

those works are protected by copyright.

An independent creator may look at other works for inspiration but should not copy them.

The body of copyright disputes around the concept of originality is immense and AI will surely see it grow.

4.2.3 Duration of Protection

How long copyright should last has been contentious and probably always will be. The international minimum standard for written works is life of the author plus 50 years. On the other hand, if the work is one such as film or sound recording, the standard is 50 years from its making. After the European Union moved to 70 years, it did not take long for the United States to follow, and successive bilateral trade agreements have pushed the term to at least 70 in most of the world. New Zealand is one of the last places to have the 50 year term. The Copyright Act 1994 generally protects copyright works for the life of the author plus 50 years. The New Zealand framework is now set to change, as two free trade agreements lock in an extension to life plus 70 years.

Where copyright protects industrial design, the term of protection is often shorter than it is for other copyright works so that the term is roughly equivalent to protection under any design law regime.

4.2.4 Owners and Authors

Ownership of a copyright work and the authorship of a work are distinct concepts. As copyright is a property right that may be assigned, the ownership of a work may pass from the author to subsequent owners. In some circumstances, first ownership of a work may vest in a person other than the author; for example, if a work is made in the course of employment. Some jurisdictions have statutory rules that function as default rules that apply in the absence of an agreement to the contrary. In many instances, contract law will primarily determine ownership. The rules around authorship and ownership vary among jurisdictions and there is no international agreement on most points. This creates transaction costs for businesses relying on copyright across borders.

The Berne Convention refers to authors and the TRIPS Agreement to rights holders.⁹⁹ The distinction is important and politically complex, with broadly civil law countries using the author terminology and common law countries adding rights holders. Sometimes the differences are important and other times less so. The rights of individual creators (authors) to make a living rather than production companies or platforms (rights owners) is central to international copyright debates.

4.2.5 Exclusive Rights and Exceptions

The fundamental exclusive right of copyright owners stemming from the Berne Convention is the right to control reproduction (copying). This includes rights to publish, rights to perform a work, rights to broadcast cable and make available on the internet. These rights are broad and extensive. (Some of these rights are also relevant to performers' rights which are discussed in the next Chapter).

The WIPO Copyright Treaty 1996, known as the WCT, exists independently of the Berne Convention and is not incorporated into the TRIPS Agreement. It makes reference to the Berne Convention but has been formulated so that members of Berne are free not to sign up to it. It is not an amendment of the Berne Convention but is an optional protocol to it. The WCT is directed towards copyright protection in the face of new technologies. It provides for a number of new rights, including a broad communication right which gives copyright owners protection when they make their works available in the digitally connected world.

The most important limitation to copyright protection, which applies to Berne, the WCT and the TRIPS Agreement, relates to the ability for members of those agreements to create limitations or exceptions to their copyright laws.¹⁰⁰ On an international level the diversity of approaches to these exceptions has been, and continues to be, controversial. Article 13 of the TRIPS Agreement provides:

- Members shall confine limitations or exceptions to exclusive rights to certain special cases which do not conflict with a normal exploitation of the work and do not unreasonably prejudice the legitimate interests of the right holder.

⁹⁹ TRIPS Agreement, art 13.

¹⁰⁰ Berne Convention, art 9(2) and TRIPS Agreement, art 13.

Article 13 is based on Article 9(2) of the Berne Convention, which provides:

- It shall be a matter for legislation in the countries of the union to permit the reproduction of such works in certain special cases, provided that such reproduction does not conflict with a normal exploitation of the work and does not unreasonably prejudice the legitimate interests of the author.

Because these provisions include three steps, they are known as three step tests. The WTO Dispute Settlement Body has considered the application of this provision to United States copyright law.¹⁰¹ The European Communities,¹⁰² as it was then known, brought a complaint against the United States in 1999.¹⁰³ The dispute centred on s 110(5) of the United States Copyright Act and the panel report is lengthy so is summarised here.

The relevant section, in the US Act, incorporated two broad exemptions to a copyright owner's rights of the playing of radio and television in cafes and shops.

The complainants alleged the United States copyright law breached the TRIPS Agreement by violating Berne Convention rights in relation to copyright owners controlling the public performance of their works via loudspeaker or radio. To decide if the United States law was permissible, the WTO Dispute Panel considered whether the exceptions fitted within the parameters of Article 13. The arguments of the parties were somewhat technical, but important to international copyright law because they required a determination of which international agreement took priority over the other. In addition, the decision was the first WTO dispute to give guidance about exceptions to copyright protection that are permissible under TRIPS.

The practical result for the United States was the Panel's finding that parts of its exceptions framework were not TRIPS compatible. For a provision to be an acceptable exception to copyright protection it must comply with all three steps in the three steps of the test. As set out on the previous page the first step is that exceptions must be confined "to certain special cases"; the second step requires that those special cases "do not conflict with a normal exploitation of the work" and the third step that they "do not unreasonably prejudice the legitimate interests of the right holder".

¹⁰¹ *United States — Section 110(5) of US Copyright Act* WT/DS160/R 18 January 2002 (WTO, Panel Report).

¹⁰² Early cases were brought under the name of the European Communities, which was a member of the WTO independent from the Member states.

¹⁰³ Third parties to the dispute were Australia, Brazil, Canada, Japan and Switzerland.

The Panel said that “special case” meant that an exception should be clearly defined and limited in its scope and reach. The Panel summarised the United States submission about the meaning of “no conflict with normal exploitation” as involving the question of whether the fair use had displaced the owner’s normal exploitation:¹⁰⁴

In the US view, the essential question to ask is whether there are areas of the market in which the copyright owner would ordinarily expect to exploit the work, but which are not available for exploitation because of this exemption. Under this test, uses from which an owner would not ordinarily expect to receive compensation are not part of the normal exploitation.

However, the Panel restricted this “market displacement” to questions of whether the permitted use was normal:¹⁰⁵

This test seems to reflect the empirical or quantitative aspect of the connotation of “normal”, the meaning of “regular, usual, typical or ordinary” ... We have to give meaning and effect also to the second aspect of the connotation, the meaning of “conforming to a type or standard” ... [T]his aspect of normalcy [includes] a dynamic element capable of taking into account technological and market developments ... Thus it appears that one way of measuring the normative connotation of normal exploitation is to consider, in addition to those forms of exploitation that currently generate significant or tangible revenue, those forms of exploitation which, with a certain degree of likelihood and plausibility, could acquire considerable economic or practical importance.

The Panel considered that the crucial question in relation to prejudice was whether:¹⁰⁶

[The] degree or level of “prejudice” may be considered as “unreasonable”, given that, under the third condition, a certain amount of “prejudice” has to be presumed justified as “not unreasonable”. In our view, prejudice to the legitimate interests of right holders reaches an unreasonable level if an exception or limitation causes or has the potential to cause an unreasonable loss of income to the copyright owner.

¹⁰⁴ *United States — Section 110(5) Copyright Act*, above n 101, at [6.6] and [6.176]–[6.178].

¹⁰⁵ Above n 101, at [6.180]–[6.181].

¹⁰⁶ Above n 101, at [229].

Applying the scope of exceptions is challenging and is discussed as a strategy in the previous Chapter.

The three-step test is applicable to all exceptions to copyright, whether the relevant obligations arise under the Berne Convention or TRIPS. It has found its way into subsequent copyright agreements, particularly the Marrakesh Treaty Marrakesh Treaty to Facilitate Access to Published Works for Persons Who Are Blind, Visually Impaired or Otherwise Print Disabled.¹⁰⁷

4.2.6 Copyright and Designs

Industrial designs protect aesthetic aspects of utilitarian objects. For example, a spoon, a dress, a chair or a laptop may have aesthetically pleasing aspects even if the object in question is essentially utilitarian. Yet those objects could also in certain contexts be considered works of art. Often, when industrial design protection is available, copyright protection stops. A line of demarcation in several national laws is the number of copies made (e.g. 50) beyond which the object loses copyright protection. Unlike copyright, which arises automatically upon creation of an original work, industrial design protection requires an application, like a patent. In the United States designs are protected under a system of design patents. The different modes of protection have major practical implications, especially the term of protection (much shorter for designs) and the fact that copyright protection arises automatically upon creation of an original work while rights in a design usually depend on the filing of an application within a specific timeframe.

¹⁰⁷ WIPO, Marrakesh Treaty to Facilitate Access to Published Works for Persons Who Are Blind, Visually Impaired or Otherwise Print Disabled <www.wipo.int>.

4.3 Trade Marks, Service Marks and Commercial Names and Designations

This is a vast and heavily litigated area of intellectual property. Businesses use various words and symbols (logos), and sometimes even sounds and smells, to identify their products and services and differentiate them from those of their competitors. It is generally accepted that the functions of trade marks are to distinguish the goods or services of one trader from those of another and, in doing so, they create goodwill for traders and reduce consumer search costs. They may also incentivise traders to maintain a certain quality in their goods that consumers associate with trade marks. Trade mark law may incentivise but not compel this behaviour.

4.3.1 Trade Mark Subject Matter

4.3.1.1 Registered Trade Marks

Words, logos and images that businesses use function as trade marks (or service marks if applied to a service, like an internet service). A trade mark or service mark usually consists of a word (e.g. Microsoft or Apple) or logo (e.g. the Apple shape and the Microsoft squares). It can be both. For example, the words Coca-Cola is a word mark, but the script (which is often white or black) that is used to write Coca-Cola also functions as a logo. Many traders use more than one trade mark on any individual product. This distinction between different trade marks matters in cases of infringement. Some jurisdictions recognise that sounds (like a jingle) or even smells can also function as trade marks, but international rules do not require that.

The TRIPS Agreement (Article 15.1) states

any sign, or any combination of signs, capable of distinguishing the goods or services of one undertaking from those of other undertakings, shall be capable of constituting a trademark. Such signs, in particular words including personal names, letters, numerals, figurative elements and combinations of colours as well as any combination of such signs, shall be eligible for registration as trademarks. Where signs are not inherently capable of distinguishing the relevant goods or services, Members may make registrability depend on distinctiveness acquired through use. Members may require, as a condition of registration, that signs be visually perceptible.

Unlike other intellectual property rights, trade marks can last indefinitely. Registered trade marks can last for as long as a trader keeps paying the registration fee. In other words, the duration of trade mark protection can be indefinite.

A trade mark can also be used to refer to the fact that the producer belongs to a certain group of producers. This is known as a collective mark. It can also bear the name

and/or logo that certifies a certain quality or feature of the product (e.g. Fair Trade). This sort of trade mark is known as a certification mark. Certification marks are used in some jurisdictions (the United States, United Kingdom, Australia and New Zealand, for example) as a way of recognising certain collective rights where producers share a geographical provenance for their products and /or a standard in their production. An example is champagne for wines produced in that region of France. Others do not use certification marks to protect such designation but rather use a special type of intellectual property to protect them, generally referred to as geographical indications (discussed in Chapter 5.3).

A trade mark may or may not be a company name. If a company has a name that does not correspond to one or more of its trade marks, then in most jurisdictions the use of this name is not protected as intellectual property in the same way as trade marks are. However, the use of company names is still required to be protected. In a dispute concerning the United States' law and its ban of trade marks owned by Cuban businesses, the WTO Appellate Body held that the TRIPS Agreement covers trade names, which broadly includes company names.¹⁰⁸

The TRIPS Agreement incorporates certain provision from the Paris Convention and it adds additional provisions, such as defining the subject matter of trade marks and rules for infringement (discussed in the next sub-part). The Paris Convention incorporates three important procedural rules that can have substantive effect: the first to file ownership rule; priority of registration over competing marks; and the *telle quelle* rule.¹⁰⁹

The Paris Convention incorporates three important procedural rules that can have substantive effect:

- **the first to file ownership rule;**
- **priority of registration over competing marks;**
- **and the *telle quelle* rule.**

The first to file rule means the first applicant to file a trade mark in a jurisdiction has priority over others who claim to use the trade mark. Most jurisdictions have rules requiring that others can challenge the first to file rule either in pre-grant opposition or as a defence in infringement proceedings. The United States has historically preferred a first to use rule over a first to file rule, as it required use before registration. This somewhat contentious issue has partially been resolved by first to file being the international norm, but the United States

¹⁰⁸ *United States — Section 211 Omnibus Appropriations Act of 1998* WT/DS716/11 2 January 2022 (WTO, Appellate Body Report).

¹⁰⁹ Paris Convention, arts 6 and 6 *quinques*.

retains certain use requirements for registration in its law.

The priority rule in the Paris Convention means that a trade mark applicant filing an application in one jurisdiction will have a certain period of priority in other jurisdictions to file its trade mark application. The Madrid System extends this in some circumstances. As noted earlier, intellectual property rights are territorial and for trade marks this means that an application for registration must be made in each territory where trade mark protection is sought.

The ***telle quelle*** rule provides that a trade mark must be registered, in other jurisdictions, “as such” based on its registration in the country of origin. In essence, this means that the registration of a trade mark need not be altered from its first form of application to meet another economy’s specific standards. This does not mean that the other jurisdictions must grant registration. For example, they might have refused registration based on local rules around lack of distinctiveness.

4.3.1.2 Unfair Competition and Trade Mark like Rights

Many forms of trade mark infringement involve elements of unfair competition. What is fair competition in some jurisdictions may be treated as unfair in others. The Paris Convention defines unfair competition as “any act of competition contrary to honest practices in industrial or commercial matters” (Paris Convention, Article 10*bis* (2)). The Convention mentions three examples:

- i. all acts of such a nature as to create confusion by any means whatever with the establishment, the goods, or the industrial or commercial activities, of a competitor;
- ii. false allegations in the course of trade of such a nature as to discredit the establishment, the goods, or the industrial or commercial activities, of a competitor;
- iii. indications or allegations the use of which in the course of trade is liable to mislead the public as to the nature, the manufacturing process, the characteristics, the suitability for their purpose, or the quantity, of the goods. (Paris Convention, Article 10*bis* (3))

Unfair competition is dealt with differently around the world. Sometimes a specific law or statute provides protection against unfair competition. Sometimes it is considered a legal wrong (known as a tort in common law countries or a delict under general rules of civil law).

4.3.2 Trade Mark Owners' Rights and Exceptions

Broadly, the TRIPS Agreement gives trade mark owners the right to exclude others from using signs identical or similar to registered trade marks on identical to or similar goods or services. TRIPS requires Members to include provisions about the parameters of these rights in their national laws (Article 16).

The most significant WTO dispute settlement report on trade marks involved Australia's plain packaging requirements for tobacco. Australia limited the use of trade marks on tobacco product packaging to unstylised brand names only and required health warnings to dominate the packaging. Disputes were brought initially by several developing WTO Members involved in the growth of tobacco and production of tobacco products. Only Honduras¹¹⁰ and the Dominican Republic took the matter to the Appellate Body. The Panel and the Appellate Body found that Australia's regulatory approach did not violate the TRIPS Agreement because of its legitimate approach to health regulation. A key finding was that the rights of trade mark owners in Article 16 of TRIPS were rights to "exclude" third parties, and they did not give the owners of registered trade marks any right to actually use them.¹¹¹ Even so, Members may take a different approach in their domestic law and provide trade mark owners with the exclusive right to use. Examples of Members taking this approach are Australia, New Zealand and the UK. On the particular facts of the case, the Australian legislation that required extensive health warnings to be used on tobacco packaging and the non-use of figurative and logo trade marks did not amount to what the TRIPS Agreement called an unjustified encumbrance under Article 20.

Additionally, the TRIPS Agreement provides for exceptions to trade mark law, "such as fair use of descriptive terms" (Article 17). The provision allowing for exceptions is related to the three-step test, although it only incorporates two steps and is the only such provision to give an example of an exception. Article 17 was discussed at the WTO in the dispute brought by the United States against aspects of the European Union's (then European Communities) registration system. Much of the dispute concerned violation of the national treatment principle. Such a violation could potentially be "excused" if it was in compliance with Article 17, but that was not the outcome of the dispute. On the facts of the particular dispute, the European Communities were able to use Article 17 to allow for limitations on trade marks existing before the relevant geographical indications regime came into effect, but not otherwise.¹¹²

¹¹⁰ Susy Frankel was independent expert adviser to the law firm advising Honduras.

¹¹¹ *Australia — Certain Measures Concerning Trademarks, Geographical Indications and Other Plain Packaging Requirements Applicable to Tobacco Products and Packaging* WT/DS435/28 WT/DS441/29 2 July 2020 (WTO, Appellate Body Report).

¹¹² *European Communities — Protection of Trademarks and Geographical Indications for Agricultural Products and Foodstuffs* WT/DS 174 and DS290 20 April 2025 (WTO, Panel Report).

4.4 Patents and Plant Variety Rights

4.4.1 Subject Matter

The WIPO definition of intellectual property refers to inventions in all fields of human endeavour. A patent is a type of intellectual property protection that is available for new inventions that are products or processes. Patents are registered rights and they usually give the patent owner the exclusive rights to manufacture and sell the registered invention for the term of the patent, which is usually 20 years from the date the application is filed. (A significant exception to the 20-year term being in jurisdictions that extend patent term for some pharmaceutical inventions). The date the patent is granted will be later than the application date, but once the patent is granted the rights date back to the date of application. This is important because the date of application is that date in which the patent has priority for its invention over competitors who may invent the same thing. After the patent has expired, the invention enters the public domain and anyone can sell or manufacture it. This is a key part of how patent law is justified in giving inherently anti-competitive exclusive rights in the pursuit of innovation and encouraging competition.

Patents must be granted separately in each jurisdiction where inventors want to protect their invention. To obtain a patent, an inventor must disclose how the invention works to the relevant patent office. This disclosure requirement lies at the heart of the social contract rationale for granting patent rights. The TRIPS Agreement standard for disclosure leaves some flexibility on the extent of that disclosure by not requiring that the “best” method of making the invention is disclosed.

The subject matter of patents is not defined expressly in the Paris Convention, but is defined in TRIPS as follows: ¹¹³

patents shall be available for any inventions, whether products or processes, in all fields of technology, provided that they are new, involve an inventive step and are capable of industrial application.

A footnote indicates that the “inventive step” includes “non-obviousness”, and “capable of industrial application” includes “usefulness”. These are the terminologies found in different jurisdictions and, although they are used slightly differently in each jurisdiction, TRIPS finds equivalence among them.

While it is broadly agreed that a person cannot apply for a patent for having merely discovered something and that instead, the applicant

¹¹³ TRIPS Agreement, art 27:1.

has to demonstrate a new, inventive use of the invention, there is much disagreement about what that means, particularly in different areas of technology. As none of these requirements of patentability are defined in the TRIPS Agreement, there is considerable latitude for WTO Members to define them according to their own needs, provided there is still compliance with the Agreement. The same Article in the TRIPS Agreement goes on to say that:

patents shall be available and patent rights enjoyable without discrimination as to the place of invention, the field of technology and whether products are imported or locally produced.¹¹⁴

The effect of requiring patents in all fields of technology means that patents cannot be excluded just because of the field of technology but it does not mean everything is patentable. Article 27 of the TRIPS Agreement provides for exceptions to patentability which in essence are subject matter exceptions. These include exceptions for:

- diagnostic, therapeutic and surgical methods for the treatment of humans or animals (TRIPS, Article 27:3 (a))
- plants and animals other than micro-organisms, and essentially biological processes for the production of plants or animals other than non-biological and microbiological processes (TRIPS, Article 27:3 (b)). Members using this exclusion must provide a sui generis plant variety rights protection.
- inventions, the prevention within their territory of the commercial exploitation of which, is necessary to protect “ordre public” or morality, including to protect human, animal or plant life or health or to avoid serious prejudice to the environment, provided that such exclusion is not made merely because the exploitation is prohibited by their law (TRIPS, Article 27:2).

It is also possible to exclude subject matter from patentability on the basis of it not being an invention. Examples of such exclusions are found in the EU, UK and New Zealand for computer software. In the United States, abstract processes and laws of nature are excluded from patentable subject matter. This exception has been used to exclude business methods and isolated gene sequences. Business methods are relevant in all jurisdictions, the latter is more likely to be relevant in places where there is genetic research. The patenting

¹¹⁴ TRIPS Agreement, art 27:1. This aspect of the provision was considered in a WTO dispute brought by the then European Communities against Canada. See *Canada — Patent Protection of Pharmaceutical Products* WT/DS114/R 17 March 2000 (WTO, Panel Report).

of genetic resources is also of concern for holders of traditional knowledge and is discussed further in Chapter 5 in that context.

As noted in Chapter 5, implementing these exceptions can be challenging and requires considerable local expertise. They are often very controversial and can give rise to much litigation.

In addition to the exception found in Article 27, there is also a general exceptions three step test for exceptions for patents which is discussed in the infringement section (4.4.5) below.

4.4.2 Novelty and Inventive Step

To be patentable an invention must be new or novel. An invention that is already in the public domain is not patentable, because it is not novel: there would be no benefit in granting exclusive rights over something that is common knowledge. There are many ways in which novelty is defined in national law.¹¹⁵ Many definitions include the concept that the invention should not have been disclosed in the prior art, including relevant publications and existing patents and sometimes patent applications and material already made available to the public. If an invention is found in these things, it will be anticipated and therefore not seen as novel. Novelty can be assessed using either a local or international standard. An international standard is more common and since the advent of the internet, knowledge that is only localised is much less common.

Even if a patent is novel, it must also involve an inventive step (i.e. it must be “non-obvious”). The inventive step requirement should ensure that only those inventions which truly add to existing knowledge are patentable. The debate is often how high the standard for inventive step should be. Finding that balance is the ongoing challenge, for patent offices and courts, as inventions often build on what is known and on improving or refining it. There are many cases around the world on this point. Some jurisdictions will require a higher standard of inventive step so as to prevent patenting of incremental inventions. Others will value incremental inventions for what they add and will require that they can be patented (examples include second uses of known compounds).

Whether or not there is an inventive step is usually assessed from the perspective of a hypothetical person who is the ordinary person skilled in the relevant art. The assessment can occur in a patent office or in a court. The general idea is that this person has all the disclosed knowledge and an ordinary level of creativity but not a very inventive

¹¹⁵ WIPO has a useful summary of definitions of novelty. See <www.wipo.int>.

imagination. The case law and worldwide litigation around these concepts is vast and dynamic.

There are overlaps between the concepts of novelty and inventive step, but they are each separate grounds for patentability. The overlap will often be apparent in the evidence of the prior art used to support each ground.

4.4.3 Capable of Industrial Application and Usefulness

The criteria for patentability ask whether the invention is capable of being made and is in some way useful. Of course, some inventions are more useful than others, but usefulness is not a relative judgement. It is rather defined by the criteria that the invention works for its purpose. Things that will never work, such as a perpetual motion machine or a device for catching ghosts will not be useful in patent terms. At the stage of patenting there may only be a requirement for a scintilla of usefulness. This is particularly so for pharmaceuticals which may be patented so novelty is not lost but may still be undergoing clinical trials.

Some jurisdictions require a credible statement of usefulness. This issue reached a head internationally when the Canadian courts adopted an approach that required a high standard of proof of usefulness in certain subsequent use pharmaceutical cases.¹¹⁶ This standard meant that the particular claimed uses were unpatentable. This resulted in the Eli Lilly company, an American investor in Canada, pursuing an investment dispute against the government of Canada under the provisions of NAFTA. Eli Lilly claimed the change of law was arbitrary and unfair and consequently adversely affected its investment in Canada. Ultimately Eli Lilly lost the investment dispute but its pursuit of it may have had a chilling effect on others seeking to adopt the Canadian approach in their laws.¹¹⁷

¹¹⁶ See discussion in Frankel S, 'Interpreting the Overlap of International Investment and Intellectual Property Law' (2016) 19 J Int Econ L 121.

¹¹⁷ *Eli Lilly and Company v Government of Canada* UNCITRAL, ICSID Case No. UNCT/14/2. See explanation of the dispute at <www.international.gc.ca>.

4.4.4 Infringement and Limitations to Infringement through Exceptions

Once a patent is granted, the patent owner has the right to prevent third parties from the acts of making, using, offering for sale, selling, or importing the patented product or process.¹¹⁸ National laws may expand on these provisions. Because the TRIPS Agreement does not allow for matters relating to parallel importing to be subjected to dispute settlement,¹¹⁹ some WTO members have permitted the parallel importation of patented products without being in violation of the importing right.

pending on the jurisdiction, certain acts will not amount to infringement and may be framed as exceptions. These include compulsory licensing in circumstances such as national emergencies and failure to supply a market.¹²⁰

Other exceptions might be regulatory review exceptions and experimental use. All exceptions, other than compulsory licences, made at the level of national law must comply with the three-step test found in Article 30 of TRIPS which provides:

Members may provide limited exceptions to the exclusive rights conferred by a patent, provided that such exceptions do not unreasonably conflict with a normal exploitation of the patent and do not unreasonably prejudice the legitimate interests of the patent owner, taking account of the legitimate interests of third parties.

A WTO panel has considered the meaning of Article 30 in a complaint against two exceptions to a patent holder's right to exclusive use in Canada's Patent Act.¹²¹ First, a "regulatory review exception" allowed parties other than the patent holder to apply for regulatory approval

¹¹⁸ TRIPS Agreement, art 28:1.

¹¹⁹ TRIPS Agreement, art 6 which does not refer to parallel importing directly but to exhaustion of rights, which relates to whether a right is exhausted once a product is put on the market. If the right is exhausted in one market then depending on if the importing country permits such imports the product may be parallel imported. See S Frankel and D Gervais 'International Intellectual Property Rules and Parallel Imports' in I Calboli and E Lee (eds) *Research Handbook on Intellectual Property Exhaustion and Parallel Imports* (Edward Elgar 2016).

¹²⁰ TRIPS Agreement, art 31 and 31 bis.

¹²¹ *Canada — Patent Protection of Pharmaceutical Products* WT/DS114/R (WTO, Panel Report). Third parties included Australia, Brazil, Colombia, Cuba, India, Israel, Japan, Poland, Switzerland, Thailand and the United States.

for the marketing of certain products, particularly pharmaceuticals, during the patent term. Second, a “stockpiling exception” allowed producers other than the patent owner to copy patented products and store them until the patent had expired. The Panel could have treated, but did not treat, these exceptions as ways of ensuring that the effective term of a patent was 20 years, rather than any longer de facto term caused by matters external to patent law. The European Communities, as they then were, claimed that both these exceptions breached patent holders’ exclusive rights to make, construct and sell a patent under Article 28(1), and that they fell foul of the requirement, in Article 27.1, for there to be no discrimination between fields of technology. Canada argued that the exceptions were permitted under Article 30. It also argued that the no-discrimination clause did not apply to Article 30 exceptions.¹²²

The WTO panel ruled that Canada’s stockpiling exception was not limited in its effect, as Article 30 required, and therefore it breached the exclusive rights provision. However, it also found that the regulatory review exception was limited. The Panel applied two different meanings to the concept of “limited”. In fact, the exception was limited because it really only applied to pharmaceuticals. The Panel did not regard this “limitation” as discriminatory against that field of technology, because in theory the exception could apply to any technology that required regulatory review. However, the fact that the regulatory review exception was in practice limited to pharmaceuticals made it limited in scope, and thus within the requirements of Article 30.

¹²² For a discussion of this aspect of the dispute and how countries ought to be able to diversify where necessary, see GB Dinwoodie and R Dreyfuss, ‘Diversifying Without Discrimination Complying with the Mandate of the TRIPS Agreement’, (2007) 13 Mich Telecomm Tech L Rev 445.

4.5 Regulatory Protection Related to Patents

There is significant contention over the role of regulatory requirements for market approval for pharmaceuticals. Other patented products that may be subject to regulatory approval include agrochemicals and veterinary medicines. The TRIPS Agreement, Article 39(4) requires that data submitted for regulatory approval for:

the marketing of pharmaceutical or of agricultural chemical products which utilize new chemical entities, the submission of undisclosed test or other data, the origination of which involves a considerable effort, shall protect such data against unfair commercial use. In addition, Members shall protect such data against disclosure, except where necessary to protect the public, or unless steps are taken to ensure that the data are protected against unfair commercial use.

As the above shows, TRIPS only requires this non-disclosure requirement to apply to “chemical products that utilise new chemical entities”. Some jurisdictions apply the same rules to biologics as they consider the phrase “new chemical entity” equally applies to biologics because they too are chemical molecules. Other jurisdictions consider that biologics are not caught by the TRIPS wording. In any event, many national laws implement different levels of regulatory protection for pharmaceuticals that are chemical entities and those that are biologics.

This is an area where some trade agreements require additional protection of exclusivity and for a longer term be provided to biologics. National laws and trade agreements may provide a specific time period for non-disclosure. Many jurisdictions also provide for data exclusivity to meet the non-disclosure requirement. This means that the data is exclusively used for the applicant for regulatory approval and not for any later regulatory approvals of generic products. Other jurisdictions, most notably India, will not disclose the information to competitors but may use it for their own internal purposes to approve generic forms of an already approved pharmaceutical. This area is highly controversial and WTO Members disagree about the best way to comply with the relevant provisions of the TRIPS Agreement.

Chapter 5

**Areas Related to
Intellectual Property**

Areas Related to Intellectual Property

The WIPO definition referred to in Chapter 4 is open-ended and includes “and all other rights resulting from intellectual activity in the industrial, scientific, literary or artistic fields”. This Chapter will discuss a range of areas that are adjacent to intellectual property regimes but in some economies are integrated with them, sometimes successfully but often to the detriment of the objectives that governments are seeking to achieve. It will discuss successful strategies for the achievement of these objectives as well as how intellectual property regimes might act as a help or hindrance in this respect. These areas include:

- traditional knowledge, genetic resources and traditional cultural expressions;
- performers rights;
- geographical indications; and
- trade secrets.

5.1 Traditional Knowledge

5.1.1 International Issues

Increases in global trade and the related cross-border flows of cultural and intellectual property related goods and services have led to an increase in the desire for the protection of local culture. They have also led to an increased market in the developed world for the 'exotic', the 'traditional' and the 'natural'. The availability of products of culture (protected by intellectual property rights) worldwide has shone a spotlight on the role of international legal norms. Questions have arisen, such as why standards of protection, such as those of the TRIPS Agreement give legal force to the protection of some cultural products but not to others.

In addition, developing economies that are net importers of intellectual property can often find themselves paying a considerable price for it. At the same time, these economies cannot extract equivalent value for their innovations and cultural expressions based on traditional knowledge and practices. Further, businesses in intellectual property exporting economies often pay no price at all for using the traditional knowledge assets of many intellectual property-importing economies or their indigenous populations. Such an imbalance has substantially contributed to the call for the protection of traditional knowledge at the international level. And in 2024 an agreement addressing a small aspect of this area was reached at WIPO (see discussion below) The debate over the protection of traditional knowledge has emerged simultaneously a broader discussion over why we have intellectual property rights at all.

5.1.2 What is Traditional Knowledge?

Defining traditional knowledge is fraught with difficulty. The reason is at once obvious if the scope of the notion of the knowledge of a culture is considered. Definition is a mechanism of legal rules to give supposed certainty, particularly to concepts of ownership. Where traditional knowledge is concerned, there are many reasons not to struggle with creating overly precise definitions, including that the term 'traditional knowledge', while widely used, is at face value misleading. It suggests that the knowledge is wholly traditional, that it is a relic of the past. The phrase does not capture the full scope of cultural heritage or indeed of the innovation systems in which Indigenous Peoples use traditional knowledge. The nature of such knowledge is not that it remains in the past, but rather that its long-standing basis and mode of transmission from generation to generation (often involving complex detail) are crucial to future developmental and innovative uses of the knowledge.

Attempts at definition can run into varying problems and may look

different depending on the discipline or perspective creating the definition. Anthropological definitions, for example, look different from international law definitions, which are by comparison open-ended.¹²³

Drahos and Frankel have noted: ¹²⁴

Without definitions, the discipline of law treats itself as undefined and uncertain. This has contributed to a plethora of definitions relating to traditional knowledge do not usually attach the same value to abstract definition. If called upon to define their traditional knowledge, they will emphasise not the analytical facets of knowledge, but rather the relational boundaries and dynamics created by the possession of knowledge. This includes indigenous peoples' relationship with their knowledge, and their responsibility to maintain and develop the knowledge for the good of society and future generations.

Māori in Aotearoa New Zealand, for example, are kaitiaki (guardians) of their knowledge. Additionally, being kaitiaki in part defines Māori culture and identity.

The openness of the approach which describes relationship boundaries differs from the international law approach. The relationship boundaries approach draws on the customary law of the relevant community for its definition. It is, therefore, in some aspects pluralistic. The extent of that pluralism may vary depending on the particular jurisdiction and how it recognises minority rights, which may or may not be recognised by the dominant legal system.

The international law approach could be seen as being sufficiently broad so as not to exclude minority rights, but its broadness is also a problem. This broadness can lead to endless ways in which opponents of protecting traditional knowledge can question the necessity for protection and the appropriate mechanisms for that protection.¹²⁵

Because the phrase 'traditional knowledge' carries with it implications that seem to 'contradict' conventional understandings of intellectual property (for example, that copyright protects expression, not knowledge or ideas) and because the phrase does not convey the

¹²³ The UNDRIP definition, for example, gives the opportunity for anyone to be indigenous.

¹²⁴ P Drahos and S Frankel, 'Indigenous Peoples' Innovation and Intellectual Property: The Issues' in Drahos and Frankel, above n 9, at 9.

¹²⁵ For a discussion of why the United States' broad objections to the protection of traditional knowledge are unfounded when considered through examples, see S Frankel, "'Ka Mate Ka Mate" and the Protection of Traditional Knowledge' in R Dreyfuss and J Ginsburg (eds), *Intellectual Property at the Edge* (CUP 2014), 193–214.

concerns that Indigenous Peoples have over the uses of their knowledge, Drahos and Frankel have suggested that the focus should not be on that knowledge.

‘Perhaps the most important thing for indigenous innovation is to make “indigenous innovation” rather than traditional knowledge the primary term of art in this field. Then policy makers would have to start asking how they might support indigenous innovation, as opposed to dividing the spoils from traditional knowledge.’¹²⁶

Definition at a domestic level may be a little more straightforward than definitions which, because they are designed at international level, attempt to accommodate all. In domestic law, the number of cultures relevant to the definition will not necessitate including the entire world. That said, making a national definition is by no means easy. Discussions that have taken place in New Zealand explain traditional knowledge and Māori peoples’ relationship with it in some depth. An introductory explanation is as follows:¹²⁷

In the 1,000 years or so in which Māori have lived on the island of Aotearoa, they have developed – among other things – artistic and cultural traditions that are uniquely of this place. The underpinnings of these traditions are found in the environment itself – mountains, rivers, sea and sky, plants and animals – and their expression takes many forms, ranging from the architectural achievements of the great meeting-house and canoe builders, to the work of weavers, carvers, tohunga tā moko, musicians and the like, as well as in te reo Māori, the language itself. These works are founded in and reflect the body of knowledge and understanding known as mātauranga Māori. Some of them are ancient, others not, but those who are responsible for safeguarding them, whether or not they are original creators of the works, have a very particular relationship with them. We call this the kaitiaki relationship.

Some jurisdictions have created law to protect traditional knowledge (e.g. Peru, the Cook Islands). Others have laws that deal with intersection of traditional knowledge with intellectual property to which this chapter now turns.

¹²⁶ Drahos and Frankel, above n 9, at 28.

¹²⁷ *Ko Aotearoa Tēnei*, above n 45, at 31.

5.1.3 Interface and Defensive Strategies

The protection of traditional knowledge broadly remains a topic of debate in national jurisdictions and internationally. A central aspect of the traditional knowledge debate is about the intersection between intellectual property and traditional knowledge. This is more than just traditional knowledge being incorporated in intellectual property rights, such as a culturally significant song being used in a blockbuster film or where a business uses traditional knowledge to sell its brands. The intersection is where national legislatures have developed mechanisms to address these kinds of conflicts on uses or misuses of traditional knowledge. An example is found in New Zealand where the Trade Mark Acts provides that a third party can object to the offensive use of a trade mark, provided there is offensiveness to a significant section of the community “including Māori”. Another interface mechanism is the requirement of disclosure of the use of traditional knowledge and genetic resources in the patent system. Examples of this are found in the EU and in Peru. The 2024 Genetic Resource and traditional Knowledge Treaty, agreed at WIPO, centres around a disclosure requirement in patent systems of this nature.¹²⁸

¹²⁸WIPO, Genetic Resources and Traditional Knowledge Treaty (not yet in force) <www.wipo.int>.

5.2 Performances of Performing Artists, Phonograms and Broadcasts

These rights are particularly relevant to music. When a composer or songwriter produces a new composition (protected as a musical work under copyright or authors' rights, as explained in the copyright section of the previous Chapter), the work can only be published and reach the public as sheet music, unless it is performed by the composition's author or by a third party. That performance may be recorded on a sound recording (a phonogram). The performance or a recording of the composition may be a communication, and performance rights address the ways in which such performances are communicated (including as a broadcast or on the internet).

The Rome Convention 1961 protects the rights of performers for their performances, phonogram producers for their sound recordings, and broadcasting organisations for the signal carrying works such as performances and sound recordings. Performers also include actors who perform in audio-visual works such as movies, and dancers. These rights are also incorporated into the TRIPS Agreement.

Many jurisdictions call these rights "neighbouring rights" or "related rights to copyright". Some jurisdictions combine them with copyright legislation

5.3 Geographical Indications

Names such as “champagne”, which have traditionally designated not only a place but also a particular product that comes from that place, have become valuable in trade and controversial in intellectual property. Traditional producers of products like wine, perhaps conscious that other economies may well be able to produce similar products, have increasingly sought to protect geographical designations as a way to restrict the use of a name, and hence to protect the value, of their product. European producers who have litigated their geographical indications emphasise the traditional, age-old distinctive nature of their product.

While the desire of producers to protect products from a particular region is understandable, the protection of geographical indications is controversial. The overprotection of such indicators has the potential to remove from the language words that have become commonly identified not just with products from a particular area, but also more generally with products that are similar to what might have come from the original traditional area. While the controversy over such protection is evident in TRIPS, nowhere is this controversy more apparent than in the European bilateral post- TRIPS trade agreements to reserve words relating to wines, dairy products, oils and fats, spices and other products.

5.4 Trade Secrets

A trade secret is information that has commercial value to a business and is not available to the general public. Examples of trade secrets are know-how, methods, formulas and recipes. Trade secrets can also include processes that may be ineligible for other types of intellectual property protection such as patents. Famous trade secrets include the Coca Cola recipe and the Google search algorithm. Importantly, many businesses have both trade secrets and patents that while not identical may relate to each other.

If an invention is not something that can be patented, inventors may only be able to rely on trade secrets to protect their confidential information. Sometimes, relying on trade secrets can provide greater protection than patents. The Coca Cola recipe is said to have been a secret since 1891, which is far longer than the 20 years of protection a patent provides. Unlike patents and other forms of intellectual property protection, there is no form of registration for trade secrets and different economies treat them in different ways including protection under contract, (such as non-disclosure agreements and restraint of trade clauses in employment contracts) common law doctrines of breach of confidence and even national security legislation.

The Paris Agreement (Article 10 bis), incorporated into the TRIPS Agreement (Article 39), places an obligation on Members to provide protection against the use of undisclosed information in a manner “contrary to ordinary commercial practices”. The broadness of this protection means that undisclosed information/trade secrets are treated differently in different jurisdictions and the extent of protection is a matter of some considerable international debate and disputes before many courts.

Chapter 6

International Coordination and Cooperation

6.1 Scope of this Chapter

International multilateral coordination and cooperation on intellectual property goes back to the late nineteenth century with the foundation in 1893 of the United International Bureau for the Protection of Intellectual Property (known by its French acronym as BIRPI). BIRPI brought together the bureaus established under the Paris Convention 1883 (which covered patents and trade marks) and the Berne Convention in 1886 (which covered copyright). In 1968 the World Intellectual Property Organization (WIPO) succeeded BIRPI.

Today WIPO administers 15 multilateral instruments covering nearly all aspects of intellectual property. Frankel and Gervais note that all these instruments share some or all of the following objectives:

- i. Setting minimum standards of protection that must be adhered to by each member state. We refer to these as substantive instruments.
- ii. Setting up a framework to enable the creation of an intellectual property right in one member state to result in, or assist in, the creation of an intellectual property rights in another member state – in other words harmonising the description of goods and services for the purposes of registration. We refer to those as classification instruments.
- iii. Easing the process by which a right holder may apply to register his or her intellectual property right (where registration is required) by creating multilateral registration mechanisms and authorities. We refer to those as procedural instruments.¹²⁹

WIPO instruments are based on two key principles. First, they do not only set minimum standards. For example, the Paris Convention does not specify a minimum term for patents and the Berne Convention does not set a minimum term for copyright. Second, the key provisions implementing each of the above objectives are based on the principle of national treatment where foreigners are treated on the same basis as nationals under a member's intellectual property provisions. Both principles also preserve the ability of members to adopt intellectual property provisions in their own interests.

This BIRPI/WIPO approach provided a sound platform for international property coordination. The principle of national treatment meant that creators and innovators had more certainty to seek intellectual property rights outside their home markets, thereby increasing the incentives to create and innovate. As new issues emerged, it was possible to add new instruments.

Beyond these comments, it is not the objective of this Chapter to

¹²⁹ S Frankel and DJ Gervais, *Advanced Introduction to International Intellectual Property* (Edward Elgar, 2016).

outline all the instruments administered by WIPO. In many cases, the relevant WIPO agreements have already been traversed in earlier Chapters of this primer, particularly those dealing with different forms of intellectual property rights. There are also several good guides available which describe and analyse these instruments.¹³⁰ Instead, the remainder of this Chapter comments on the issues that have arisen from taking international intellectual property coordination outside the WIPO framework and attaching intellectual property provisions to global, regional and bilateral trade rules.

¹³⁰ A description of each of the instruments administered by WIPO can be found on its website at <www.wipo.int/treaties/>. The publication by Frankel and Gervais in the previous footnote provides a particularly comprehensive and analytical description of intellectual property instruments both within WIPO and elsewhere.

6.2 The WTO TRIPS Agreement

The TRIPS Agreement was a radical departure from the approaches to intellectual property coordination that had been developed under BIRPI/WIPO. The TRIPS Agreement was part of the single undertaking that led to the creation of the WTO in 1994 following the Uruguay Round of trade negotiations. Intellectual property issues had not loomed large when the Uruguay Round was launched in 1986. As a result of intense lobbying first from US corporate interests (in sectors such as pharmaceuticals and entertainment), later joined by their counterparts from the EU and Japan, the TRIPS Agreement represented one of the major outcomes of the Round.

First, the TRIPS Agreement incorporated key parts of WIPO's Berne Convention and Paris Convention, including the use of minimum standards and national treatment. Those Conventions and TRIPS all require members to implement an agreed set of intellectual property provisions in their law as minimum standards (i.e. they can make these standards stronger but not weaker). The Berne Convention required a minimum period of copyright for 50 years and this was one of the provisions incorporated into TRIPS. The TRIPS Agreement furthered this framework with some more detailed and prescriptive provisions for intellectual property protection. Key examples of this included a minimum patent term of 20 years and a section that broadly defined patentable subject matter. Neither were present in the Paris Agreement. TRIPS also added provisions in other areas such as trade marks, plant variety rights and geographical indications. There were also detailed provisions on civil enforcement and provisions on criminal enforcement in national intellectual property regimes of a type not previously included in the WIPO agreements.¹³¹

Second, the TRIPS provisions were subject to dispute settlement at the WTO, including on whether members had met the minimum standards of enforcement in their national laws and legal systems. This was a problem for those developing members that either lacked the resources to implement these provisions, or which might seek to rely on light enforcement provisions to mitigate their effects. Dispute settlement under TRIPS has been subject to regular use. As of 2025, 45 disputes had been initiated under TRIPS of which at least 30 were initiated by developed members.¹³² Of the latter, 27 were initiated by the United States and European Union, most against developing economies.¹³³ According to one study, many of these were initiated

¹³¹ Again, it is not the intention of this primer to list out the provisions of the TRIPS Agreement in detail. A good description of the Agreement can be found on the WTO website at <www.wto.org>.

¹³² See <www.wto.org>.

¹³³ N Syam, 'A Review of WTO Disputes on TRIPS: Implications for the Use of Flexibilities for Public Health' (the South Centre, 2022) <www.southcentre.int>.

soon after TRIPS had entered into force with the possible motivation to push a favoured interpretation of specific provisions that remained ambiguous at the end of treaty negotiations.¹³⁴ However, very few of them led to Panel reports and even fewer to Appellate Body reports as they were resolved through negotiations and before hearings took place.

Third, TRIPS Agreement formed part of a single undertaking under the WTO where all parts of the Uruguay Round were bundled together (goods, services and intellectual property) and parties could not choose to belong to some parts but not to others. This left developing and other technology importing Members being forced to assess the gains they were making from the Round's trade provisions as against the losses being incurred from the TRIPS Agreement. Given that the TRIPS provisions were developed as the Uruguay Round progressed, it is highly likely that most lacked the evidence and analysis on which to base these calculations. Further, when it came to negotiating on border barriers such as tariffs, economies gained through improved access to other markets and (by lowering their own barriers) through increased competition, efficiency and consumer welfare. With TRIPS, it was clear that the serendipitous "win-win" nature of trade negotiations which were largely restricted to removing barriers at the border had been broken.¹³⁵ Now many WTO members were being forced to trade off market access gains for commitments to implement and enforce intellectual property laws that were less well suited to their circumstances.

¹³⁴ M Daku M and JP Krzysztof, 'Who Holds Influence over WTO Jurisprudence', (2017) 20 J Int Econ L 233.

¹³⁵ For the removal of border barriers, WTO Members benefitted both because they gained from improved access to other markets and because they were exposing their economies to greater competition with gains for consumers and the competitiveness of domestic business.

6.3 Impacts of the TRIPS Agreement

Table 1.

TRIPS: Who Gains?

Estimated changes in Payments for Technology and in FDI Flows for selected countries for full application of TRIPS (millions of 2000 dollars)

Country	Net Patent Rent	U.S.-owned FDI Assets	U.S. Receipts from Unaffiliated Royalties and License Fees
United States	19,083	n/a	n/a
Germany	6,768	-1,180	100
Switzerland	2,000	-102	0
France	3,326	n/a	n/a
Australia	1,097	-279	2
Ireland	18	-267	14
New Zealand	-2,204	-83	4
Portugal	-282	97	n/a
Greece	-7,746	51	n/a
Netherlands	241	-1,503	32
Spain	-4,716	-341	47
Japan	5,673	-2,533	783
United Kingdom	2,968	-1,369	29
Canada	-574	-2,396	69
Panama	n/a	309	n/a
Israel	-3,879	6	0,6
Colombia	n/a	1,190	n/a
South Africa	-11	25	11
Rep. of Korea	-15,333	270	388
Mexico	-2,550	3,465	148
India	-903	139	63
Brazil	-530	3,505	124
Argentina	n/a	721	64
Chile	n/a	1,062	n/a
China	-5,121	687	n/a
Indonesia	n/a	1,966	181

Source: World Bank staff and Maskus (2000a). Figures for net patent rents update McCalman's (2001) coefficients applied to 1995 data. Calculations for the stock of FDI assets use coefficients from an econometric analysis of the impacts of patentrights on patent applications, affiliate sales, exports, and affiliate assets, using data over 1986–94 for the foreign operations of U.S. majority-owned manufacturing affiliates in several developed and developing countries. These coefficients were applied to 1994 asset stocks and updated to year 2000 dollars. Computations for royalties and license fees use coefficients from an econometric analysis of the effects of patent rights on U.S. licensing volumes in manufacturing for 26 countries in 1985, 1990, and 1995. These coefficients were applied to 1995 royalty fees and updated to year 2000 dollars

Much of the evidence on the impact of the TRIPS Agreement on individual WTO Members was gathered after the Agreement had come into force. The World Bank's 2002 World Development Report estimated the net patent rents and changes to US FDI resulting from full implementation of TRIPS. The results are set out in Table 1.¹³⁶ According to these results, the main beneficiaries from TRIPS in terms of increased patent rents were the United States, Japan and technology exporting European WTO members (e.g. Germany, France, the United Kingdom). The main losers were technology importing developed economies (e.g. Greece, Spain, Israel and New Zealand) and rapidly growing developing economies (e.g. China, Korea and Mexico). Poorer developing economies lost much less (because they had less to lose).

¹³⁶ Source: World Bank Development Report (2002).

Taking these results a step further, J Michael Finger writing for the Asian Development Bank compared the gains from extended patent life to the gains from trade liberalisation on industrial goods under the Uruguay Round. The results are set out in Table 2. The results show that the United States gained 13 times as much from improved returns from patents than from improved access for industrial goods. At the other extreme, Korea lost by a factor of 18 to 1 (reflecting that Korea was at that time developing rapidly but from a low base meaning that the adoption of foreign-developed technologies was much more important to Korea than developing new technologies itself).

Table 2.

TRIPS Patent Requirements and Uruguay Round Tariff Liberalization on Industrial Goods: Impacts Compared

Country	Gain from TRIPS Patents Requirements/ Gain from Industrial Goods Tariff Liberalization (ratio, not percentage)
United States	13.1
Germany + France + United Kingdom*	3.6
Japan	2.1
Australia	1.8
People's Rep. of China	-4.7
Mexico	-7.0
Rep. of Korea	-18.0

Note: * The Line for Germany + France + United kingdom compares the gains from TRIPS-patents requirements for these three countries with Harrison et. al estimates of the gains from tariff liberalization to all members of the European Union.

Source: Estimates of TRIPS impact: World Bank (2002, Table 5.1). Impact of tariff liberalization on industrial goods: Harrison et. al (1996, Table 8.6).

TRIPS contained a limited number of much vaunted “flexibilities” (in such areas as compulsory licensing and “exhaustion” of copyright) but these also proved to be of limited use in protecting the interests of developing and technology importing economies. For example, Ramani and Urias have reviewed the use of compulsory licensing for public health in middle and low-income countries. Compulsory licensing is considered an important policy instrument to make medicines more affordable in economies where a pharmaceutical industry does not exist or where stronger TRIPS provisions on product patents are likely to increase the prices of medicines placing them out of the reach of a large segment of the population. Based on a systematic review of the existing evidence on the impact of compulsory licensing on drug prices, Ramani and Urias identify 24 instances of compulsory licensing

in 8 economies – which is a very limited use of this much touted flexibility. They attribute this limited use to the very restrictive scope for the use of compulsory licensing in the TRIPS provisions as well as opposition from larger developed economies to their use.¹³⁷ But this may not be the whole picture as the threat of compulsory licensing can also serve to bring right holders to the negotiating table.

As a result of this and related work, developing and technology importing economies became progressively more aware of the extent of the costs that TRIPS was imposing without immediate and tangible benefit. Following the Uruguay Round, this served to help undermine their trust and confidence in the multilateral trading system as a whole. In the subsequent Doha Round, which commenced in 2001, the TRIPS Agreement was heavily criticised for limiting future domestic policy flexibility and delaying the transfer of new technologies to developing economies.¹³⁸ As is well known, overall the Round did not go well. Other issues with a direct bearing on domestic policies – such as competition policy and investment – were dropped in 2003 before the Round collapsed in 2011. The Doha Round, however, produced the Doha Declaration on Public Health,¹³⁹ which included provisions affirming that members could declare for themselves when there were health emergencies. The Doha Declaration was also the basis from the amendment to the TRIPS compulsory licensing system was made so that countries could make pharmaceuticals for export under creation compulsory licences with various conditions limiting their use.¹⁴⁰

Yet there is another side to this story. At the time of its creation in the mid-1990s, the TRIPS Agreement was the international high water mark in intellectual property protection. In a relatively short period of time, however, it has become the baseline for intellectual property protection globally. The twentieth-century opponents of the TRIPS Agreement have now become its twenty-first-century advocates (the exception is least-developed countries that have extended timeframes to comply with TRIPS).¹⁴¹

A large part of the reason for this was that as business sought to globalise, there were real advantages to a consistent and well-enforced set of intellectual property standards being in place. This

¹³⁷ E Urias and ER Shyama, 'Access to Medicines after TRIPS: Is Compulsory Licensing an Effective Mechanism to Lower Drug Prices? A Review of the Existing Evidence' (2020) 3 J Int Bus Policy 367.

¹³⁸ WE Keating, 'The Doha Round and Globalization: A Failure of Economic Development' (CUNY Academic Works, 2015).

¹³⁹ WTO Ministerial 2001, *Doha Declaration on the TRIPS Agreement on Public Health*, TRIPS/WT/MIN(01)/DEC/2, 20 November 2001.

¹⁴⁰ WTO, Obligations and Exceptions <www.wto.org>.

¹⁴¹ Above n 46.

was particularly the case for the growth of global value chains (GVCs). Lead firms in GVCs had been particularly concerned about the protection of “intangible” assets such as intellectual property while outsourcing the production of “tangible” assets to more competitive developing economies. With the passage of time, many developing economies themselves became increasing generators of intangible assets.¹⁴² Even if some developing economies still regard TRIPS compliance as problematic, its demanding standards are closer to their interests than the TRIPS-plus standards that are settled or on the negotiating agenda in bilateral or plurilateral FTAs.

¹⁴² S Athreye, L Piscitello and KC Shadlen, ‘Twenty-five Years since TRIPS: Patent Policy and International Business’ (2020) 3 J Int Bus Policy 315.

6.3 The Development of “TRIPS-Plus” Provisions

A key issue with TRIPS is that it represented a set of standards based on knowledge and experience available in the mid-nineties. This primer has already set out the problems that arose once proper empirical evaluation of these standards started to be carried out. But another set of problems soon arose with rapid technological development. For example, the TRIPS copyright provisions did not adequately anticipate the subsequent growth of the internet and how it would facilitate the unauthorised use of software and other forms of digital content.

Not long after the WTO's foundation this issue was addressed by the negotiation of two WIPO treaties, together known as the “internet treaties”. These were the WIPO Copyright Treaty (WCT) and the WIPO Performance and Phonograms Treaty (WPPT), both aimed at setting a framework for securing digital copyright. The United States and the European Union then faced the problem that membership of these treaties, being part of the WIPO system, was entirely voluntary. So, they set about requiring accession by partners in subsequent FTAs they negotiated. Soon, compulsory membership of the internet treaties became standard boilerplate provisions for inclusion in the intellectual property chapters of FTAs in which the United States and European Union were members. This also led to pressure for international agreements about exceptions to copyright. The only successful negotiation for an exception treaty is the Marrakech agreement for access to copyright works for the visually impaired (discussed in Chapter 4).

After this, under pressure from domestic lobbies, United States and European Union negotiators sought to include a growing number of TRIPS-plus provisions in the intellectual property chapters of FTAs, each Agreement seemingly going further than last. These provisions were extensive and once again, this primer will not go into them in detail. But one example has been the extension of the copyright term mandated under TRIPS from 50 to 70 years. Significant additional protections have also been provided for pharmaceutical patents. A key demand has been to provide patent-term extensions for drugs (and agricultural chemicals) in cases where health authorities issued marketing approvals with undue delays. Another has been for authorities to grant “second use patents”, or protection for existing drugs that are shown to be effective in treating indications beyond the initial claims. A major change compared to TRIPS is the requirement in some FTAs that local health authorities ban the registration of any generic drugs during the lifetime of a patent. This “linkage rule” precludes approval of any generic medicine until the regulatory authority can certify that no patent would be violated by it.¹⁴³

These TRIPS-plus provisions in FTAs magnified all the problems

¹⁴³ K Maskus, ‘International Agreements on Intellectual Property Rights: TRIPS and Beyond’ in R Looney (ed) *Routledge Handbook of International Trade Agreements* (2018); see also SS Mishra ‘Global Perspectives on Patent Linkage: Insights from the US, Europe, and India’ (IIPRD, 30 December 2023) <www.iiprd.com>.

and challenges that had been evident with TRIPS. Developing and technology importing economies were once again faced by a bundling of costly intellectual property provisions with more advantageous trade provisions. Often the trade negotiators who were ultimately responsible for negotiating on behalf of their economies had limited expertise in intellectual property issues and were incentivised to use intellectual property concessions as trade-offs for trade access gains. There were few examples of economic evidence being used to measure the extent of these concessions while the trade access gains were almost always the subject of major publicly available modelling exercises.

But not all FTAs took this approach. Since TRIPS came into force, FTA intellectual property chapters can be divided into two basic categories. Those involving the United States and EU have involved increasing numbers of TRIPS-plus commitments. Those without the United States and EU (often involving developing and/or technology importing economies) have simply endorsed TRIPS. Examples of the latter are the ASEAN, Australia and New Zealand FTA (AANZFTA) and the Regional Comprehensive Economic Partnership (RCEP). Some have questioned the point of simply endorsing TRIPS but the members of these agreements have done this quite deliberately. The hoped for symbolism is that TRIPS should be seen as much as a ceiling as a floor for international commitments (obviously leaving members to go further as part of their domestic policy approaches if they so wish). Such agreements also provide (non-binding) pathways to resolving intellectual property disputes should these arise.

These differences came to a head in the negotiations for the Trans-Pacific Partnership (TPP) between the United States and ten other APEC economies which took place between 2010 and 2016. The intellectual property chapter was extremely hard fought with many economies being determined to limit the number of TRIPS-plus provisions (or at least to limit those that went further than their existing agreements with the United States). In pursuing their position, these economies:

- worked with each other to develop a united front on specific issues;
- demanded that the United States produce evidence that specific proposals were in the interests of the region (or at least its own interests). They also tabled evidence to support their own positions;
- looked to “educate” their trade colleagues on the importance of intellectual property issues for the agreement as whole;
- sought to make the negotiations as transparent as possible, short of releasing the negotiating text (although the text was leaked on several occasions); and
- cooperated closely with stakeholders from across the region with common interests.

The negotiations proved to be extremely complex and contentious and the agreement on the intellectual property chapter was delayed until the very end. The parties did agree to TRIPS-plus provisions but these were not as extensive and more flexible than those achieved by the United States in previous agreements. It is not surprising that when in 2016 the United States decided to leave the TPP, the remaining members of the successor agreement, the Comprehensive and Transparent Agreement for Trans-Pacific Partnership (CPTPP) decided to suspend several of the major TRIPS-plus provisions in the intellectual property chapter.¹⁴⁴ CPTPP members made it clear that they wanted improved access to the US market in exchange for bearing the costs that the intellectual property provisions would entail for them.

¹⁴⁴ For an explanation of the suspensions see CPTPP v TPP at <www.mfat.govt.nz>.

6.4 Future of International Intellectual Property Cooperation

There have been some signs that the differences on intellectual property between large technology exporting economies and their developing and/or technology counterparts have been starting to narrow. This has been largely due to a reassessment within the United States and European Union themselves. A critical event was the domestic process involved in ratifying the text of United States, Mexico and Canada Agreement (USMCA) which came into force in 2020. US trade negotiators had achieved agreement on a 10-year period for data protection for biologic pharmaceuticals. This would have increased costs for Canada and Mexico, which have eight and five-year protection periods respectively, before competition from “biosimilars” (or generic biologic drugs) can occur. However, the US Congress refused to approve this provision even though domestic US law provided for 12 years protection. This was on the grounds that the United States should retain the domestic policy space to lower the threshold in the future (exactly what other parties had been arguing). The agreement also included no provisions on “patent linkage” and a much lighter definition of patentable subject matter than had been present in previous US FTAs.

Reassessment is also evident in other areas such as digital copyright and the treatment of orphan works¹⁴⁵. Alongside the fact that any further negotiations on most intellectual property issues, within the WTO, have not advanced, this situation provides the opportunity for rethinking how international intellectual property cooperation can proceed in future. This primer is not the place to provide a detailed prescription on how that might occur but the following features would appear to be highly desirable in that process:

- development of agreed analytical and empirical evidence that sets out the costs and benefits of any future commitments on intellectual property;
- an open and transparent process for any future negotiations where negotiating texts are made public and are open to input from all interested parties (as already occurs in some circumstances);
- ensuring that all stakeholder groups are able to participate in the process of developing agreements, in line with principles of good regulatory practice;
- differential provisions for developing economies in future agreements so that obligations are assumed by these economies only when it makes policy sense to do so; and
- a strong process of economic and technical cooperation that ensures that sensible and practical strategies are adopted in such areas as the development of intellectual property laws and the granting and enforcement of rights in line with the interests of individual economies.

¹⁴⁵ Orphan works are works that are still under copyright but for which the identity of the author and/or their descendants are no longer known.

Going Forward in APEC

Going Forward in APEC

This Primer has shown individual APEC members are required to set intellectual property policies in an increasing complex and dynamic environment. When devising intellectual property policy and laws there is much at stake, particularly when considering wider settings for innovation, for the adoption of new technologies and ultimately for sustainable growth. The impact of intellectual property policies is important in such areas as digital technologies and AI, pharmaceuticals and green technologies needed to tack climate change.

To maximise the net benefits from intellectual property policies, this Primer recommends that each APEC economy seek to:

- implement policies that are suited its own domestic circumstances, within the international framework. Often the appropriate settings for developing economies will differ from those applied in developed economies, as will the settings between small and large economies. The industrial structure of each economy will also influence what settings are appropriate;
- take account of a broad range of related policy areas such as competition, development, health, technology transfer, the interests of Indigenous Peoples and digital/AI;
- ensure, where possible, that its intellectual property policies and laws are based on rigorous analysis and evidence;
- position intellectual property laws and institutions within the laws and traditions of their own economies and ensure that adequate resources are available, such as for patent and trademark offices, enforcement regimes including the courts;
- recognise that appropriate settings will change over time, particularly as economies develop and their industrial structure changes;
- take full account of international obligations that arise from membership of international organisations and RTAs/FTAS. At the same time economies should take account of the flexibilities provided by these agreements to implement policies suited to their domestic circumstances.

Today's dynamic environment has led to increasing debate within APEC economies on the appropriate settings for intellectual property policies. Part of this is due to the rapid growth of digital technologies and AI where rapid innovation is occurring cumulatively and in clusters. Many are questioning whether the setting for intellectual property rights are effective to promote innovation and the timely realisation of consumer benefits. Relatedly, others ask whether a different approach to intellectual property policies could improve the dissemination of innovative products and technologies as a response to emergencies such as pandemics and climate change.

There is much that APEC economies can learn from each other on all these issues. But the role of intellectual property policies is not always well understood within wider APEC policy communities such as trade and economic policy. This points to a pivotal future role for the APEC Intellectual Property Experts Group (IPEG) as an incubator of ideas on new approaches to intellectual property policies.