

Second-Tier Patent Systems: The Australian Experience

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Introduction

Approximately 60 countries in the world have some form of petty patent or utility model system,¹ jointly referred to as second-tier patent protection.² Whereas petty patents largely resemble standard patents of short duration,³ utility models have their origin in design law, and they commonly only protect inventions which have a three-dimensional form.⁴

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1 Uma Suthersanen, "A Brief Tour of 'Utility Model' Law" [1998] E.I.P.R. 44 at p.44.

2 See Mark D. Janis, "Second Tier Patent Protection" (1999) 40 *Harvard International Law Journal* 151 at p.151. See also Robin Jacob, "The Stephen Stewart Memorial Lecture: Industrial Property—Industry's Enemy" (1997) 1 *Intellectual Property Quarterly* 3 at p.10, where Jacobs prefers to use the term "patents", because it "conveys more properly what is being discussed—a monopoly right of some sort".

3 Janis, fn.2 above, at p.152.

4 *ibid.* See also Suthersanen's categorisation of the three-dimensional prototype of utility models and the patent law prototype: Suthersanen, fn.1 above, at pp.45–46.

Three major English speaking countries *do not* have a form of second-tier patent, namely the United States,⁵ Canada⁶ and the United Kingdom.⁷ However, the trend is arguably towards increased use of such systems. Indicative of this is the European Union's recent consideration of second-tier patent protection.

Discussion of European Union second-tier patent protection began in 1995, when the European Commission issued its *Green Paper on the Protection of Utility Models in the Single Market*.⁸ In its Green Paper, the European Commission outlined the possibility of introducing a Community second-tier patent, or alternatively, of harmonising Member States' existing second-tier patent systems. On December 12, 1997, the Commission made a proposal for a Directive governing second-tier patent protection.⁹ The Economic and Social Committee considered the proposed Directive and approved it, subject to 34 amendments. An amended proposed Directive has since been introduced.¹⁰ However, Member States have so far been unable to agree on second-tier patent protection, and priority has been accorded to the Community patent.

Australia has a relatively long history of second-tier patent protection. In 1979, Australia's initial second-tier patent system was introduced, the petty patent. In 2001, this was replaced by the innovation patent. This article presents the findings of the first comprehensive review of both Australian second-tier patent systems. It is intended to better inform domestic and international discussion of second-tier patent protection. It is particularly relevant for countries considering the introduction, or reform, of a second-tier patent system.

The primary question addressed in this article is whether Australian second-tier patent systems have met, or meet, the objectives for which they were introduced. The article is, therefore, principally descriptive. In order to address this question, it is divided into three parts. The first part traces the events, reviews and reports which led to the introduction of the petty patent system,

5 See Janis, fn.2 above, at p.161, for a discussion of the existence of a de facto second-tier patent system in the United States during the mid-20th century.

6 For a discussion of the reasons in support of the introduction of a second-tier patent system in Canada, see Michael Crinson, "Is Some Novel Protection of Invention Needed in Canada?" (1997) 12 *Intellectual Property Journal* 25.

7 But see Margaret Llewelyn, "Proposals for the Introduction of a Community Utility Model System: A UK Perspective" (1995) 2 *Web Journal of Current Legal Issues* at <http://webjcli.ncl.ac.uk> (last accessed December 3, 2004), for a discussion of why it could be argued that protection equivalent to second-tier patent protection has existed in the United Kingdom by virtue of the practices of the UK Patent Office.

8 COM (95) 370 final.

9 Proposal for a European Parliament and Council Directive approximating the legal arrangement for the protection of inventions by utility model: COM (97) 691 final.

10 European Parliament and Council Directive approximating the legal arrangements for the protection of inventions by utility model: COM (1999) 309 final. Since then the European Commission has published the European Commission Staff Working Paper in July 2001—Consultations on the Impact of the Community Utility Model in order to Update the Green Paper on the Protection of Utility Models in the Single Market: SEC (2001) 1307, and responses to this were received in March 2002. However, developments on this front have since stalled.

and later the innovation patent system. It outlines the characteristics of the two second-tier patent systems and clarifies their subtly differing objectives.

The second part of the article provides a profile of the users of the Australian standard, petty and innovation patents systems. This profile is ascertained through an analysis of patent application data.

The third part examines the extent to which the differing objectives of the petty and innovation patent systems have been, or are being, met. This analysis is performed on the basis of the information provided in the first part about the objectives of the various systems, in combination with the profile of the users in the second part. This part also discusses the implications of the Australian experience for other countries.

The Australian second-tier patent systems

Petty patents—Australia's initial second-tier patents

The Patents Amendment Act 1979 (Cth) introduced Australia's inaugural second-tier patent system, the petty patent, and was operative from July 1, 1979.¹¹ The objective of the petty patent system was to create a form of patent protection that was less expensive, more easily obtained and more quickly granted than standard patent protection, and that would accordingly be used for inventions with a relatively short commercial life.¹² The view was that the time and cost associated with standard patent protection meant that in practice there was "not a sufficiently quick and inexpensive and simple means of providing protection for the lower range of inventions, especially small articles having short commercial life-spans".¹³ The petty patent system was primarily intended for Australian industry and inventors.

The principal means by which the petty patent system aimed to cater for inventions of short commercial life was through eliminating opposition proceedings prior to grant. However, although apparently not the legislative intent, in practice petty patents underwent a full-examination prior to grant.¹⁴

Petty patents received an initial one-year term of protection from the date of sealing, with a maximum term of six years. During the initial year of a petty patent, evidence pertaining to grounds of invalidity could be brought by third parties to the Commissioner. It was

thought that this would partly counter the absence of opposition proceedings prior to grant.

Unlike many forms of second-tier patent protection, the subject-matter for which petty patents were permitted was identical to standard patents. Further, the requirements of patentability were also originally identical. Initially only one claim was allowed in a petty patent specification. Prior to the grant of a petty patent, an application could be converted to a standard patent application, but in practice the time in which such a conversion could occur was limited.

Like standard patents, petty patents could be applied for via the Patent Co-operation Treaty ("PCT") route.¹⁵ However, as petty patents were generally intended for the exploitation of inventions specifically within Australia, international protection through the PCT route was generally of little interest. According to World Intellectual Property Organization data, throughout the duration of the petty patent system only 13 petty patents were applied for using the PCT route were granted.¹⁶

Reviews of the petty patent system—towards the innovation patent

In 1981 a seminar was held in Melbourne to assess the success of the petty patent system.¹⁷ The system's primary advantage was viewed as the speed with which protection was obtained. On average, 90 per cent of granted petty patents were granted within three months of being filed.¹⁸ However, petty patents were criticised for not serving the people for whom they were intended.¹⁹ The patent attorney costs associated with a petty patent were comparable to standard patents—and thus prohibitive—as utmost care was required when drafting the single claim on which their validity depended.²⁰ The single claim also made it difficult to enforce a petty patent. Further, the six-year term was criticised for being too short to provide an incentive for a potential manufacturer to invest.²¹

The Patents Act 1990 (Cth), operative from May 1, 1991, repealed the Patents Act 1952 (Cth), and incorporated the recommendations made in the report of the Industrial Property Advisory Committee ("IPAC") entitled *Patents, Innovation and Competition in Australia*. Specifically, the Patents Act 1990 (Cth) differentiated between the assessment of novelty for

11 For an account of the history of the petty patent system, see Christie and Moritz, *Australia's Second-Tier Patent System: A Preliminary Review*, IPRIA Report 02/04 (December 2004, revised April 2005), available at www.ipria.org.

12 Commonwealth, Designs Law Review Committee ("Franki Committee"), *Report Relating to Utility Models (Second Term of Reference)*, Parl. Paper No.121 (1973), p.11.

13 Industrial Property Advisory Committee ("IPAC"), *Report on Proposed Petty Patents Legislation* (1978), p.3.

14 Patents Act 1990, s.50, provided that "the Commissioner must consider the patent request and the complete specification and . . . may make such investigations as the Commissioner thinks fit", to determine whether or not "there is a lawful ground of objection". In practice this amounted to an examination of the application, though apparently not the legislative intent: See Staniforth Ricketson, *The Law of Intellectual Property* (1984), para.47.56.

15 s.88(2) Patents Act 1990 (Cth), in accordance with Arts 43 and 44 of the Patent Co-operation Treaty, prior to being excluded in respect of innovation patents by Sch.1 para.4 of the Patents Amendment (Innovation Patents) Act 2000 (Cth).

16 World Intellectual Property Organization, *25 Years of Industrial Property Statistics (1975-2000)* www.wipo.int (March 20, 2004).

17 This seminar was held by the Victorian Chamber of Manufacturers in conjunction with IPAC and the Australian Patent Office.

18 Advisory Council on Intellectual Property ("ACIP"), *Review of the Petty Patent System* (1995), p.15.

19 Charles Sandercock, "Petty Patents and the Emperor's New Clothes" (paper presented at the Petty Patent Seminar, Melbourne, November 27, 1981), at p.5.

20 See, e.g. Sandercock, fn.19 above, at p.2.

21 See, e.g. Allen Koster, "The Private Inventor and Petty Patents" (paper presented at the Petty Patent Seminar, Melbourne, November 27, 1981), at p.3.

standard and petty patents, changed the prior art base for standard patents,²² and increased the number of permissible claims to a maximum of one independent claim with two dependent claims.

In August 1995, the Advisory Council of Intellectual Property ("ACIP")²³ released its *Review of the Petty Patent System*. ACIP was prompted to look at the issue of whether functional innovations received adequate protection through the existing standard and petty patent systems, subsequent to a discussion paper and report by the Australian Law Reform Commission ("ALRC") on designs legislation.²⁴

ACIP found the "petty patent system was not providing protection for incremental innovations".²⁵ It wrote:

"[t]he 'gap' relates to functional innovations that are not sufficiently inventive under the present standard or petty patent system to warrant protection, and are not protectable under the designs system which protects the appearance of articles, but not 'the way they work'. Provision of protection for these incremental innovations will encourage Australian individuals and businesses to invest in the development and marketing of their 'good ideas' in the domestic market."²⁶

Accordingly, ACIP recommended that the existing second-tier patent system be changed to provide "fast, limited monopoly protection for lower level or incremental inventions".²⁷ This new "innovation" patent system would require a lesser level of inventiveness than petty patents.²⁸ In its *Review of Intellectual Property Legislation under the Competition Principles Agreement*, the Intellectual Property and Competition Review Committee offered its full support for ACIP's recommendations.²⁹

Innovation patents—Australia's subsequent second-tier patents

The innovation patent system was introduced mid-2001 by way of the Patents Amendment (Innovation Patents) Act 2000 (Cth), which amended the existing Patents Act 1990 (Cth). Most features of the innovation patent were adopted from ACIP's recommendations. The key features of the innovation patent are:

- increased term of protection of eight years;
- maximum of five claims;
- substantive examination only upon request by the applicant, request by a third party or direction of the Commissioner;

22 The prior art base for standard patents subsequently included publications available throughout the world and public disclosures and acts in Australia, whereas the relevant prior art base used to assess novelty for petty patents remained domestic (i.e. publications, public disclosures and acts in Australia).

23 The Industrial Property Advisory Committee is the predecessor of the Advisory Council on Intellectual Property.

24 ALRC, *Designs*, Discussion Paper No.58 (1994) and ALRC, *Designs*, Report No.74 (1995).

25 ACIP, fn.18 above, at p.iii.

26 *ibid.*, at p.5.

27 *ibid.*

28 *ibid.*, at p.6.

29 Intellectual Property and Competition Review Committee ("the Ergas Committee"), *Review of Intellectual Property Legislation under the Competition Principles Agreement* (2000), p.16.

- no opposition proceedings prior to grant;
- same prior art base as for standard patents;
- lesser degree of inventiveness compared with petty (and standard) patents;
- priority obtainable from provisional applications;
- retention of divisional practice;
- possibility of conversion, prior to grant, of an innovation patent application to a standard patent application.

A table comparing the key characteristics of Australian standard, petty and innovation patents can be found in the Appendix. Innovation patents have been available to the public since May 2001, at which point the petty patent system became inoperative, except for a few transitional matters.

Empirical analysis of Australian second-tier patent systems

In this section the use of both Australian standard and second-tier patent systems is depicted on the basis of empirical data.³⁰ This analysis allows the authors to profile the users of the various patent systems. It is the resulting profiles that, in the conclusion, will be compared with the objectives of the second-tier patent systems to assess the relative success of both petty and innovation patents.

Second-tier versus standard patent applications

The number of standard, petty and innovation patent applications made per year from 1981 to 2004 is presented in Fig.1. Since 1981 there has been a general increase in standard and total patent applications, with a small decrease in standard patent applications between 1990 and 1993, possibly due to economic conditions at the time. The most dramatic increase in total patent applications occurred between 1993 and 2000. This corresponds to an increase in patenting throughout the world which occurred in the past decade.³¹ Since 1986, the number of second-tier applications has generally increased.

Recently the number of standard patent applications made has been relatively constant. In 2001, 22,742 standard patent applications entered the Australian patent system. In 2004, 22,824 such applications were made.

At the same time, innovation patent applications have increased, and have continued to constitute a greater proportion of total patent applications. The transition from the petty patent system to the innovation patent system in 2001 has been associated with a significant

30 All data used as the basis of this analysis have been received from IP Australia, the federal government agency responsible for granting rights in patents, trade marks and designs. Detailed information on the sourcing of these data, and qualifications in respect of the data, are contained in Christie and Moritz, fn.11 above, Pt 4.

31 In 2002 more than 850,000 patent applications were filed in Europe, the United States and Japan. This represented an increase of 250,000 since 1992: see OECD, *Patents and innovation: Trends and policy challenges* (2004) www.oecd.org (March 20, 2004), at p.7.

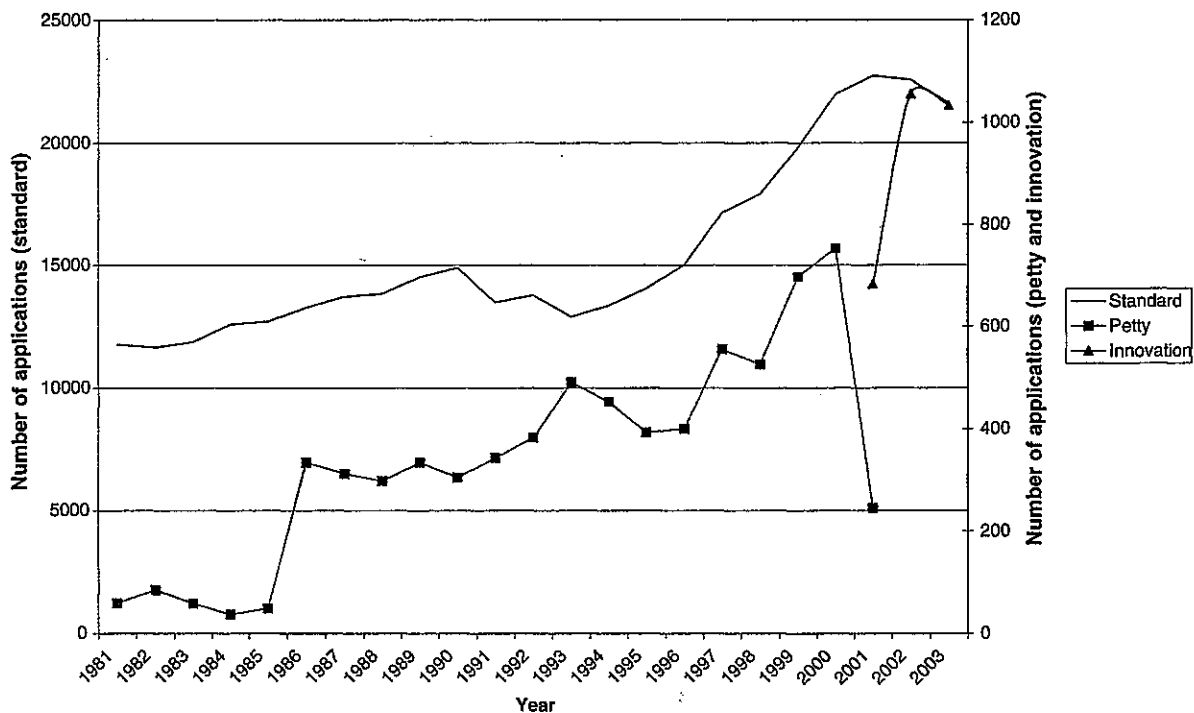


Figure 1 Standard (1981–2004), petty (1981–2001) and innovation (2001–2004) patent applications
Source: IP Australia data

increase in second-tier patent applications. From 1998 to 2004 second-tier patent applications more than doubled. As a result, innovation patents now generally account for a larger portion of total patent applications than did petty patents. Whereas in 1992 petty patents constituted 2.7 per cent of total patent applications, in 2004 innovation patent applications constituted 4.6 per cent of total patent applications.

Individual versus company applicants

From 1979 to 1987 the proportion of individual applications for standard patents generally increased, after which point it stabilised until 1994. At this time applications for standard patents made by individuals constituted 16–17 per cent of all applications. From 1994 to 2001 this proportion has been decreasing. In 2001 individual applications were only 13 per cent of total applications. This decline in standard patent applications made by individuals has coincided with a rapid increase in PCT applications, which are mainly made by companies, and a gradual decrease in non-PCT applications.

From 1979, the proportion of individual petty patent applications generally increased, until 1989, after which this proportion by and large decreased. In 1989 individual applications constituted 84 per cent of total petty patent applications, whereas by 2001 the proportion of petty patent applications made by individuals was only 51 per cent. In 2001, individual applications constituted 66 per cent of total innovation patent applications.

In 2003, the proportion of innovation patent applications made by individuals was 68 per cent. Thus there appears to be no trend as to growth or decline

in the proportion of applications made for innovation patents by individuals.

The average proportion of company versus individual patent applications over the relevant time periods is depicted in Fig.2. Averaged from 1979 to 2001, the proportion of standard patent applications made by a company was 85 per cent, and the remaining 15 per cent of applications were made by individuals. From 1979 to 2001, the average proportion of petty patent applications made by a company was 31 per cent of total petty patent applications. The remaining 69 per cent of applications were made by individuals. This contrasts markedly with standard patent applications. The proportion of total petty patent applications made by individuals is more than four times greater than this proportion in relation to standard patent applications. Averaged from 2001 to 2003, 66 per cent of innovation patent applications were made by individuals and 34 per cent of applications were made by companies.

Australian versus foreign applicants

Australian standard applications are decreasing as a proportion of total standard applications. In 1994, Australian applications accounted for 14 per cent of total standard patent applications; however, this proportion has been in gradual decline as the number of overseas PCT national phase entries has increased. In 2001, Australian applications made up only 10 per cent of total standard patent applications.

Although the majority of petty patents applications from 1979 to 2001 were Australian, this proportion generally decreased from 1983. Then, Australian applications accounted for 100 per cent of total applications. When the petty patent system concluded in

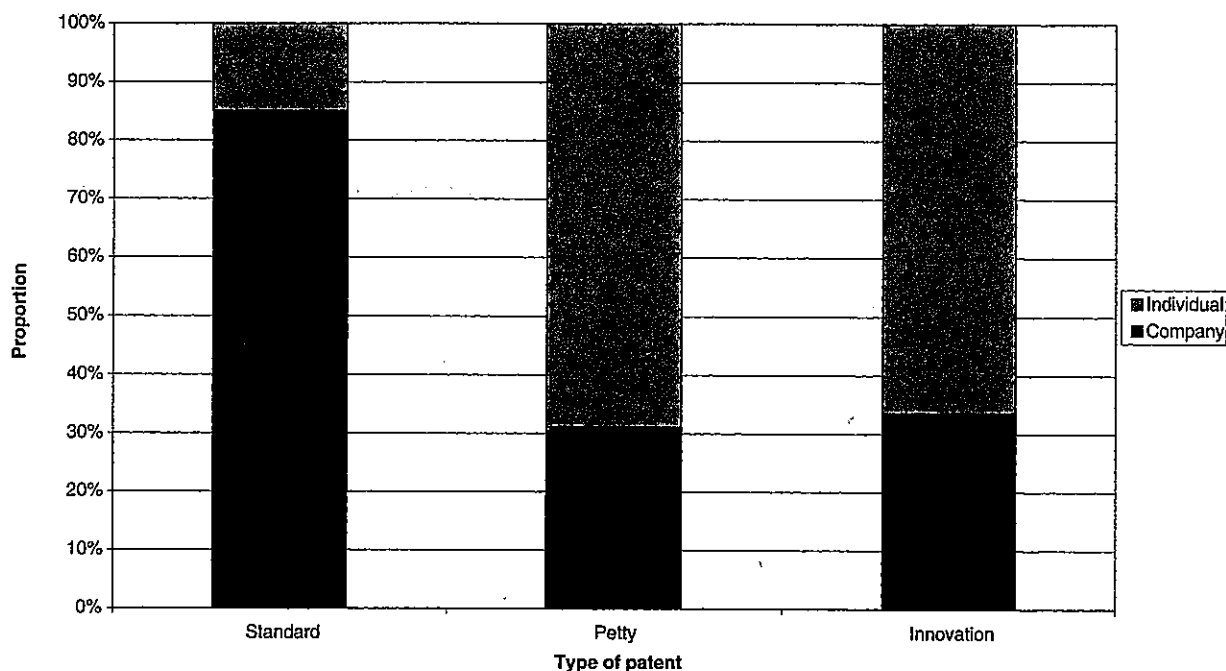


Figure 2 Average proportion of individual versus company patent applications: standard and petty patents (1979–2001), innovation patents (2001–2003) Source: IP Australia data

2001, Australian applications represented a significantly reduced 79 per cent of total petty patent applications.

The innovation patent system is predominantly utilised by Australian companies and individuals. It is worth noting that at its inception, Australian applications dominated total innovation patent applications with a greater majority than did Australian applications at the conclusion of the petty patent system (87 per cent as opposed to 79 per cent).

As depicted in Fig.3, from 1979 to 2001 Australian standard patent applications accounted for 12 per cent of total standard patent applications, and foreign applications made up 88 per cent of this total. In stark contrast to applications for standard patents, the average proportion of Australian to foreign petty patent applications during this period was 87 per cent to 13 per cent. Essentially, as far as petty patent applications are concerned, the proportion of Australian versus foreign patent applicants is the inverse of standard patents. The average proportion of Australian applications for innovation patents is relatively stable and equals that of petty patents. As shown in Fig.3, Australian applications for innovation patents account for 87 per cent of total applications, with the remainder coming from other countries.

“Top five” foreign countries

As mentioned above, averaged from 1979 to 2001, foreign standard patent applications accounted for 88 per cent of total standard patent applications. The top five foreign countries from which *standard* patents were applied during this period were:

- United States (46 per cent);
- Japan (12 per cent);
- Great Britain (9 per cent);

- Germany (8 per cent);
- France (4 per cent).

In total, applications for standard patent applications from the top five foreign countries account for 78 per cent of all foreign standard patent applications.

As previously noted, averaged from 1979 to 2001, foreign petty patent applications accounted for just 13 per cent of total petty patent applications. The top five foreign countries from which *petty* patents were applied during this period were:

- Taiwan, Province of China (“Taiwan”) (35 per cent);
- United States (11 per cent);
- New Zealand (8 per cent);
- Great Britain (4 per cent);
- Germany (2 per cent).

Compared with the top five foreign countries for standard patent applications, Japan and France are not represented, and instead Taiwan and New Zealand are, and Taiwan is even positioned before the United States. In total, applications for petty patent applications from the top five foreign countries account for 60 per cent of all foreign petty patent applications.

As previously mentioned, averaged from 2001 to 2003, foreign innovation patent applications accounted for just 13 per cent of total innovation patent applications. The top five foreign countries from which *innovation* patents were applied during this period are:

- Taiwan (50 per cent);
- United States (14 per cent);
- New Zealand (7 per cent);
- Great Britain (5 per cent);
- China (5 per cent).

The five foreign countries from which most foreign innovation patent applications originate are the same as

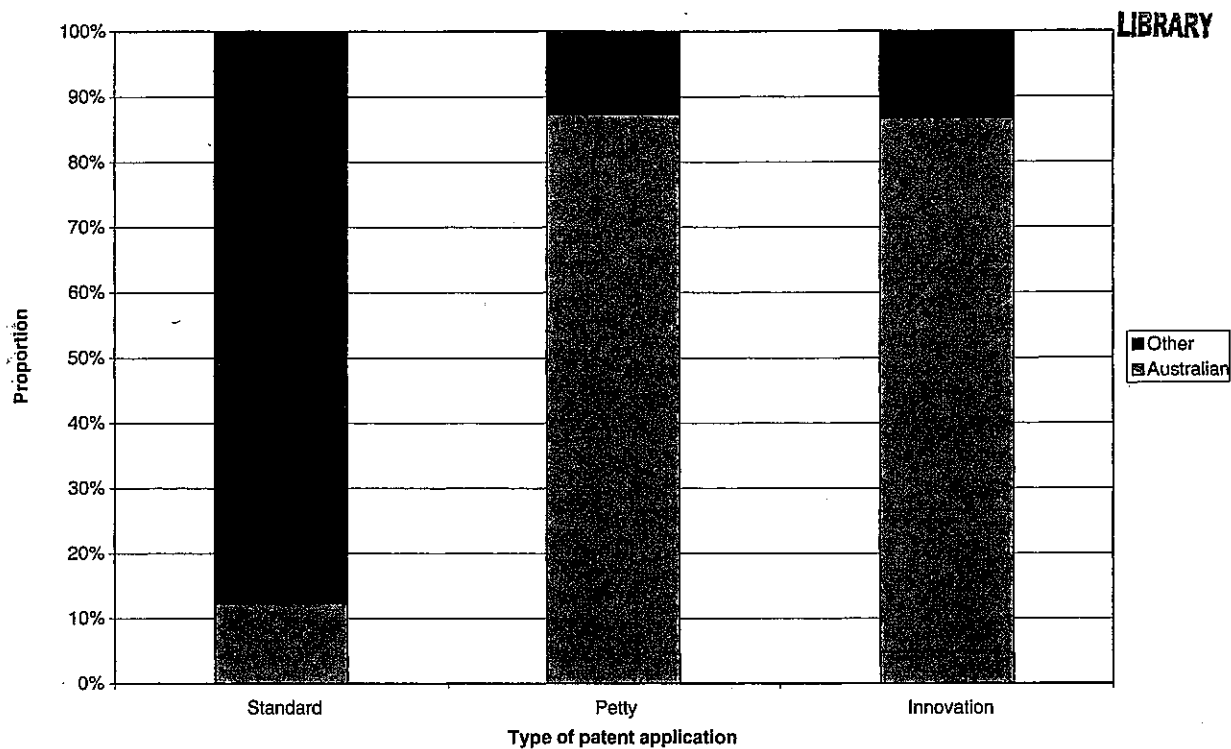


Figure 3 Average proportion of Australian versus foreign patent applications: standard and petty patents (1979–2001) and innovation patents (2001–2003) Source: IP Australia data

for petty patent applications, except that in fifth place Germany is replaced by China. In total, applications for innovation patent applications from the top five foreign countries account for 81 per cent of all foreign petty patent applications.

Foreign country use ratios

It is relevant to assess whether the specific countries served by Australian second-tier patent systems differ from those served by the standard patent system. Generally it can be said that foreign countries using the second-tier system fit into one of three categories:

- (1) countries represented substantially more among foreign second-tier patent applications than among standard patent applications;
- (2) countries represented neither substantially more nor substantially less among foreign second-tier patent applications than among foreign standard patent applications;
- (3) countries represented substantially less among foreign second-tier patent applications than among standard patent applications.

The ratio³² of petty to standard patent applications from each foreign country is depicted in Table 1.

Taiwan, China and New Zealand are all substantially more represented among foreign petty patent applications than foreign standard patent applications. New Zealand commands a proportion of foreign country applications for petty patents that is 6.28 times greater

Table 1: Ratio of foreign petty to foreign standard patent applications (1979–2001)

Category	Country	Ratio of petty to standard patents
1	Taiwan	90.43
	China	12.14
	New Zealand	6.28
2	South Africa	1.51
	Canada	0.69
	Great Britain	0.49
3	United States	0.25
	Germany	0.23

Source: IP Australia data

than this proportion for standard patents. Two non-OECD regions, Taiwan and China, command an even greater representation among foreign applications for petty patents relative to standard patents, with respective ratios of 90.43 and 12.14.

Among the countries which fall into category two are South Africa, Canada and Great Britain. Canada and Great Britain are represented to a lesser extent among foreign country applications for petty patents than standard patents, but the difference is relatively minor (0.69 and 0.49 respectively). Similarly, South Africa is only slightly over-represented among foreign petty patent applications (1.51).

Two OECD countries, the United States and Germany, can be said to fit into category three. They are on average four times less represented among foreign petty patent applications than standard patent

³² For a description of how the ratio is calculated, see Christie and Moritz, fn.11 above, Pt 4.6.3.1.

Table 2: Ratio of foreign innovation (2001–2003) to foreign standard patent applications (1979–2001)

Category	Country	Ratio of innovation to standard patents
1	Taiwan	127.16
	Bahamas	111.66
	China	38.26
	Russian Federation	19.39
	Hong Kong	15.09
	Singapore	11.80
	New Zealand	5.79
2	Denmark	2.88
	South Africa	2.31
	Israel	1.66
	Great Britain	0.58
3	United States	0.30
	Germany	0.10
	Japan	0.07

Source: IP Australia data

applications. Whereas 46 per cent and 8 per cent of foreign standard patent applications originate in the United States and Germany respectively, only 11 per cent and 2 per cent of foreign petty patent applications originate there.

The ratio of innovation to standard patent applications from each foreign country is depicted in Table 2.

More foreign countries are substantial users of the innovation patent system than the petty patent system. There were eight foreign substantial users of the petty patent system, whereas from 2001 there have been 14 substantial users of the innovation patent system.

More foreign countries are substantially over-represented among foreign innovation patent applications relative to foreign standard patent applications than among foreign petty patent applications. Taiwan, China and New Zealand are joined by the Bahamas, the Russian Federation, Hong Kong and Singapore in category one in relation to innovation patent applications. Notably, the proportion of foreign applications for innovation patents commanded by Taiwan is more than 127 times larger than the proportion of Taiwanese standard patent applications as a proportion of all foreign applications. Whereas less than 1 per cent of foreign standard patent applications are made by Taiwanese companies and individuals, 50 per cent of foreign innovation patent applications originate in Taiwan.

Among the countries which fall into category two—countries that are neither substantially more nor substantially less represented among foreign standard and innovation patent applications—are Denmark, South Africa, Israel and Great Britain. As was the case among petty patent applications, Great Britain is represented to a lesser extent among foreign countries from which applications for innovation patents originate than standard patents, but by a rather small proportion

(0.58). Conversely, Israel is slightly over-represented among innovation patent applications when compared with standard patents (1.66), as are South Africa (2.31) and Denmark (2.88).

In relation to foreign innovation patent applications, the United States (0.3) and Germany (0.10) are joined by Japan (0.07) in category three. They are countries that are substantially under-represented among foreign innovation patent applications in comparison to standard patent applications. On average, the United States commands only 14 per cent of foreign innovation patent applications, and neither Germany, nor Japan, are among the top five countries from which foreign innovation patent applications originate.

Technology groups of applications

The top five technology groups³³ for *standard* patents are all knowledge-intensive areas, which is perhaps not surprising given the high level of inventiveness necessary in order to receive standard patent protection. These technology groups are:

- organic fine chemicals (9 per cent);
- pharmaceuticals, cosmetics (6 per cent);
- medical engineering (5 per cent);
- telecommunications (5 per cent);
- analysis, measurement, control (5 per cent).

None of the technology areas for which standard patents are predominantly sought appeared within the top five technology groups for petty patents. Instead, the five most represented technology groups for *petty* patent applications were:

- consumer goods and equipment (13 per cent);
- civil engineering, building, mining (9 per cent);
- handling, printing (4 per cent);
- agriculture and food machinery (4 per cent);
- transport (4 per cent).

Applications for innovation patents are largely made in relation to the same technology groups as petty patents, albeit in different proportions. The most commonly represented technology groups for *innovation* patents from 2001 to 2003 were:

- consumer goods and equipment (22 per cent);
- civil engineering, building, mining (13 per cent);
- transport (9 per cent);
- information technology (9 per cent);
- handling, printing (6 per cent).

These are all industries in which products may have short life cycles.

Whereas the top five technology groups account for 30 per cent and 34 per cent of standard and petty patent applications respectively, they account for 59 per cent of innovation patent applications.

³³ Patent applications have been classified into technology groups according to the Office of Science and Technology ("OST") classification, through which each particular International Patent Classification ("IPC") subclass is mapped to a more general OST technology group.

Conclusion

This section considers the extent to which the petty and innovation patent systems in Australia have been effective in meeting their objectives. While most conclusions drawn are tentative, what is certain is that the profiles of both petty and innovation patent applicants differ markedly from the profile of standard patent applicants.

User types

Petty patents were introduced to provide less expensive protection for inventions of short commercial value, in particular for inventors and SMEs. Accordingly, one would anticipate greater representation of individuals among petty patent applicants than standard patent applicants, and this was the case. From 1979 to 2001 individuals constituted 69 per cent of petty patent applicants, as opposed to only 15 per cent of standard patent applicants. However, there was a declining representation of individuals among petty patent applicants in the latter years of the petty patent system. By the time of its cessation in 2001 only 50 per cent of petty patent applications were made by individuals.

The proportion of individuals making innovation patent applications is greater than the proportion of individuals who made petty patent applications in the latter years of the petty patent system. Innovation patents were intended to assist individual inventors by lowering the inventive threshold requirement in order to allow incremental and minor innovations to receive patent protection. From 2001 to 2003 individuals have on average represented 66 per cent of innovation patent applications. Perhaps the longer term (eight years), the increased number of permitted claims and the lower costs have in fact rectified some of the deficiencies of petty patents in so far as they served individual inventors.

Domestic versus foreign use

An analysis of whether applicants for patents are Australian or foreign suggests that, relative to standard patent applications, second-tier patents are utilised more by domestic inventors and innovators, for whom they were primarily intended, than by foreign inventors. Generally there exists an inverse relationship between Australian and foreign standard and second-tier patent applications: the proportion of foreign standard patent applications approximates the proportion of Australian second-tier patent applications. Averaged from 1979 to 2001, Australian applicants constituted 87 per cent of total petty patent applicants, although the proportion of Australian to foreign applicants dwindled in the latter years of the existence of the petty patent system. Similarly, the average proportion of Australian innovation patent applicants from 2001 to 2003 was also 87 per cent. It would appear that the characteristics of petty and innovation patents appeal to domestic innovators; these characteristics being the less expensive, more quickly obtained patent (which is subsequently of shorter duration than standard patent protection) and, with regard to innovation patents, the lesser requirement of inventiveness.

Origin of applications

The differing objectives of petty patents and innovation patents would suggest that the foreign countries from which applications for these forms of patent protection originate might differ. A priori, one might think that the foreign countries from which petty patent applications originate are likely to be those from which standard patents originate, because the same level of inventiveness was required for both. On the other hand, one might expect, a priori, a higher representation of foreign countries involved in lower-level innovation to be among the countries from which innovation patents originate, because the inventiveness threshold for innovation patents is lower than for standard patents. However, it appears that, typically, the characteristics of both the petty and innovation patent systems appeal to innovators in the same countries.

Of the applications for standard and second-tier patents that originate from outside Australia, there is only limited commonality between the top five foreign countries. Three of the top five foreign countries from which standard patents applications originate are represented among the top five foreign countries from which petty patent applications originated (the United States, Great Britain and Germany). This is the case for only two of the top five foreign countries from which innovation patent applications originate (the United States and Great Britain).

Also notable is the fact that a disproportionate amount of foreign users of the Australian second-tier patent systems come from countries in the Asia-Pacific region and from lesser-developed countries. In particular, China and Taiwan are substantially *over-represented* among both petty and innovation patent applications relative to standard patent applicants. By comparison, certain OECD countries with a long history of knowledge-intensive innovation are substantially *under-represented* among petty and innovation patent applicants. In addition, petty and innovation patent applications from New Zealand constituted a much larger portion of foreign applications than standard patent applications from New Zealand.

The fact that more foreign countries are *substantial* users of the innovation patent system than the petty patent system possibly reflects the fact that the lower threshold of inventiveness for innovation patents has made the Australian patent system accessible to a larger number of economies.

Technology groups of applications

Petty patents were applied for in relation to technologies other than those for which standard patents were sought, and for virtually the same technology groups for which innovation patent applications are now made. The following four groups were common to the top five technologies for both petty patents and innovation patents: consumer goods and equipment; civil engineering, building, mining; handling, printing; transport. Compared with petty and innovation patents, the top five technology groups for standard patents might be considered as knowledge-intensive areas (organic fine chemicals; pharmaceuticals and cosmetics;

medical engineering; telecommunications; and analysis, measurement and control). It would appear that, while the differing threshold of inventiveness for innovation patents may be responsible for an increase in second-tier patent application numbers, it has had little, or no, bearing on the subject-matter for which second-tier patents are sought. Certain specific characteristics of second-tier patents, such as the speed with which they are granted and the lesser cost, appear to suit specific technology areas, and these technology areas are similarly represented among innovation patent applications.

The presence of information technology among the top five technology groups for innovation patents is, perhaps, because this is an area in which the quick grant of a patent is particularly relevant, in order to speedily prevent competitors from copying processes. Developments in information technology occur at such a rapid pace that the value of the quick protection offered by innovation patents is arguably heightened.

Concluding observations

Petty patents were intended to provide less expensive patent protection for inventions of short commercial duration—patent protection that was quicker and easier to obtain than standard patent protection. Innovation patents were equally intended to provide less expensive, quick and easily obtainable protection, but for minor and incremental inventions, which previously received protection from neither patent nor designs law. Both the petty and innovation patent systems were intended to cater for domestic inventors.

On the basis of the profile for petty patent users, it would appear that the objectives of the petty patent system largely were met. There was a higher representation of domestic users and individual users among petty patent applicants than among standard patent applicants (although this waned in the latter years of the system). Accordingly, petty patents appear to have successfully advanced the interests of domestic innovation among inventors. Further, the technology groups represented among petty patent applications suggest that the petty patents were successful in catering for industries in which inventions of short commercial life were prevalent, although further research would be necessary to establish that the actual inventions concerned fit this description. Interestingly the foreign countries principally represented among petty patent applicants differ to some extent from such countries represented among standard patent applicants. The reason for this, and its relevance, might be the subject of further exploration.

Similarly, the evidence suggests that, as intended, innovation patents cater for individual inventors and domestic innovation. Further, a greater number of innovation patent applications are made compared with petty patent applications. This may be for various reasons. Future research might examine the extent to which it is due to the lower inventiveness threshold, or the greater number of claims permitted which, in turn, may have led to a decrease in attorney fees associated with an innovation patent application.³⁴ The technology groups represented among innovation patent applications are virtually identical to those represented among petty patent applications. Further research needs to be undertaken to examine whether the inventions protected are indeed of a minor and/or incremental nature. Countries in the Asia-Pacific region and developing countries are over-represented among the small number of foreign users of the innovation patent system, as they were in the petty patent system.

Judged by the policymakers' objectives, both of the Australian second-tier patent systems have been successful. The petty patent system has met, and the innovation patent system meets, the objectives for which it was introduced. The user profiles of the two Australian second-tier patent systems that have existed differ markedly from the user profiles of the standard patent system. Further, the Australian experience has shown that differences in form of second-tier patent systems have primarily impacted on the numbers of patent applications made, but not the people by whom those applications have been made.

This article has illustrated that Australia's experience of second-tier patent systems has in the main been successful. More generally, it informs the discussion of second-tier patent protection around the world. In particular, it acts as a guide for countries that are contemplating the introduction, or reform, of a second-tier patent system. Countries that are considering the introduction of a second-tier patent system may wish to assess whether there exists a demand for patent protection from the subset of users that, in Australia, were and are catered for by the petty patent and innovation patent systems. Those countries that presently have second-tier patent systems may wish to examine whether their users differ from the users of the standard patent system. In addition, they might assess whether their second-tier patent systems are meeting the objectives for which they were introduced. If not, reform of those systems may be required. The Australian experience has shown that a second-tier patent system can successfully serve objectives, and cater for users, that are different from those of the standard patent system.

³⁴ Sandercock, *fn.19* above, at p.2.

Appendix: Comparison of the key characteristics of standard, petty and innovation patents

	Standard Patent	Petty Patent	Innovation Patent
Objective	To encourage greater inventive activity through the grant of limited monopoly rights	To provide less expensive and quicker patent protection, and thereby to encourage inventions of a short commercial life	To provide less expensive, simpler and quicker patent protection, and thereby to encourage minor and incremental innovations
Initial legislation	Patents Act 1903 (Cth)	Patents Amendment Act 1979 (Cth)	Patents Amendment (Innovation Patent) Act 2000 (Cth)
Inventive threshold	Inventive step ³⁵	Inventive step	Innovative step ³⁶
Prior art base	Originally domestic; extended to publications available throughout the world; now publications and acts throughout the world ³⁷	Domestic ³⁸	Same as for standard patents ³⁹
Substantive examination prior to grant	Yes	Yes ⁴⁰	No ⁴¹
Number of claims	Multiple ⁴²	Originally 1 claim. Later 1 independent claim and up to 2 dependent claims ⁴³	Maximum of 5 claims ⁴⁴
Provisional application	Yes ⁴⁵	Yes ⁴⁶	Yes ⁴⁷
Divisional application	Yes ⁴⁸	Yes ⁴⁹	Yes ⁵⁰

35 s.18(1)(b)(ii) Patents Act 1990 (Cth), as defined in s.7(2) Patents Act 1990 (Cth).

36 s.18(1A)(ii) Patents Act 1990 (Cth), as defined in s.7(4) Patents Act 1990 (Cth).

37 Sch.1 Patents Act 1990 (Cth) definition of "prior art base".

38 However, given modern communication, in practice there was no real difference between domestic and worldwide standards for published documents.

39 See fn.37 above.

40 s.50 Patents Act 1990 (Cth) and see discussion at fn.14 above.

41 Substantive examination may be undertaken after grant, at the direction of the Commissioner for Patents or at the request of the patentee or a third-party: s.101A Patents Act 1990 (Cth).

42 s.40(2)(b) Patents Act 1990 (Cth).

43 The possibility of up to two dependent claims was introduced by the Patents Act 1990 (Cth).

44 s.40(2)(c) Patents Act 1990 (Cth).

45 s.29(2) Patents Act 1990 (Cth). An associated complete specification must be filed within 12 months of the provisional application having been filed: reg.3.10 Patents Regulations 1991 (Cth).

46 The ability to make a provisional application in respect of a petty patent became available once the Patents Act 1990 (Cth) came into effect. However, even prior to this, a provisional application could be lodged for a standard patent and once the complete standard patent application was made, a divisional could be lodged for a petty patent (so as to receive the earlier priority date of the provisional).

47 See fn.45 above.

48 An application for a standard patent can be made as a divisional application based on an earlier complete standard or innovation patent application: s.79B Patents Act 1990 (Cth); and reg.6A.1 Patents Regulations 1991 (Cth).

49 An application for a petty patent could be made as a divisional application based on an earlier complete standard or petty patent application: s.39 Patents Act 1990 (Cth), prior to amendment through the Patents Amendment (Innovation Patent) Act 2000 (Cth).

50 An application can be made for an innovation patent as a divisional application of a complete standard or innovation patent application: ss.79B and 79C Patents Act 1990 (Cth); and regs 6A.1 and 6A.2 Patents Regulations 1991 (Cth).

Appendix: Continued

	Standard Patent	Petty Patent	Innovation Patent
Opposition proceedings	Yes ⁵¹	No ⁵²	Only post-grant ⁵³
Availability of PCT route	Yes ⁵⁴	Yes ⁵⁵	No
Subject-matter	No express exclusions, except human beings, and the biological processes for their generation ⁵⁶	As for standard patents	As for standard patents, with the additional express exclusion of inventions concerning plants and animals and processes for the generation of plant and animals ⁵⁷
Typical time until grant	2–4 years from filing ⁵⁸	90% granted within 3 months from filing ⁵⁹	2–3 months from filing ⁶⁰
Application fees (not including attorney fees which account for the largest component of a patent application)	\$800 for complete standard patent application (paper form) plus request for examination, plus acceptance ⁶¹	\$445 for a complete petty patent application (paper form) plus request for examination ⁶²	\$470 for complete innovation patent application (paper form) plus request for examination ⁶³
Term	Currently maximum of 20 years from date of lodgement of specification ⁶⁴	Initial 1 year term from date of sealing. Possible extension of up to a maximum of 6 years	Initial 1 year term from the date of sealing. Possible extension of up to a maximum of 8 years

51 s.59 Patents Act 1990 (Cth).

52 However, in the initial year third parties could inform the Commissioner for Patents of matters affecting the validity of a petty patent.

53 Only after examination and certification: s.101M Patents Act 1990 (Cth).

54 s.88 Patents Act 1990 (Cth).

55 s.88(2) Patents Act 1990 (Cth), in accordance with Arts 43 and 44 of the Patent Co-operation Treaty, prior to being excluded in respect of innovation patents by Sch.1 para.4 of the Patents Amendment (Innovation Patents) Act 2000 (Cth).

56 s.18(2) Patents Act 1990 (Cth).

57 s.18 Patents Act 1990 (Cth). However, inventions concerning plants and animals are capable of innovation patent protection where such inventions are microbiological processes or products of such processes: s.18(4) Patents Act 1990 (Cth).

58 IP Australia, *The Patents Guide: The Basics of Patenting Explained* (2002), available at www.ipaustralia.gov.au (as at October 10, 2004), p.11.

59 ACIP, fn.18 above, at p.15.

60 IP Australia, above fn.58 above.

61 Sch.7, Pt 2 Patents Regulations 1991 (Cth). IP Australia also estimates the cost of an Australian standard patent, including attorney fees, as between \$5,000 and \$8,000, with maintenance fees for a 20-year period being an additional \$8,000: see IP Australia, above fn.58 above, at p.22.

62 Sch.7, Pt 2 Patents Regulations 1991 (Cth), prior to amendment in respect of innovation patents through paras 122, 123 and 124 of the Patents Amendment Regulations (No.1) 2001 No.98 (Cth).

63 Sch.7, Pt 2 Patents Regulations 1991 (Cth).

64 Prior to the passing of the Patents (World Trade Organisation) Amendment Act 1994 (Cth), the term was a maximum of 16 years. Following the passing of the Intellectual Property Laws Amendment Act 1998 (Cth), there is the possibility of a five-year extension for pharmaceutical patents.

