



Submission to the Productivity Commission Draft Report on Intellectual Property Arrangements

Introduction

The Department of Industry, Innovation and Science ('the department') welcomes the opportunity to contribute to the Productivity Commission's ("the Commission") *Inquiry into Intellectual Property Arrangements*.

The inquiry provides a valuable opportunity to consider Australia's intellectual property (IP) arrangements from a broad economic view point. In particular, it provides an opportunity to examine whether the current system is working as effectively and efficiently as it could be in terms of balancing incentives for innovators, investors and creators, with the economic and social welfare of consumers. The department acknowledges that striking the right balance across the IP system remains an ongoing challenge and that periodic review of the policy settings is a valuable exercise.

This submission focuses on areas where the department has a particular interest. We note that IP Australia has also provided a submission, which the department seeks to complement from the department's broader responsibilities across the industry, innovation and science portfolio. It should also be noted that as of September 2015 the department has policy responsibility for the digital economy, and so maintains a strong interest in copyright issues specific to software and digital media.

The department

The department's vision is to enable growth and productivity for globally competitive industries. To help realise this vision, the department has four key objectives: supporting science and commercialisation, growing business investment and improving business capability, streamlining regulation and building a high performance organisation.¹

Innovation-led growth will be the key to unlocking Australia's potential and maintaining our place as one of the world's leading economies into the future. The department and its portfolio agencies work together to provide the enabling environment and infrastructure to support industry, innovation and science, including: administering the IP rights systems related to patents, trademarks, designs and plant breeder's rights; investing in science, research and digital capabilities; promoting collaboration between scientists, researchers and businesses; delivering targeted programmes to build innovation and commercialisation capacity across the economy; and providing policy advice to the Australian Government on these issues.²

Given the department's policy responsibility for industry, innovation and science, it is uniquely placed to interact with stakeholders across the full breadth of the economy. The department has considerable experience and expertise in balancing the needs of these stakeholders, which range from multinational companies through to start-up innovators, scientists and consumers.

IP is a central policy lever available to the Government to facilitate innovation. However, it is important to recognise that IP does not operate in isolation from other innovation policy mechanisms. For example, stakeholders have identified that IP management can be a barrier to collaboration and

commercialisation. The department is uniquely placed to recognise and address such problems. There are a range of other government portfolios, policies and programmes that intersect with IP policy and the department is increasing its capacity and the avenues for collaboration among interested departments (as discussed further below).

Australia's Innovation System

Australia's innovation system has some particular strengths that are well regarded internationally. For example the 2015 Global Innovation Index (GII) ranked Australia 17th overall (out of 141 countries) with particular strengths in innovation infrastructure (ranked 4th), ICT (ranked 7th), innovation inputs (ranked 10th), and creative outputs (ranked 7th).³

The Australian Innovation System Report 2015 data shows an increase in Australian businesses undertaking innovative activities: innovation-active small-medium enterprises (SMEs) increased from 36.7% in 2005 to 48.1% in 2013 (ranked 5th out of 30 OECD countries) and innovation-active large firms increased from 66.2% to 79.5% (ranked 18th out of 30 OECD countries). Innovation-active businesses tend to be more profitable, competitive and resilient than other businesses and make significant contributions to improving productivity and creating jobs.⁴

The data suggests Australia is not as strong in other measures. In research and development spending, Australia is below the OECD average. For example, our levels of investment in R&D fall just inside the top half of OECD countries, with Australia ranking 14th out of 34 on Gross Expenditure on Research and Development (GERD) and 15th out of 33 on Business Expenditure on Research and Development (BERD).

Some areas where the Australian innovation system can improve have been identified. For example, Australia performs poorly in the translation of research into commercial outcomes and business to research collaboration.⁵ The department is actively implementing programmes and policies that aim to improve Australia's performance, particularly under the National Innovation and Science Agenda.

Australia's IP system plays an important role in the innovation system – from providing the initial incentive to innovate through to enabling collaboration. The IP system also facilitates the dissemination of knowledge and follow-on innovation, allowing new technologies and creative content to become available in the Australian economy.

Australia's IP system ranks highly in a range of international comparisons, including the Taylor Wessing 'Global Intellectual Property Index' (ranked 8th out of 43 jurisdictions),⁶ US Chamber of Commerce 'Global Intellectual Property Centre International IP Index' (ranked 8th out of 38 countries)⁷ and the Property Rights Alliance 'IP Rights Index' (ranked 13th out of 129 countries).⁸ While this demonstrates a strong IP system in Australia, there is still room for improvement.

Overarching Comments

Australia's economy and its innovation ecosystem are transforming. This is partly due to the resources investment boom ending, but it also reflects the transformation of traditional manufacturing industries and production operations by information and communications technology ('Industry 4.0'). If the Australian economy is to remain globally competitive, it is imperative that Australian industries keep pace with global changes as we continue to shift towards a knowledge-intensive economy.⁹

The IP rights system, by effectively incentivising investment in knowledge creation and diffusion, will play an important role in determining the success of this transition. A wide range of data sources, including the OECD,¹⁰ the World Intellectual Property Organization (WIPO),¹¹ and IP Australia¹² note that IP's role in the economy is evolving and IP is an important issue in all industry sectors.

In this context, the department considers the policy direction for reforms should focus on an IP system optimised to promote future opportunities for economic growth and job creation. At the same time, it should be mindful of the need to balance the broader social requirement for dissemination of

knowledge and competitive access to new technology and creative content. The department also notes that its research highlights the important role that high growth micro start-ups play in job creation in Australia.¹³

The need for this focus is highlighted by the changing pattern of IP protection sought in Australia. In the decade to 2014, patent protection was dominated by computer technology and medical technologies. This was a distinct change from the decade to 1990, when civil engineering and machinery were the predominant fields. The patent data also highlights the expansion of Australian industry globally, with an increasing number of Australians seeking protection abroad and an increasing number of foreigners seeking patent protection in Australia. This pattern is replicated across trademark and industrial design data.¹⁴

The department encourages the Commission to consider the make-up of the Australian innovation ecosystem. Australia's economy has a high proportion of start-ups and SMEs and these businesses can be agile, highly creative and innovative.¹⁵ The Commission should consider whether the IP system is meeting their needs and if there are opportunities to increase SME engagement with the IP system, overcoming information failures, and aiding collaboration, commercialisation, follow-on innovation and economic growth.

We would also encourage the Commission to consider or model the impacts that some of its draft recommendations may have on SMEs. There are several draft recommendations that are likely to impact SMEs, including the proposed abolition of the innovation patent (Chapter 7) and the proposed changes to patent fee structures (Chapter 6). We are pleased to see that the Commission has considered issues faced by SMEs in enforcing their IP rights (Chapter 18). IP Australia's submission noted that the availability of additional information products and alternative dispute resolution services could be of particular use to SMEs.

The department supports evidence-based policy development and so agrees with the intent of draft recommendation 2.1. There is a vast amount of administrative data available on the registered IP rights.¹⁶ However, we note the difficulty in measuring additionality afforded by IP rights. To encourage collection of data, or interpretation of data that has been collected for a different purpose, the Commission should identify gaps that it has encountered in compiling the draft report. This would provide guidance relating to data gathering and analysis that could be undertaken by the department, other agencies, academia and relevant stakeholders.

The department notes that a strong theme in the draft report is that Australia is a net importer of IP.¹⁷ While this is true, and unlikely to change in the near future, Australia needs to ensure that its ability to undertake the transition to a knowledge-based economy is not constrained by an IP framework that fails to recognise the importance of a strong foundation for knowledge creation and new-to-the-world innovation.

The department notes that there is both an international legal framework (negotiated through the World Trade Organization, WIPO and various trade agreements) and an international marketplace within which Australia's IP system operates. We would encourage the Commission to further examine the international framework and include more examples of international best practice in IP policy and administration. The Commission could then recommend how these examples might be adapted to suit Australia's current needs and future aspirations.

Specific responses to chapters

Chapter 6 – Patent system fundamentals

The Commission's draft report has recommended several reforms to the patent system to help it better target socially valuable and additional inventions.

As noted in the introduction, the department agrees with the Commission that any changes to the patent system should be based on evidence. We would encourage the Commission to conduct further analysis before coming to a final recommendation on some of the matters raised, as suggested below.

Inventive step

The Commission considers that the current interpretation of the inventive step requirement appears to set the bar too low for granting a patent. The inventive step test is a key test for achieving the balance required between incentivising innovation and the broader social benefit of the patents system: patents should not be granted for obvious inventions. The Commission recommends that the Australian inventive step be raised to align with the European legislation. We note that the *Intellectual Property Laws Amendment (Raising the Bar) Act 2012* raised the inventive step threshold and sought to practically align with the European standard, i.e., that the Commissioner should consider an invention obvious with regard to the prior art in light of what the person skilled in the art would (as opposed to could) have done.

These changes only came into effect in April 2013. Few applications have been examined under the new provisions and none have yet been tested by the courts. A number of stakeholder submissions highlight this fact and suggest that changes at this point in time would add to uncertainty and increase regulatory burden without the benefit of evidence that the tests are not operating as intended by Parliament. The department holds similar concerns. Should this recommendation progress further, the department would encourage the Commission to outline a workable transition path to reduce impacts on industry.

Objects clause

The introduction of the objects clause has previously been agreed to by the Government¹⁸ and consulted on by IP Australia.¹⁹ The implementation and precise wording of an objects clause will need to be carefully considered. The department notes that the Commission's use of the phrase 'socially valuable innovations' has been the focus of some stakeholder concerns, due to a lack of clarity in its interpretation and potential application.

The department notes that mandating that the Commissioner of Patents must have regard to an objects clause which includes the 'socially valuable' and 'would not have otherwise occurred' concepts will be difficult to apply in the course of routine patent examination. Such a clause could introduce subjective tests into the tests for eligibility of a patent, as opposed to a test of facts against legislation. This would also place undue onus on an applicant to prove that it meets an inherently subjective criteria, and likely lead to increased litigation before the courts.

Exemption from infringement for experimental activities

The department's capacity to support and grow a vibrant innovation ecosystem in Australia is dependent upon having an IP rights system in place that incentivises both knowledge creation and diffusion activities, and that balances the benefits accruing to innovators versus the broader community. An IP system that encourages innovation, while providing clear protection to research and experimental activities is required to maximise the potential for research in Australia.

As such, consideration ought to be given to whether the current exemption from infringement of experimental activities provisions under the Patents Act gives our researchers sufficiently flexibility to use patented tools to develop new products and ways of tackling the big societal challenges of our time without fear of litigation.

We note there appears to be some confusion in the research sector about the intent and operation of the law around this matter.²⁰ The department would welcome the Commission's views on the development of targeted information products around this issue. We also note that IP Australia is undertaking an evaluation of the Raising the Bar reforms, including the experimental use exemption.

Patent renewal and claim fees

As noted in our overarching comments, fee changes may have greater impact on start-ups and SMEs than larger businesses. We support the Commission's statement that any efforts to make greater use of patent fees should follow a careful analysis of the effects on different market participants. The department notes that IP Australia has undertaken a fee review, which is expected to be published on its web site in August.

Chapter 7 - The innovation patent system

The Commission's evaluation of the Innovation Patent System (IPS) incorporates findings and analysis from a number of previous reviews.²¹ These reviews found that the IPS has not met its original policy objective of stimulating innovation in Australian SMEs. Research conducted by IP Australia in 2015 showed that while 94% of IPS applications are made by private inventors or SMEs, only 0.4% of SMEs and private inventors have become moderate users of the innovation patent system²². The average SME or private inventor only files once (74%), does not receive any enforceable right (83%), and lets their patent expire early, presumably because they see its value at less than the \$110-\$220 cost of renewal (78%).

In addition, the low threshold for innovative step could act to stifle the diffusion and adoption of technologies at the firm level. It is widely recognised that the current threshold for innovative step is too low resulting in "obvious" innovations being certified following examination. This gives its owner all of the rights of a standard patent apart from the shorter term.

In light of these failings of the current IPS, the Commission's draft report investigates two possibilities – reforming the IPS, or abolishing it. Possible reforms to the IPS have also been raised previously, but there has been no agreement as to whether any of the suggestions would have a positive impact on innovation in Australia. Based on an analysis of the benefits of both options, the Commission's draft recommendation supports the abolition of the IPS.

Stakeholder submissions to the draft report identify similar themes to the previous consultations²³, with some support for amendments to the IPS (although no consensus on what form these amendments might take), and some support for its abolition. Most agree that the IPS is not effective in its current form.

The department considers that granting patents for obvious inventions risks undermining the integrity of Australia's IP rights system. This problem could potentially be addressed by instituting mandatory examination of innovation patents and raising the threshold for innovative step in line with that of inventive step (as foreshadowed by the Commission). However, the net result of any such reform would be to create a second-tier system that differs immaterially from the standard patent regime, with the exception of patent term. This is not a desirable outcome. If the IPS is retained, it should be reformed to address the deficiencies identified by the Commission and ACIP.

Should the Government accept a recommendation to abolish the IPS, consideration should still be given as to whether this would introduce any 'gaps' that may not be covered by existing incentives to encourage innovation in small and medium enterprises.²⁴ We encourage further consideration of whether other ways to support patent protection for SMEs are needed and if so, what these might look like.

Chapter 8 – Business methods and software patents

The department recognises that patents over business methods and software are prominent issues globally, and welcomes the Commission investigating this area. However, the issues identified by the Commission may not warrant a blanket exclusion and could be addressed through different approaches.

The department suggests the Commission disaggregate concerns relating to the patenting of business methods from those relating to the patenting of software. An analysis of the impact of the suggested exclusion on investment in the development and commercialisation of software in Australia is recommended, noting that stakeholders have presented examples of using patents to protect significant investments in software innovations.²⁵

Definition of business methods and software

The department notes that the Commission's analysis of business methods and software relies on what appears to be a conflated definition. As stated by the Commission, business methods have been defined as a method of operating any aspect of an economic enterprise, including 'trading, transacting, finance, resource management, marketing and customer service'.²⁶ Much of the Commission's analysis appears to be based on the role of software in the implementation of business methods. However, software pervades a much wider range of technological advances. The department is concerned that grouping 'software' with 'business methods' as a single category where patenting would not be allowed is a 'blunt tool' that may have significant unintended consequences.

The department also notes that much of the evidence presented by the Commission is 10 – 15 years old (prior to the advent of mobile/on-line/digital disruption beginning in the late 2000s). It is unclear whether these references reflect current and prospective concerns. Further analysis of more current and future looking research is needed.

If the Commission's draft recommendation were to be further pursued, the department would like to see clearer and distinct definitions of business methods and of software, and evidence and analysis applied to each. In particular, a detailed analysis of software, independent of the 'business methods' banner would be valuable.

Adaptability of Australia's Patent System

Australia's patent system has traditionally been technology neutral. The Commission's draft report itself highlights the importance of a technology neutral IP system in adapting to new technologies and developments. The patent system achieves this through the combination of a range of tests (novelty, inventive step, patentable subject matter/manner of manufacture) that are robust and technology neutral.

The department is concerned that the exclusion of any particular technology will diminish that adaptability into the future. Australia's patent system needs to remain flexible and adaptable to continue to provide incentives to innovate in as yet unknown areas of technological advance. This is a key concern in the area of software, which is rapidly pervading and potentially disrupting a diverse range of industries. Examples include the Internet of Things,²⁷ data analytics, cloud computing, automation, robotics, and blockchains.

Alternative forms of intellectual property protection

The draft report discusses the use of other forms of IP such as copyright or trademarks to protect business method and software innovations. It concludes that alternative protections would give rise to innovation in the absence of patent protection.

The department understands that copyright for software is an area of growing concern and uncertainty internationally. In its simplest terms, copyright protects the actual lines of code but not the

functionality of a program (which may overcome a technical problem). Innovation and R&D can occur in either aspect.

The department welcomes a more in-depth analysis of different types of IP protection applicable to software and how these would work in practice if software is excluded from the patent system.

Chapter 9 - Pharmaceuticals – getting the right policy prescription

Pharmaceutical patent provisions impact a number of areas of the Australian economy, ranging from the provision of the broad healthcare system, to research and development in new and improved healthcare technologies. It has been widely noted, including in the Commission's draft report, that pharmaceuticals are an archetypal example of the patent system's aims – it encourages innovation in technologies that have high research and development costs, but once developed are relatively easy to reproduce.

The Commission's draft report identifies that the "stakes are high" for both pharmaceutical companies²⁸ and for the government and community²⁹ and estimates the costs on the taxpayer.

The department notes that Commission's draft recommendations are complex and interrelated. The final recommendations will require in-depth analysis to ensure that policy aims would be met, prior to any action being undertaken. The department offers the following comments to identify additional aspects that the Commission could investigate in order to enhance the evidence base for future consideration of the final recommendations.

The draft report discusses the effects of Extensions of Term (EoT) on firm behaviour from a global viewpoint. It finds that EoT are unlikely to offer a substantial incentive for global companies to invest in R&D, given the relatively small size of the Australian market and the commensurate small financial incentive. The Commission also notes that Australia has a reliance on imported pharmaceuticals and so any benefits accrue to overseas companies.

The department would welcome further analysis of the anticipated effects of the Commission's draft recommendations on the Australian pharmaceutical industry and investment in Australian pharmaceutical R&D. With regard to manufacture for export, the department considers that a comparative analysis of international approaches to this issue would assist the government in making future policy decisions.

The Commission could also consider possibilities and practicalities for closer alignment of the Australian system to those of major trading partners. For example, the Pharmaceutical Patents Review³⁰ found that the median effective market life is 12 months shorter than under the Australian system.

Finally, the Commission may wish to consider the suggestions made by IP Australia for improving the collection of data under section 76A of the Patents Act.

Chapter 11 – Trade marks and geographical indications

The draft report recommends that section 123 of the *Trade Marks Act 1995* be amended to remove any confusion regarding parallel importing which results in a less efficient trademark system.

The report cites previous reviews and stakeholder submissions suggesting that the current system leads to confusion and inefficiencies, as trade mark owners are not cognisant of the extent of the rights afforded to them under the Act.

The department agrees there is a need for greater clarity around the statutory requirement for 'consent' of the trade mark owner. The department is aware of circumstances³¹ where the intent to allow for parallel imports of trade marked goods has been circumvented by trade mark owners. The

department recommends any amendment in the legislation take account of the impact on consumer safety, counterfeit products and enforcement.

Chapter 14 – IP rights and Competition law

Part IV of the *Competition and Consumer Act 2010* (CCA) prohibits anti-competitive conduct. Section 51(3) of the CCA provides an exemption to Part IV for conditions in licences and assignments insofar as they relate to IP rights. Previous reviews relating to competition law have suggested amendments or deletion of this section as its impact has been assessed to be minimal.

The repeal of this section would result in transactions involving IP licensing being treated in the same manner as other property and assets as far as anti-competitive behaviour is concerned. This would negate the potential impact of cross-licensing activity in emerging and growth industries from occurring.

The department supports this recommendation, in light of its potential impact on competition. The department's view is that the repeal of section 51(3) will allow small to medium enterprises to compete on a more level playing field.

Chapter 15 – IP and public institutions

The draft report has identified the importance and impact of the contributions made by publicly-funded research. It notes the results of this research should be disseminated in such a manner that the greatest impact and influence can be derived from it. To this end, the report recommends that publications funded by government should be made freely available through an open access repository within 12 months of publication. Such practices have been widely adopted in the European Union, United States, Canada and the United Kingdom.

The department supports the Commission's recommendation as it would allow for increased knowledge dissemination with the potential to create improved linkages with overseas institutions and industry. We note the Department of Education and Training's open access working group is currently developing draft principles for *Open Access to Publically Funded Research Data and Publications*.

The department encourages an approach whereby individual agencies with R&D programmes should be given responsibility to implement the policy in a way that best suits their own circumstances, goals and stakeholders. It would also allow institutes to develop complementary policies to incentivise researchers to adopt and create a more open access culture.

The department notes the adoption of this recommendation would bring Australian policy into line with our major research partners in the United States, United Kingdom, Canada and the European Union. As most of these policies are in their infancy, there is little robust analysis available to measure the extent of their impact on scholarship and research. However, some studies³² demonstrate the effect of open access publishing has differing results, particularly on citation rates, depending on the discipline and the method used to make the publication available (research / individual archival vs journal / publisher archival).

Chapter 16 – Intellectual property's institutional and governance arrangements

The draft report considers that Australian Government IP policy-making is fragmented, citing stakeholder submissions and previous reports. Four broad options are canvassed which seek to improve the administration and governance of the IP system (pp. 439-440). These include: promoting

more cohesive, integrated and strategic IP policy; clearer separation of IP rights policy and administration; facilitating independent expert input on IP policy development; and additional oversight of IP Australia decisions.

Promoting more cohesive, integrated and strategic IP Policy and clearer separation of IP rights policy and administration

The department supports and recognises the importance of promoting a more cohesive, integrated and strategic IP Policy and clearer separation of IP rights policy and administration. Within the portfolio, the department collaborates with IP Australia to advise the Government on IP policy issues. The department and IP Australia have taken practical steps to improve their collaborative partnership, the quality of advice provided to the Government, and to manage the risks associated with IP Australia's dual roles as administrator and its support in providing technical and other input into policy considerations. The department is confident this approach will lead to a more cohesive policy development framework, particularly noting its responsibility to support industry innovation policy and technology diffusion.³³ The department will take into account stakeholder submissions to the Commission's inquiry in further refining the arrangements.

The department also leads on broad policy issues that intersect with its other responsibilities across the portfolio (with IP Australia generally leading on more technical issues). This partnership approach ensures that a broad economy-wide perspective can be brought to bear on IP policy issues, while recognising the specific legal, scientific and technological issues specific to the different IP rights.

The department recognises there is room for improvement in some areas raised in the draft report such as increased integration in IP policy development and advice. Clarity about whole-of-government objectives for IP system would be of benefit to the department and other agencies with an interest in IP issues. The department is confident these issues could be resolved efficiently by increased inter-agency cooperation and collaboration. The department is taking a more active coordination role across the range of government departments and agencies interested in IP issues. To address this, the department is looking to formalise this coordination mechanism as a standing interdepartmental committee (IDC) that would discuss IP policy issues at senior levels. This approach offers a number of advantages including promotion of integrated policy development with a strategic focus, and mitigation of risks involved with ad-hoc and reactive consultation. The IDC would be guided by terms of reference and one of its first tasks could be the development of an overarching IP policy framework, as suggested by the Commission. It could consider the interaction between IP and broad issues related to competition, trade, industry, and digital economy policies to aid Ministerial consideration and government decision making. We note that such a standing IDC is also suggested in the IP Australia submission.

The Commission has suggested that consolidation of IP policy within a single entity may result in a more integrated approach. There could be some benefits in this, for example a single point of contact for stakeholders and consumer advice. However, a consolidated point of contact for business does not necessarily require policy support to be consolidated within a single entity.

The department has considered the suggestions that all IP responsibility should move to the Treasury portfolio. Any benefits from centralizing IP responsibility in Treasury must be balanced against the benefits to the innovation system that arise from the close connection between IP administration and innovation policy development achievable within the Industry, Innovation and Science portfolio. In supporting a retention of the current arrangements, the department is investigating options for increased collaboration with Treasury. This will enable competition and consumer issues to be properly considered during IP policy development, while maintaining a focus on providing incentives for innovation and creativity.

As discussed above, the IP system plays a key role in incentivising innovation and creativity, research and development and in allowing collaboration and creativity between these sectors. While the department has the broad economy-wide perspective required to undertake the Commission's

suggested 'policy champion' role, the department understands competition and consumer issues can be of general concern in formulating IP policy.

Facilitating independent expert input on IP policy development

The Commission also discusses the sources of independent advice and oversight on IP matters available to the Government. We note the Government's usual practise is to refer to IP Stakeholder forums and to engage independent consultancies, including the Commission itself, to broaden its evidence base. This enables the Government to engage experts with relevant skills and experience, in an ad-hoc and 'as needs' manner.

Additional oversight of IP Australia decisions.

The department recognises the work that IP Australia and other IP offices globally are investing into quality of IP rights administration. We agree with the Commission's analysis that further changes regarding additional oversight of IP Australia's decisions are not warranted at this time. We note that meaningful review of IP Australia's decisions would require the commitment of significant financial and human resources. Given the abolition of the Advisory Council on Intellectual Property (ACIP) as an independent advisory body in 2015, significant evidence of problems would be required for the government to consider establishing a new body to perform this function.

Notes

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- ¹ Department of Industry, Innovation and Science. <<http://www.industry.gov.au/aboutus/pages/default.aspx>>.
- ² Administrative Arrangements Order – 30/09/2015.
- ³ The Global Innovation Index 2015 <<https://www.globalinnovationindex.org/gii-2015-report>>.
- ⁴ Australian Innovation System Report 2015 <<http://www.industry.gov.au/Office-of-the-Chief-Economist/Publications/Documents/Australian-Innovation-System/Australian-Innovation-System-Report-2015.pdf>>.
- ⁵ The Global Innovation Index 2015 <<https://www.globalinnovationindex.org/gii-2015-report>>
- ⁶ Taylor Wessing's Global Intellectual Property Index (GIPI) 5th report <<http://united-kingdom.taylorwessing.com/global-ip-index/>>.
- ⁷ The U.S. Chamber International IP Index "Infinite Possibilities" <http://www.theglobalipcenter.com/wp-content/themes/gipc/map-index/assets/pdf/2016/GIPC_IP_Index_4th_Edition.pdf>.
- ⁸ The International Property Rights Index 2015. <<http://internationalpropertyrightsindex.org/country?c=AUSTRALIA>>.
- ⁹ <http://www.australianmanufacturing.com.au/37353/ai-group-welcomes-establishment-of-pms-industry-4-0-taskforce>.
- ¹⁰ Enquiries into Intellectual Property's Economic Impact, OECD 2015
[http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=DSTI/ICCP\(2014\)17/CHAP1/FINAL&docLanguage=En](http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=DSTI/ICCP(2014)17/CHAP1/FINAL&docLanguage=En).
- ¹¹ WIPO Statistics database. Last updated: December 2015, extracted 24/06/2016 <<http://www.wipo.int/ipstats/en/>>.
- ¹² Australian Intellectual Property Report 2014, pages 26-27. <<https://www.ipaustralia.gov.au/sites/g/files/net856/f/intellectual-property-report-2014-low-res.pdf>>.
- ¹³ Australian Government, Department of Industry, Innovation and Science, *Australian Innovation System Report 2015*, p 51 <http://www.industry.gov.au/Office-of-the-Chief-Economist/Publications/Documents/Australian-Innovation-System/Australian-Innovation-System-Report-2015.pdf>.
- ¹⁴ WIPO Statistics database. Last updated: December 2015, extracted 24/06/2016 <<http://www.wipo.int/ipstats/en/>>.
- ¹⁵ Australian Government, Department of Industry, Innovation and Science, *Australian Innovation System Report 2015*, <http://www.industry.gov.au/Office-of-the-Chief->

¹⁶ For example, Intellectual Property Government Open Data (IPGOD), Expanded Analytical Business Longitudinal Database (EABLD).

¹⁷ Australian Intellectual Property Report 2014, pages 26-27.

<<https://www.ipaustralia.gov.au/sites/g/files/net856/f/intellectual-property-report-2014-low-res.pdf>>.

¹⁸ Government response to ACIP's 2010 *Report on Patentable Subject Matter*.

<https://www.ipaustralia.gov.au/about-us/public-consultations/archive-of-ip-reviews/ip-reviews/government-patentable-subject>.

¹⁹ IP Australia Consultation on proposed objects clause and patentability exclusion

<<https://www.ipaustralia.gov.au/about-us/public-consultations/consultation-proposed-objects-clause-and-patentability-exclusion>>.

²⁰ Submission from the Walter and Eliza Hall Institute of Medical Research.

²¹ ACIP Review of the Innovation Patent System FINAL REPORT May 2015; "Economic Impact of Innovation Patents" 2015 < <https://www.ipaustralia.gov.au/tools-resources/publications-reports/economic-impact-innovation-patents>>.

²² Moderate user is one that files 5 or more innovation patents.

²³ ACIP Review of the Innovation Patent System Options Paper August 2013 Chapter 4 <

https://www.ipaustralia.gov.au/sites/g/files/net856/f/options_paper_innovation_patent_review.pdf>.

²⁴ Such as the R&D Tax Incentive.

²⁵ Submissions from WiseTech Global, Qualcomm, Microsoft.

²⁶ ACIP Report on a Review of the Patenting of Business Systems September 2003 <

https://www.ipaustralia.gov.au/sites/g/files/net856/f/final_report_review_of_patenting_of_business_systems.pdf>.

²⁷ Gartner says 6.4 Billion Connected 'Things' Will Be in Use in 2016, up 30 Percent From 2015, Gartner. Newsroom, November 2015 < <http://www.gartner.com/newsroom/id/3165317>>.

²⁸ Productivity Commission 2016, *Intellectual Property Arrangements* Draft report, page 255.

²⁹ Ibid p 260.

³⁰ Pharmaceutical Patents Review Report 2013.

<https://www.ipaustralia.gov.au/sites/g/files/net856/f/2013-05-27_ppr_final_report.pdf>.

³¹ This has been explored in cases such as *Lonsdale Australia Limited v Paul's Retail Pty Ltd* [2012] FCA 584 and *Scandinavian Tobacco Group Eersel BV v Trojan Trading Company Pty Ltd* [2015] FCA 1086.

³² Oxford Journals, Assessing the Impact of Open Access June 2006

<http://www.oxfordjournals.org/news/oa_report.pdf>; Nature Publishing Group, Do Open access journals have impact? <<http://www.nature.com/nature/focus/accessdebate/19.html>>.

³³ Administrative Arrangements Order – 30/09/2015.