

Submission to the Productivity Commission

**Intellectual Property Arrangements: Response to the
Issues Paper**

Chris Dent, School of Law, Murdoch University

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Contact Details

Dr Chris Dent,
Associate Professor, Murdoch University

The Productivity Commission has asked for comments on its Issues Paper for its reference on Australia’s “Intellectual Property Arrangements”. This Submission is based on work I have carried out over the past few years – including during my time at the Intellectual Property Research Institute of Australia. The views here, however, are my own and should not be considered to reflect those of my current, or previous, employers.

The Submission focuses on three of the Commission’s questions. Given the nature of my research, the bulk of my comments relate predominantly to the past and present of the patent system. Some may be transferable to the other intellectual property (IP) rights but they were not the target of analysis. The questions considered here relate to: (1) the goals of the patent system (this is not the result of a direct question but of an assumption of the Commission stated on p. 7); (2) the history of the system (the Commission asked about the setting of the ‘parameters’ of the system on p. 13); and (3) the possibility of the introduction of an economic criterion to the tests of patentability (p. 18).

1. Goals of the Patent System

The Commission asserts that the

intellectual property system [should provide] appropriate incentives for innovation, investment and the production of creative works while ensuring that it does not unreasonably impede further innovation, competition, investment and access to goods and services.¹

This assertion does not tell the whole story. There is, here, an elision between the (assumed) goals of the rights themselves and the goals of the overall IP system (of which the rights are only a part). Even with respect to the goals of the rights, it is not clear that the description is complete. Of course, the quote can be seen to reflect what has become the standard narrative for IP rights generally; however, that does not mean that it reflects the totality of the intended regulatory impact of the system. To take two obvious examples, it’s not clear how two chapters of the current *Patents Act 1990* (the “Patents Act”) directly relate to the providing incentives for innovation – with those chapters being Chapter 19 (The Register and official

¹ Issues Paper, 7, quoting the Commission’s own terms of reference.

documents) and Chapter 20 (Patent attorneys).² If they're part of the Act, they must be part of the system but neither seems to relate to the above quote.

On this point, the Commission may, or may not, be aware that IP Australia published, in 2013, a Consultation Paper that, in part, considered the introduction of an “objects clause” into the Patents Act.³ I mention both in case the Commission wishes to discuss that work with IP Australia and because, if contact has already been made with that organisation, some of what I will now say reproduces my submission to that Consultation process.

So, the system can be seen to be about the incentivisation of innovation. It can also be seen to be about the adjudication of rights and claims to innovation. Of course, the system could have multiple purposes. As the Advisory Council on Intellectual Property (ACIP) has noted, the system ‘serves three roles: to provide incentives to innovate; to encourage dissemination of knowledge; and to facilitate technology transfer, commercialisation and diffusion of knowledge’.⁴ ACIP did not prioritise these roles; however, historically, the system has focused on the benefits that arise from the introduction of new knowledge to a country,⁵ rather than focusing on the “incentivisation” of domestic entities to create new knowledge. Further, the fact that some industry sectors prefer protecting innovation via keeping it secret,⁶ and that the levels of patenting vary from sector-to-sector,⁷ suggests that not all new knowledge requires the patent system to bring it into being.

This, then, raises the question as to the most appropriate description of the purposes of the Patents Act or the system generally. It will be uncontroversial to highlight the importance of knowledge to the system (though a question may remain about whether it is knowledge in general, “technical” knowledge or “commercialisable” knowledge). It is less clear that the “incentive” role of patents should have equal prominence – given the fact that significant levels of innovation takes place without patents and that it has been shown, at least overseas,

² Admittedly, there are few, if any, disputes under these Chapters; nonetheless, if the Objects Clause purportedly covers the whole Act, then it should be relevant for all Chapters of the Act.

³ IP Australia undertook the consultation process as a result of previous inquiries into the patent system. There is nothing on the IP Australia website to indicate that any specific reforms were produced after IP Australia received submissions on the matter: http://www.ipaustralia.gov.au/about-us/public-consultations/Consultation_on_proposed_objects_clause_and_patentability_exclusion/.

⁴ Patentable Subject Matter Report, 24.

⁵ See, for example, C. Dent, ‘Patent Policy In Early Modern England: Jobs, Trade And Regulation’ (2006) 10 *Legal History* 71.

⁶ See, for example, Australian Bureau of Statistics, *8158.0 Innovation in Australian Business, 2008-09*, Table 1.

⁷ See, for example, the discussion in B. Hall and D. Harhoff, *Recent Research on the Economics of Patents*, NBER Working Paper 17773, 2012.

that patents are sought for multiple purposes.⁸ It may be sufficient to simply acknowledge that patents may offer an incentive without assuming that, in every case, inventions only come into being as a result of the “carrot” of patent protection.

The acknowledgement that patents are not necessary for innovation then opens up the possibility that the system may have another economic purpose. In other words, the system needs a purpose regardless of why patentees sought their patents, or whether the inventions would have been created but for the patents. In this respect, I would argue that the Act regulates, or at least facilitates, the exchange of inventions and innovations that have been protected by patent rights. That is, the Act:

- Authorises the transfer of patent rights (s. 13);
- Sets out the rules by which the owners of the rights may seek redress when their inventions have been used without their permission (the infringement provisions as well as the provisions giving specific courts jurisdiction in patent matters);
- Provides for contractual conditions relating to the exchange of patent rights that are void (Chapter 14);
- Establishes the Register of patents that allows for the accountability of people claiming patent rights in an invention (Chapter 19); and,
- Details when inventions may be used without the permission of the patentee (provisions relating to compulsory licences, Crown use and the various infringement exemptions).

Further, the Act may be understood to “allocate” three levels of value to an innovation – an invention may be good enough to qualify for a standard patent, an innovation may be good enough to qualify for an innovation patent (but not a standard patent) or the development may not be good enough to qualify for either. Of course, the final of the three levels of value applies both to those developments that have been the subject of an unsuccessful application and those that were not detailed in such an application (and there could be other reasons for no such application to be filed that bear no relation to the “quality” of the development). Regardless, a person or company seeking to purchase the rights to use a development may

⁸ Reasons, beyond the protection of innovation, include to create ‘retaliatory power against competitors’; create ‘better possibilities of selling licences’; provide ‘motivation for employees to invent’; provide a ‘measure of R & D productivity’; and to improve the ‘corporate image’: O. Granstrand, *The Economics and Management of Intellectual Property: Towards Intellectual Capitalism*, 1999, 78. Other reasons that have been cited include to ‘obtain financing and boost market valuation’; to use ‘as signalling mechanisms’; and to ‘deter others from suing’: M. Lemley and C. Shapiro, ‘Probabilistic Patents’ (2005) 19 *Journal of Economic Perspectives* 75, 81.

base their decision, in part, on the value attributed to the development by the patent system – and not on whether the patent right, in fact, incentivised the development.

In short, the patent system should not be seen narrowly as simply providing an economic incentive for invention. It is designed to regulate the behaviour of those who engage with the development of commercialisable innovations and to regulate the behaviour of those in competition with those who develop such innovations; as well as to regulate the behaviour of others (including patent attorneys) – with all this regulation having legal, as well as economic, value. Even if the focus is assumed to be on matters economic, it may be an open question as to whether the primary economic purpose is to incentivise innovation or to regulate the exchange of innovation (however it was incentivised). Again, the system is much more than the patent right itself – and any assessment of the system that focuses on the right, to the exclusion of other aspects, risks missing the woods for the trees.

2. The History of the Patent System

The Commission seeks ‘submissions about how the parameters of the IP system came to be set’.⁹ As the system can be traced back over hundreds of years, this is not a simple issue. Even if the question is restricted to the patent system, some of the parameters were set by Executive action, some were set through legislation, some were set as a result of judicial decisions and some were simply the product of industry practice. There is not the space here to provide a complete history; however, I will refer to what I consider to be the key points.

There is no doubt that the current system extends back into the sixteenth century.¹⁰ The only major aspect of the system that persists from that time is the fact that an invention is protected by a patent – an authorisation from the Crown for the monopoly. This, of course, came about through the actions of the Executive; however, the approach was validated by Parliament with the passing of the *Statute of Monopolies 1624*.¹¹ The policy justification for the system was not the facilitation of human ingenuity – instead they encouraged the importation of technology from Europe in order to promote employment, international trade and the better regulation of industries.¹² The lack of emphasis on innovation for its own sake

⁹ Issues Paper, 13.

¹⁰ Even the recent High Court decision in *D’Arcy v Myriad Genetics* felt the need to revisit the origins of the system. See, for example, the discussion at [2015] HCA 35 [26]

¹¹ For more detail of the passing of this Act, see C. Dent, “‘Generally Inconvenient’”: The 1624 *Statute of Monopolies* as Political Compromise’ (2009) 33 *Melbourne University Law Review* 415.

¹² See further, Dent, above n 5.

is explained, to a significant extent, by the fact that the system was put in place prior to the Enlightenment.¹³

The basis of patent applications – the specification – also came into being as a result of Executive action. It is acknowledged that there is some doubt about when the need for the document developed. One commentator, for example, considers that the provision of a specification by the prospective patentee became a ‘standard practice after 1734’;¹⁴ this does not mean that it was required for all applications. For another, it was not until the decision of *Liardet v Johnson* that the ‘specification would be officially enshrined by the law courts as a requirement for a valid patent’.¹⁵ It is also not clear, now, why the requirement of filing a specification was introduced. Hulme, for example, considered that it was in the patentee’s interests.¹⁶ More recent research suggests that the purpose of the document was to differentiate ‘between superficially similar inventions’, thereby assisting in the ‘shift [of] responsibility from the law officers to the courts’.¹⁷ What is clear, however, that it was the law officers in the Executive that required the patent applicants to complete the document – as there was no legislation dictating it, nor were there any court decisions making them obligatory.

In terms of developments that stemmed from industry practice, two are worth highlighting – with the two likely to be linked. First, the profession of patent attorneys developed. The complexity, and the developing requirements, of the specification meant that, in the nineteenth century, patentees began seeking advice as to their production. In the late eighteenth century, the inventors themselves were producing these documents despite the fact that a court would be the forum for testing its sufficiency. In the early part of the nineteenth century, however, there were a number of individuals, those with technical skills, who terms themselves ‘specifiers’ and drafted specifications for other inventors. The use of a (relatively small) profession also would have had the effect of standardising the form of patent applications. The rise of the agents, with their specific expertise, also would freed up the

¹³ For an expansion of this point, see 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, 18-21.

¹⁴ C. MacLeod, *Inventing the Industrial Revolution: The English Patent System, 1660-1800*, Cambridge University Press, Cambridge, 2002, 49.

¹⁵ A. Mossoff, ‘Rethinking the Development of Patents: An Intellectual History 1550-1800’ (2001) 52 *Hastings Law Journal* 1255, 1287.

¹⁶ E. Hulme, ‘On the Consideration of the Patent Grant, Past and Present’ (1897) 13 *Law Quarterly Review* 313.

¹⁷ MacLeod, above n 14, 51.

patentees to focus on their area of knowledge – the development, and commercialisation, of new machines that would further their individual profit margins.¹⁸

Second, also in the nineteenth century, the practices of drafting specifications changed – again not as a result of the external pressure. Specifications were aimed at describing the invention generally; however, in that century, patentees began to include a specific section of the specification that described the novelty of the invention. This section came to be known as the “claims” of the patent.¹⁹ It is true that the *Patents Act 1883* required that patent applications contain a set of claims; however, it is important to note that applicants were including them before the passing of that Act.

Key aspects of the system also came from the courts. The first example here is that it was the courts that explicitly linked the granting of the monopoly right to the provision of the knowledge contained in the patent documents. This has come to be known as the “patent bargain” – ‘man, to entitle himself to the benefit of a patent for a monopoly, must disclose his secret’.²⁰ Before that, the specification was submitted to give the bureaucracy some idea that the invention was new and differentiable from other inventions, but it was not seen as an “exchange”.

The second example is that it was the courts that first considered the limits of patentability. It is true that section 6 of the 1624 Statute said patents could only be granted for “matters of new manufacture” – but this requirement was not explained or justified by Parliament. Of course, the Statute was passed before the Enlightenment and so the understanding of “invention” was limited to machines and devices.²¹ In the eighteenth century, however, the courts did have to consider the issue more broadly. In the middle of that century, it was held that the ‘patent is for glasses completely formed, not for mere principles’.²² This wasn’t considering whether principles themselves were patentable, but was simply describing the invention in dispute (it is, however, the first time a patent judge refers to principles when assessing a patent dispute). A later judge does consider the patentability of principles but

¹⁸ Much of the information about the reforms of the nineteenth century come from an article of mine that is currently under review with leading English law journals. Copies of the article could be provided, on a confidential basis, on request.

¹⁹ For a more complete description of the history of patent claims, see D. Brennan, ‘The Evolution of English Patent Claims as Property Definers’ [2005] *Intellectual Property Quarterly* 361.

²⁰ *R v Arkwright* (1785) 1 WPC 64, 66.

²¹ An “idea”, a “new idea”, as a separate, knowable, construct for analysis is a product of the Enlightenment — to see principles as objectively patentable (or not) requires such a conception of the intangible: The different conceptualisation of ideas was one of Descartes’ key contributions: B. Russell, *History of Western Philosophy*, 2nd ed., George Allen & Unwin, London, 1961, 549ff.

²² *Dollond v Champneys* (1758) 1 CPC 28, 30.

does not appear certain: ‘If it were necessary to consider whether or not mere abstract principles are the subject of a patent, I should feel great difficulty in deciding that they are’.²³ It was only in 1819, in *King v Wheeler*, that it was stated clearly that ‘no merely philosophical or abstract principle can answer to the word manufacture’.²⁴ Regardless of when, precisely, the courts decided that scientific principles were not patentable, it was the courts that first articulated the rule.

The final judge-made parameter is one that has become central to the operation of the system and this is the “person skilled in the art”. Patent practice required the use of a specification, but as it stemmed from the Executive, there was no guidance for the courts as to how they should judge the sufficiency of the specification. The courts, on their own initiative, used an “imagined” audience for that task. In the late eighteenth century, it was ‘artists’ who were to read the document.²⁵ In 1800, the specification had to ‘enable an ordinary tradesman to put the invention in practice’.²⁶ *Bloxam v Elsee* referred to a ‘skilful mechanic’,²⁷ and, as a final example, *Foxwell v Bostock* refers to a ‘workman of ordinary skill and information on the subject’.²⁸ That said, not all judgments of the time assumed a level of expertise on the part of the addressee. In *Newbery v James*, for example, it was stated that the ‘specification should be so clear as to enable all the world to use the invention’.²⁹ If the treatises of the time are examined, then most suggested that expertise was expected. Carpmael, for example, said that the specification should ‘be so clear that a workman, or other qualified person, shall be able to realize the invention’.³⁰ Hindmarsh, however, noted that the specification was aimed at the general public and should be ‘intelligible ... to every person’.³¹ Finally, it was Terrell who first used the phrase: the ‘person skilled in the art’ when describing the test for assessing the sufficiency of the specification.³² This is the articulation that persists today. A key point to be made here is that it became, over the course of the nineteenth century, the skilled worker who was to read the document. 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

²³ *Hornblower v Boulton* (1799) 8 TR 95, 106.

²⁴ 2 B & Ald 345, 350; 106 ER 392, 394-5.

²⁵ *Boulton v Bull* (1795) 2 H Bl 463, 478.

²⁶ *Rowntree’s Case* (1800) 1 HPC 421, 421.

²⁷ *Bloxam v Elsee* (1825) 1 Car & P 558, 564.

²⁸ *Foxwell v Bostock* (1864) 4 De G J & S 298, 310.

²⁹ *Newbery v James* (1817) 2 Mer 446, 451.

³⁰ W. Carpmael, *The Law of Patents for Inventions*, 3rd ed., Simpkin, Marshall: London, 1842, 57.

³¹ W. Hindmarsh, *A Treatise on the Law Relating to Patent Privileges for the Sole Use of Inventions*, Stevens, Norton & Benning, London, 1846, 162.

³² T. Terrell, *The Law and Practice relating to Letters Patent for Invention*, H. Sweet, London, 1884, 65.

would know that it was not workable and, if it was not worked, then the invention had no value.

The only instigator of reform that remains to be discussed is Parliament. Despite being left till last here, that institution has had a significant impact on the system. Of course, some of what it did was to formalise the changes brought about by others (such as the use of claims and specifications). Other reforms were more “original”.³³ These included the establishment of a stand-alone Patent Office, the introduction of examiners,³⁴ the introduction of the test for “inventive step” as well as legislating for procedures for the protection of interests of patentees and their competitors.

In terms of these procedures, the *Patents Act 1852* created the opposition procedure (a procedure that still is available today). Oppositions allowed the competitor of a patent applicant to challenge an application before it was granted – again, this was at a time when the Office did not examine applications for novelty.³⁵ Oppositions could be seen as an effective tool as it was the competitors who had the detailed knowledge of the area of invention that was sufficient to challenge the patentability of the invention contained in the opposed application. This, therefore, enabled the competitor to protect her or his invention (more conveniently and more cheaply than the previous caveat system), while also facilitating the quality of any patent granted after the opposition proceeding had been completed.

Also in the nineteenth century, compulsory licences were introduced. These days, these licences are seen as a mechanism to provide patented inventions to those without access to them (as long as the requirements of the Patents Act are complied with). One of the key grounds for the introduction of the licences was for the granting of a licence was where ‘any person is prevented from working or using to the best advantage an invention of which he is possessed’³⁶ – this means a compulsory licence was available where one person needed the invention of another in order to work her or his own patent. As such, these licences were aimed at enabling innovative people to profit from their inventions, even where it required the use of an invention of a competitor.

³³ Many of the nineteenth-century reforms were instituted by Parliament after extensive consultation with manufacturers and experts via Parliamentary inquiries.

³⁴ It should be pointed out that the examiners appointed to the Office in the middle of the 19th century only looked at the procedural aspects of the applications; it wasn’t until the *Patents Act 1902* that examiners were given the power to check for novelty.

³⁵ It may be noted that the opposition procedure is still in place today, despite the Office now examining for novelty and inventive step.

³⁶ *Patents, Designs and Trademarks Act 1883* s. 22(c).

Finally, the organisation of patent grants, in the form of a register, was one of the more significant legislated reforms of the nineteenth century. The reforms of that century, in fact, introduced registers – one for patents and one for patentees. The value of a register, as a technology of organising knowledge, may not be appreciated by those who operate in the system;³⁷ however, the patent register provided a central repository of all patent information. 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’.³⁸ In short, the register provided the information that competitors needed to avoid infringing the patent. Importantly too, it provided all the information that another business owner needed to know in order to consider buying, or licensing, the right from the patentee. While it was not a searchable database back in the nineteenth century, the register was a key tool, created through legislation, which facilitated the avoidance, and exchange, of patent rights.

This, of course, is only a superficial rendering of the history of the patent system. In summary, most of the modern parameters of the patent system were in place by the end of the nineteenth century;³⁹ and the settings complied with the teachings of classical economics (and, therefore, predate neo-classical analysis). As I have done a significant amount of work into the patent system’s past, and to a lesser extent the past of other IP rights, I am happy to provide the Commission with further assistance, or information, on request.

3. An Economic Criterion in the Tests of Patentability

The final question that I will respond to here is a little more focused than the first two. The Commission asks ‘Would introducing economic criteria for patentability ... substantially improve the efficiency and effectiveness of the patent system?’⁴⁰ I do not think that such an introduction would be beneficial; if anything, I would consider it to be particularly problematic. It must be noted that no guidance was provided by the Commission as to what the economic criteria could be (and little evidence that an additional test is needed), and therefore this part of my submission is heavy on conjecture.

³⁷ For a discussion of the history of the use of registers across the IP system, see C. Dent, ‘Registers of Artefacts of Creation – from the Late Medieval Period to the 19th Century’ (2014) 3 *Laws* 239; doi:10.3390/laws3020239.

³⁸ *Patents Act 1852* s. 34.

³⁹ Key exceptions to this are the test for “inventive step” and the technical requirements around the content of the specifications.

⁴⁰ Issues Paper, 18.

One obvious concern with any new economic criterion relates to the expertise necessary to assess applications in light of the criterion. Patent examiners are currently trained in the detail of patent law after gaining a position with IP Australia. In many, if not most, cases, examiners have a doctorate in their area of technical expertise. This level of qualification is deemed to be necessary in order for them to fully understand the patent applications and the scientific literature that is often used when assessing whether an application meets the current tests of “novelty” and “inventive step”. It may be asking them too much to get them to assess economic criteria too.

An alternative would be to have another panel of “economics” examiners. Their precise role would depend on the detail of any economics criteria; however, the fact that there is another round of examination, separate to the legal examination, would cause other issues. First, there would be decision as to whether the economic, or the legal, aspects were examined first (with the answer perhaps implying one is more important than the other). Second, two rounds of examination would add delay to the process – and the pendency of applications is one of the major complaints that users have about the system. Of course, the two examination processes could run at the same time – but that raises the possibility of one examiner requiring one set of amendments and another examiner requiring another (unless the economics examiner can only say “yes” or “no” to the application – without any opportunity for amendments).

Regardless of the issue of examination, the next concern relates to the fact that it is another site for potential dispute – assuming that the economics test is a ground of challenge.⁴¹ A dispute over the economic benefits of an invention could be between the inventor and IP Australia (where the “economics” examiner failed to pass the application in part or in full) or it could be between the inventor and a competitor or an interested third party via (the current) opposition proceedings. Leaving aside the issue of how these disputes would delay the grant of a patent, any of these additional disputes would add costs to the prosecution of the patent application. Depending on the nature of test, and therefore on the nature of the alleged failing of the application, expert witnesses may need to be called. There would also be the costs associated with the taking of advice (whether from current patent attorneys or a new breed of “economic” attorneys) on the dispute. The benefits of any economic test would have to outweigh these additional burdens.

⁴¹ If it is not a ground for challenge, then the test would risk being an “empty” one that is used rarely by IP Australia.

There would also be an issue with phrasing the test. Would a patent only be available where the inventor had invested in the development of the invention? This articulation would be based on the understanding that the patent, as a carrot, is there to tempt investment, and therefore, if there was no investment, then no patent should be granted. This raises questions as to how much investment is necessary to warrant a patent and what proof would be required to demonstrate it. It could also be that patents would only be available to inventions in areas of significant economic endeavour – so that patents for “peanut butter and jelly sandwiches” would not pass examination. What would count as an area of significant economic endeavour? If an inventor files for an application for a ground-breaking invention – one that was so far ahead of its time that the invention created its own area of economic endeavour – would it be rejected by examiners because there was no such area at the time of examination? Finally, it is possible that an application could be filed that was the subject of investment and was in an area of significant economic endeavour, but that is never likely to be commercialized. An example here is the regular new stories about aircraft designers packing more seats into commercial aircraft – with these designs either being impractical (in terms of accessing the aisle) or unlikely to appeal to passengers – would an economics examiner be asked to judge on the potential for the actual commercialisation of the invention?

A further possibility is that an economic test could be applied in terms of the duration of the patent.⁴² So, a patent could be limited, not by the current 20 year maximum but by the amount of profit that the patentee makes. This may be more feasible than having the current batch of examiners make decisions around economics; however, there would be other issues such as how much profit would be enough and what deductions would be allowed when assessing the level of profit made. It should also be noted that this was the position under a piece of legislation from 1835⁴³ – one that was removed by later nineteenth-century reforms.

In short, I do not think that the inclusion of any economic tests would improve the efficiency or effectiveness of the patent system. More specific proposals from the Commission about the inclusion of any tests could, of course, sway my assessment of the possibility. However, if the idea for including economic criteria is based on the claim that patents are only economic tools then, hopefully, my discussion above (about the goals of the system) will encourage the Commission to think that the system is more than just a plaything for economists.

⁴² This connection is implied by the Commission’s decision to ask about economic criteria and the issue of duration in the same question.

⁴³ *Lord Brougham’s Act 1835*.