

Submission to the Productivity Commission

Intellectual Property Arrangements: Response to the Draft Report

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The Productivity Commission has asked for comments on its Draft Report for its reference on Australia’s “Intellectual Property Arrangements”. This Submission focuses on one of the Commission’s Draft Recommendations (6.2); however, it has direct implications for one other Draft Recommendation (8.1) and the underpinnings of **Chapter 16** of the Draft Report. There will also be a brief reference to Draft Recommendation 2.1. The submission builds on the material that I provided in my submission to the Commission’s Issues Paper. It does not, however, merely repeat the same material. While the substance of the submission focuses on the patent system, aspects of it may be relevant to other intellectual property (IP) rights.

Draft Recommendation 2.1

I commend the Commission’s desire to set out the principles that should underpin the IP policy. The selection of “effectiveness”, “efficiency”, “adaptability” and “accountability” as the principles make sense. I, however, draw the Commission’s attention to other research that demonstrates that a different set of principles can be seen to underpin the current patent system. This approach offered three “first order” principles: “state power”, “individual choice” and “knowledge is power” and four “second order” precepts: “patents as incentive”, “accountability”, “accessibility” and “acceptance of risk”.¹ As will be seen below, the thinking around the first precept has changed (though it persists in the minds of many), and so this research is only offered as an alternative schema for the Commission’s consideration – its operation as a more political, rather than economic, perspective may count against it. As such, the reference to this research is to demonstrate that a perspective wider than a simple economic one produces a more nuanced understanding of the system.

Draft Recommendation 6.2

Inclusions in Objects Clause

I support Draft Recommendation 6.2 to the extent that it calls for an Objects Clause to be inserted into the *Patents Act 1990* (the Patents Act) – on the basis that clarity of purpose is an aid to effective regulation.² I am not clear, however, that the contents of the Draft

¹ C. Dent, ‘An Exploration of the Principles, Precepts and Purposes that Provide Structure to the Patent System’ [2008] (4) *Intellectual Property Quarterly* 456.

² See generally C. Dent, ‘The Possibilities of a Regulatory Approach to Answer the Question: Should Genetic Inventions be Patentable?’ (2012) 22 *Journal of Law, Information and Science* 16, 26-8.

Recommendation are sufficient or appropriate. To take an obvious omission – if the Commission is concerned about the creation of new socially valuable inventions, why are “inventors” not included as a category of interested parties? “Follow-on innovators” are, but the initial inventor is not. The Commission did not even engage with the possibility that the interests of the inventors in the system would be different to those of the patent applicant. Further, the competitors of patentees, those without patents, are also not explicitly mentioned – despite the fact that they are the ones most directly affected by the monopoly grants. The Commission may feel that the interests of competitors are covered by the interests of patentees (where the competitor also holds patents – though not all do) or they are covered by the reference to the wider Australian society; however, as regulatory theory supports the idea of greater clarity and the inclusion of competitors would emphasise the interaction of the patent and the competition law systems. For a more complete description of my arguments around an Objects Clause, see my Submission to IP Australia’s Review of “Patentable Subject Matter”.³

Purpose of Patent System

A larger concern with the Objects Clause is the fact that the Commission accepts, without question, the current “purpose” of the patent system. The Commission did ask, in the Issues Paper, about the provenance of the settings of the system and yet failed to consider its historical context in the Draft Report. If material from any point prior to the 1960s is considered, then it would be evident that the idea of patents as *incentives* has been around for only about 10% of the system’s existence.⁴ Nelson,⁵ Arrow⁶ and Nordhaus⁷ were pioneers of this perspective.⁸ Importantly, however, they came up with it *after* the vast majority of the settings were put in place.⁹ In other words, the current understanding of the policy is an *ex*

³ The number of references to Submissions to that Review in the Draft Report suggests that the Commission has access to all the Submissions to the Review. If that assumption is wrong, then I am happy to provide a copy of the Submission on request.

⁴ It may be noted that Machlup and Penrose used the term “incentive” when describing the nineteenth-century patent system; however, that was their “translation”: F. Machlup, and E. Penrose, ‘The Patent Controversy in the Nineteenth Century’ (1950) 10 *Journal of Economic History* 1. The literature of the earlier century did not use that term.

⁵ R. Nelson, ‘The Simple Economics of Basic Scientific Research’ (1959) 67 *Journal of Political Economy* 297.

⁶ K. Arrow, ‘Economic Welfare and the Allocation of Resources for Invention’ in Universities-National Bureau Committee for Economic Research, *The Rate and Direction of Inventive Activity: Economic and Social Factors*, Princeton University Press, Princeton, 1962.

⁷ W. Nordhaus, *Invention, Growth and Welfare: A Theoretical Treatment of Technological Change*, MIT Press, Cambridge, 1969.

⁸ The suggestion that their thinking was a separation from past theory is reinforced by the fact that Nelson and Arrow cited no other work published prior to 1950.

⁹ The question of why there was this spate of economic analysis at the time does not produce a clear answer. Nelson discusses a number of factors that gave rise to the then ‘developing interest in inventive activity’ in R.

post facto rationalisation of what was already in existence. It is true that the nineteenth-century system had, as a focus, the rewarding of the patentees. This is related to the notion of incentive; however, it places a much greater emphasis on the interests of the capitalist class – to the exclusion of the wider public (to the extent that the public interest is rarely referred to in nineteenth-century analyses of patents).

More recent research also shows that the nineteenth-century system reflected the concerns of the classical economists.¹⁰ The following few paragraphs are a summary of the relevant parts of that article. The conclusion of that research was that, by the time of the *Patents, Designs and Trademarks Act 1883*, patents had come to be seen as exchangeable sites of value – with the emphasis being on the commercialisation of useful knowledge. Further, the bureaucratic systems developed in such a way as to facilitate, or make more efficient, the exchange of the grants – with exchange, value and efficiency being central issues of concern for the political economists of the time. Underpinning this purpose, then as now, was the assessment of individuals as financially self-interested. Unsurprisingly, this understanding of the self-interested individual extends as far back as the seventeenth-century patent system and, therefore, should not be seen as controversial.

With respect to patents being artefacts of value, the requirements around the eighteenth-century specification became more rigorous. My submission to the Commission’s Issues Papers highlighted the “birth” of the “person skilled in the art”. There, the history was to emphasise the commercial nature of the knowledge protected. The standard required for specifications also goes to the value of the granted patent. The knowledge in the specification was expected to be both workable and worked. If the invention was not workable, then the person skilled in the art would know that it was not workable and, if it was not worked, then the invention had no value. The case law of the nineteenth century, therefore, shows that the judges were engaging with the issue of who was supposed to read the specifications and the nature, or the “quality”, of the knowledge that they could be presumed to have. In addition, as a result of the 1883 Act, the processes of defining the invention developed further. It was

Nelson, ‘Introduction’ in Universities-National Bureau Committee for Economic Research, *The Rate and Direction of Inventive Activity: Economic and Social Factors*, Princeton University Press, Princeton, 1962, 3. Further, Schumpeter, earlier in the twentieth century had advanced the theoretical understanding of the “entrepreneur” (as opposed to the capitalist) – see, for example, the discussion in J. Schumpeter, *Capitalism, Socialism and Democracy*, Harper Perennial, New York, 2008, 131-4 and J. Schumpeter, *History of Economic Analysis*, Oxford University Press, New York, 1994, 891-8.

¹⁰ C. Dent, ‘19th Century Patent Law and Classical Economics: Patents as Exchangeable Sites of Value’ [2016] (2) *Intellectual Property Quarterly* 103. This issue will not be published until July 2016. A pre-publication version of the article will be supplied on request.

only then that patent “claims” became a required part of the patent application. These claims are the detailed aspects of the invention that define the monopoly. As such, they are more fine-grained than the broad description in the specification. The claims, then, provided a clear picture of what was new about the invention – making it easier for those reading the patent documents to assess the value of the patent.

The reforms to the challenge procedures also highlighted the value of the patents. One of the key reforms of the *Patent Law Amendment Act 1852* (the 1852 Act) was the introduction of a procedure by which a third party could oppose the patent application of another patentee (s. 12) prior to its grant (a cheaper procedure than filing a writ). After these reforms, the key group of people who judged the specifications were the competitors of the patentee with that judging either coming in the form of an opposition or a challenge to the validity of the granted patent. The opposition procedure was the only pre-grant process for challenging the novelty of the applications – as the work of the new patent examiners did not include an examination for novelty. In effect, then, it would only be people with an intimate knowledge of the area of technology and its commercial value who would be able to successfully challenge a grant or application – with, in many cases, this expertise arising from their operation in the same market as the patentee. In other words, the processes of challenge meant that, for those patents that had value, there were mechanisms by which the value could be confirmed. Taking this a little further, a patent that had been challenged, and survived, would have been seen as much more valuable than one that had simply been registered at the Patent Office. This perspective, anecdotally at least, persists today.

With respect to the drafting of the specifications, it was also in the nineteenth century that the patent attorney profession rose to prominence. The use of a (relatively small) profession also would have had the effect of standardising the form of patent applications. The specifications would have been drafted in similar way, as would the claims of the patents (once they became a required part of the process). Again, this would have simplified the process for patentees to understand the scope of their, and their competitors, patents. It would also have simplified the process by which a prospective purchaser of a patent would have valued her or his potential acquisition – also, potentially, reducing the costs faced by patentees.

The exchange of these valuable artefacts was also facilitated by other nineteenth-century reforms. Under the 1852 Act, for example, a new system of ordering was instituted. The legislation required that indexes of filed specifications be prepared (s. 32), a ‘Register of Patents’ had to be maintained (s. 34) as did a ‘Register of Proprietors’ (s. 35). These reforms

bureaucratised the ordering of the patent grants and changed the practices around accessing patents. The register was a central repository of grants that recorded significantly more information than was previously available. This information included the specification, any amendments or extensions to the patent, whether it was still in force and ‘other matters and things affecting the validity of such letters patent’ (s. 34). In short, the register provided the information that competitors needed to avoid infringing the patent. The 1852 Act also introduced the use of a patent office seal, and the role of Patent Commissioners, comptrollers and examiners. These reforms indicate the “bureaucratisation” of the process and/or the “professionalisation” of those with a designated role in the system. It was no longer the province of the advisers to the Crown. There was a new category of employees of the State who had specific roles – roles that were exclusive to the patent system. This, along with the register of patents and the greater ability for competitors to understand the contents, and limits, of the patents that had been granted facilitated the acquisition, exchange, licensing and avoidance of these monopolies.

The introduction of the provisional specification in the 1852 Act also has “exchange” implications. Under the Act, patentees were able to file a provisional specification (s. 6) – though a complete specification could be filed instead (s. 9). The provisional process enabled them to file a description of the invention, ‘couched in general terms, but [which] must be strictly confined to the invention’.¹¹ Importantly, the process of filing a provisional specification gave the patentee ‘six months ... for the preparation and deposit of the complete specification’ a period that was ‘available for perfecting the invention and drawing such as a specification as will, while embracing the latest improvements, at the same time accord with the ... provisional specification’.¹² The filing of a provisional specification gave a ‘poor man ... the right to exhibit his invention without danger to a subsequent patent’¹³ – highlighting that this new provision gave an inventor the opportunity to test the market (for the product or the patents itself) with the idea before committing to the cost of a full patent application. Some patentees, therefore, may have filed a provisional specification because there was only a chance that his or her, “prospective”, invention will be marketable. In other words, the provisional specification allowed the inventor to place a “marker” around the invention at a cheaper price to stop others from claiming it as their own. This mechanism, therefore, allowed patentees to weigh the options and decide, for themselves, what was in their own

¹¹ J. Fraser, *Handy-Book of Patent and Copyright Law*, Sampson, Low, Son & Co, London, 1860, 14.

¹² A. Newton, *Patent Law and Practice*, Trubner & Co, London, 1879, 27.

¹³ J. Aston, *The Law of Patents, Designs and Trade Marks*, Waterlow Bros & Layton, London, 1883, 8.

best interests – was it better to risk others stealing the invention or to waste the money on a full specification when there were doubts about the invention’s efficacy or marketability?

The final point to be made about the nineteenth-century reforms is the minimal reference to the “public interest” in them. The focus was, very much, on the interests of the patentees. The sole context of public benefit was the educative function of patents. In the first half of the nineteenth-century, there were few claims that considered the public interest. One that did took an almost patronising line with the patented inventions being characterised as improving the ‘minds and morals’ of the population.¹⁴ In the latter half, the focus was the patent bargain (first articulated in the eighteenth century): a ‘man, to entitle himself to the benefit of a patent for a monopoly, must disclose his secret, and specify his invention in such a way that others may be taught by it to do the thing for which the patent is granted’.¹⁵ The use of the word “taught” is instructive. We can read the patent bargain with modern eyes, or we can read it with an awareness of the potentially condescending attitudes of the elites of the English judiciary. Regardless, the thrust of the reforms of that century was the benefit of patentees – and the purpose of the system should be understood in that context. More specifically, the reformed system allowed for the standardisation of patents as artefacts of value and made more efficient the processes for the exchange of those artefacts.

If the purpose now is, as the Commission claims, about the incentive role of patents, then there should be some connection between the changes to the patent law since the nineteenth century and the creation of this new purpose.¹⁶ Arguably, there are six post-nineteenth-century reforms that may have had such an impact. Three of these are “legal” and the others have a broader background. The first of the legal changes was the introduction of professional examiners that examined patent applications for novelty (in the nineteenth-century, they only examined for matters of form). The second legal change was the introduction of the test for “inventive step” in the middle of the century. This test was in addition to the test for novelty that was instituted in the nineteenth century. Both of these changes can be seen to have enhanced the value of the granted patents – in keeping with the nineteenth-century purpose of patents. A properly examined patent would be more valuable than a patent that had not been examined; and a patent that had passed both the novelty test

¹⁴ *Baxter’s Patent* (1849) 5 HPC 904, 905. The patent related to colour printing.

¹⁵ *R v Arkwright* (1785) 1 HPC 246, 247.

¹⁶ The following few paragraphs are the result of work that I am currently undertaking in preparation for a paper to be presented at a conference in Oxford in September this year.

and the more stringent inventive step test would be seen as more valuable than one that covered an invention that was only seen to be novel.

The third legal change is the expansion of the international system with the ratification of the TRIPS Agreement. Two things may be said about this Agreement. First, as it expressly builds on the nineteenth-century Paris Convention,¹⁷ it is likely that it would not radically change the underlying understanding of the system – without engaging with such a change. Indeed, the Agreement makes explicit reference to the purpose of the transfer of technology¹⁸ – which is not dissimilar to the exchange of patent rights. And second, the Paris Convention standardised the granting (and therefore valuing) and protection of patents across borders; thereby facilitating the exchange of patents. The TRIPS Agreement, therefore, can be seen to fulfil the same function.

The other three twentieth-century changes are not strictly legal. The first of these is the aforementioned shift in the literature from considering patents as a reward for particular behaviours (the nineteenth-century approach) to considering patents as incentives for similar behaviours.¹⁹ This shift accords with the change from classical to neo-classical economics, but in and of itself, it does not appear to impact on the underlying purpose of the system. The second non-legal change is connected to the first – and it is the rise of innovation as a distinct policy goal of government. According to Nelson, it was the use of the policy that facilitated the creation of the “patents as incentives” theory,²⁰ and further, the policy was not specific to the patent system. Both of these changes relate to discussions *of* the system and, therefore, do not necessarily impact on the manner in which the system operates (with, presumably, the onus being on those who assert such an impact to prove their case).

The final change is even less directly connected to the patent system. That change is the society-wide growth in concerns around the “public interest”. As stated above, the nineteenth-century courts cared little for the public interest; whereas, now, the public interest is more central to debates around the system. This may, in some ways, be the more radical shift in the patent system as it means that the system has to respond to many more interest

¹⁷ Article 2 of the TRIPS Agreement.

¹⁸ Article 7 of the TRIPS Agreement. This “Objectives” Article makes no reference to IP rights as offering incentives, it only speaks of the ‘promotion’ of innovation.

¹⁹ One perspective on the difference between “reward” and “incentive” focuses on who assumes the risks associated with seeking a patent. With the former, it is the state, as they provide a reward; with the latter, it is the patentee.

²⁰ ‘The Background for the Conference’ in Universities-National Bureau Committee for Economic Research, *The Rate and Direction of Inventive Activity: Economic and Social Factors*, Princeton University Press, Princeton, 1962.

groups than the nineteenth-century system had to. Other recent research into the public submissions to an inquiry into the granting of pharmaceutical patents found that there were four different articulations of the public interest in that space.²¹ Those articulations were: (1) the better health of the population (possible through greater access to better drugs); (2) more innovation generally (some submissions referred to a domestic pharmaceutical research industry); (3) profitable businesses – either Big Pharma or smaller pharmaceutical companies – for the health of the economy; and (4) effective legal and regulatory systems that meet the needs of the public. While one of them does relate to the standard “incentivisation” rationale, two of them – profitable businesses and efficient regulation – accord with the idea that the system is, in fact, aimed at the exchange of patents.

In short, none of the changes identified here appear to impact on the underlying purpose of the patent system as identified from the nineteenth-century cases. The Commission emphasises the value of evidence-driven reform. It was as late as 2012 when Arrow could ask the rhetorical question: ‘Is there no way of measuring the significant of the patent system as an incentive for invention?’²² He goes on to say that patents ‘appear very frequently in the literature on invention but mostly as a measure of inventive activity rather than for their incentive implications’.²³ In short, discussions of patents as incentives amount to assertions – the Commission’s blind acceptance of them seems to belie the claimed need for evidence.

“Social Value” of Patents

An additional major concern with the discussion of the Objects Clause is with the Commission’s understanding of the “social value” of patents. I realise that the Commission is following the lead of the OECD; however, the details of the indicators of social value in Appendix D show that the concept is significantly linked to “private value”. Leaving aside the Patent Value Index (as it is a combination of the other indicators), there are seven indicators of social value. With respect to “forward citations”, the Commission’s own words are that they are “considered to reflect/indicate” – hardly strong evidence. “Citations to non-patent literature” *may*, to use the Commission’s term, contain greater technological advances. The Commission’s reference to Harhoff, Sherer and Vopel (2003) speaks of private value only and yet the Commission asserts that citations to non-patent literature are an indicator of

²¹ C. Dent and Y. Haigh, ‘Oligopolist Speech: Public Interest, Private Interests and the Patent “Evergreening” Debate in Australia’ (under review).

²² K. Arrow, ‘The Economics of Inventive Activity over Fifty Years’ in J. Lerner and S. Stern (eds), *The Rate and Direction of Inventive Activity Revisited*, University of Chicago Press, Chicago, 2012, 47.

²³ *Ibid.*

social value. The “generality index” is based on forward citations and therefore any reliance on the index is weakened by the concerns over forward citations themselves. The “radicalness index” appears to be a rarely used concept²⁴ and, therefore, has not been subject to rigorous testing. “Patent Scope” is used for the first time in the OECD Report (though based on the work of Lerner) and also has not been subject to rigorous testing. Both “Patent Family Size” and “Years Patent in Force” are seen as indicators of private value as they relate to the decisions of the patentees or patent applicants. For the Commission to use these indicators for the purposes of considering social value seems to be an over-statement of their benefit.

The Commission also considers the work of Moir in that Appendix and acknowledges that her results relied on ‘judgments of the author’²⁵ (a limitation not acknowledged in the body of Draft Report). Further, it is not clear from Moir’s PhD that she had any specific expertise in the reading of business method patent claims and, so, it is not clear that her “translation” of the claims were accurate. To base any conclusions as to the social value of patents on this research with replicability issues would seem risky – even considering the two ‘compelling’ examples highlighted by the Commission. With respect to those two patents, any patents in a new area of technology will be “looser” than those in more established areas of technology – given the restricted area of the prior art base. Both examples given are more than ten years old; the Commission’s case would be stronger if it found more recent examples of problematic business method patents.

Draft Recommendation 8.1

The concern about Moir’s work is greater when considered in terms of the Commission’s Draft Recommendation (8.1) around software and business method patents. With respect to the evidence around business method patents that supports the Draft Recommendation, the Commission set aside the work of US academics, Allison and Tiller (2003), that had been published in a leading US technology law journal (which relied on citation counts that the Commission considers to be an effective methodology) and, instead, privileged the work of Moir. The latter work did not use the legal tests of patentability and, instead, gave the patents a more subjective reading. Beyond that, the Commission relied on anecdote, conjecture and

²⁴ A search for “radicalness index” and “patents” on Google Scholar offers only six publications that feature the terms.

²⁵ Draft Report, 535.

no demonstrations of harm that has resulted from the current settings – hardly the evidence-based policy that the Commission champions.²⁶

At a more theoretical level, it is strongly arguable that any exclusions to a regulatory system should be based on the system’s regulatory purposes.²⁷ That is, if there is an Objects Clause to the Act, there may be a degree of regulatory purity to having any exclusions from patentability relate directly to that clause. An example of this is the exclusion relating to theories – if the Objects Clause focuses on technology, then an exclusion relating to an abstract idea that is not encapsulated in a piece of technology would appear to be consistent with the Objects of the Act. From this perspective, any technology-specific exclusions are not likely to arise from the purposes of the Act – as such, the bar should be set high for any justification of such an exclusion.

Further, the observation of the patent system as having a focus on the exchange of patent rights (based on a minimum standard of value set by the examination process) facilitates the view that the market can/should decide what is valuable. Absent objective proof of problems, the market should be allowed to set the value of business method and software patents – if they’re not traded, then they’re not valuable and won’t be renewed.²⁸ Finally, any technology-specific limitations are likely to give rise to legal battles as applicants seek to be in the system instead of outside it. This may not be an efficient or effective way to regulate innovation or the exchange of rights to innovations.

To be clear, I have little invested in the classification of business method or software “inventions” as patentable or not. My comments are related to an interest in evidence-based reform and having an internally consistent system (from a regulatory perspective). It is not clear to be that Draft Recommendation 8.1 reflects either of these interests.

Institutional Arrangements for Patent System

This overall characterisation of the patent system also has implications for the institutional arrangements that govern it (**Chapter 16**). Patents can be seen as economic tools that are regulated by law – if the standard economic justification is adopted. If, however, the idea of

²⁶ Or to use the Commission’s own words – a ‘robust evidence base’: Draft Recommendation 2.1.

²⁷ Dent, ‘Should Genetic Inventions be Patentable?’, above n 2, 28-30.

²⁸ I acknowledge that patent applications or granted patents with no value may impact on innovation and the implementation of ideas that are close, or identical, to the subject matter of the application or patent. This is the same for all areas of technology. If there is specific evidence of problems unique to software and business method patents it should be introduced into the debate.

the patent *system* as regulating exchange is adopted, then it may be better to see patents as legal tools with economic implications. If patents are seen to be legal tools, then this may impact on which Federal organisation should have carriage of them. There are three caveats to the economic or legal tool distinction. First, it is not clear how one perspective could be proven right or wrong. Second, this analysis is only about patents – there are similarities with other IP rights, but no conclusions should be drawn about them from this analysis. Third, I acknowledge that my interpretation is competing against the bulk of economic writing in the area; however, until the Commission can demonstrate, with empirical evidence, that patents are best seen as economic tools, there may be a modicum of value in my railing against the dominant light.