THE CASE OF AN AWKWARD INTERFACE — PATENTS V COMPETITION

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ABSTRACT

This paper examines the rationales behind Australian patent and competition laws and explores the relative efficacy of each in achieving its respective aims. The interface between patent and competition laws is then analysed and a resolution of any conflict or inconsistency between the two is proposed. Finally, the proposed resolution is applied to specific provisions of the *Patents Act* and *Trade Practices Act*.

I. INTRODUCTION

The interface between patent and competition or antitrust law[1] presents many interesting questions.[2] The ultimate object of each is to maximise societal

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1 In this paper, the term *competition law* is used to denote laws primarily directed at the promotion of competition through the proscription of anti-competitive conduct - essentially Pt IV of the *Trade Practices Act* 1974 (Cth). The term *antitrust law* is used as an alternative, although primarily with reference to the United States' legal regime.

2 See, for example, C Kaysen and D Turner, *Antitrust Policy*, Harvard University Press (1965) p 160: "[t]he correct location of the disputed boundary between ... patents law and ... antitrust law is a difficult and important problem", cited in PG McGonigal, "Patents and Competition Policy: Economic Implications" in Industrial Property Advisory Committee ("IPAC"), *The Economic Implications of Patents in Australia*, Australian Patent Office (1981) 141 at 141.

welfare.[3] However, the aspects of or means of achieving that goal may differ.[4] Therefore, they may conflict in their application[5] and moreover, differ in the efficacy with which they maximise welfare. The challenge is to strike an optimal, or at least appropriate balance between the two. This paper explores some of the issues raised by the relationship between patent and competition laws and analyses the prudence of the balance achieved by Australian law.

Part II is devoted to a brief examination of the rationales for and effectiveness of competition law. Part III canvasses the corresponding issues with respect to patents. The impact of competition upon innovation and the bearing of patents upon competition is then explored in Part IV and a resolution of any inconsistency is proposed. Part V provides an application of the suggested resolution by analysing specific provisions of the *Patents Act* 1990 (Cth) (*Patents Act*) and *Trade Practices Act* 1974 (Cth) (*TPA*). Their impact upon the patent-competition law interface and contribution towards a reasonable balance is assessed. Part VI concludes the paper.

II. COMPETITION LAW: RATIONALES AND EFFICACY

A. Reasons For and Against Competition

The object of the *TPA* "is to enhance the welfare of Australians through the promotion of competition".[6] Explanations of, and qualifications to, this statement are outlined in this section. The classic economic explication revolves around the notion of perfect competition.

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3 In this context, reference is to the maximisation of social welfare in the broadest sense. More narrowly stated, the object may be "to maximise wealth by producing what *consumers* want at the lowest cost": WS Bowman Jr, *Patent and Antitrust Law: A Legal and Economic Appraisal*, University of Chicago Press (1973) p ix (emphasis added).

4 Cf Pengilley who argued that competition and patent laws have the same object of promoting competition, although in practice, the respective effects on competition may differ: W Pengilley, "Patents and Trade Practices Competition Policies in Conflict?" (1977) 5 *Australian Business Law Review* 172 at 176. See also P Asch, *Economic Theory and the Antitrust Dilemma*, Wiley (1970) p 377; Trade Practices Commission Background Paper, *Application of the Trade Practices Act to Intellectual Property*, 1991 at 9: "the objective of granting exclusive [patent] rights is to foster innovation and therefore competition".

5 See, for example, *SCM Corporation v Xerox Corporation*, 463 FSupp 983 at 996–7 (1978): there "can be little doubt that these two sets of laws are juridically divergent".

6 *Trade Practices Act* 1974 (Cth), s 2. See also *Refrigerated Express Lines (Australasia) Pty Ltd v Australian Meat & Livestock Corporation [No 2]* (1980) 44 FLR 455 at 460, per Deane J; *Devenish v Jewel Food Stores Pty Ltd* (1991) 172 CLR 32 at 44, per Mason CJ. For other competition law rationales occasionally proposed, see note 39 *infra*.

(i) *Perfect Competition v Monopoly: An Economic Argument in Favour of Competition*

(a) *The Theory of Perfect Competition*

Perfect competition[7] denotes a particular market structure.[8] Under conditions of perfect competition, an efficient outcome is achieved as resources cannot be reallocated to improve any agent's welfare without reducing another's. Specifically, productive or technical efficiency is attained as sellers maximise output from any given quantity of inputs and allocative efficiency is achieved as the value (ie price) placed by buyers on the last units purchased is equal to the resources used by sellers to produce those units. There is no wastage in production or resource allocation.

(b) *The Theory of Monopoly and Its Inefficiencies*

The traditional contrast to perfect competition is monopoly.[9] It may exist where a market has high entry barriers such as government licensing requirements or patents. Three inefficiencies are associated with monopoly.

Firstly, with only one supplier and high entry barriers, potential suppliers are obstructed. So the monopolist has market power and consequently, sets its profit-maximising price above the perfectly competitive price.[10] The higher price results in allocative inefficiency and society *as a whole* is worse off since the monopolist's welfare is enhanced but by less than the loss to consumers.[11] Some research has shown that this inefficiency is negligible for the aggregate

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7 The adjective *perfect* is somewhat incongruous since there is actually *no* competition in either price or product under perfect competition. In the words of Shughart, "all rivalry between firms is assumed away": WF Shughart II, "Public-Choice Theory and Antitrust Policy" in FS McChesney and WF Shughart II (eds), *The Causes and Consequences of Antitrust: The Public Choice Perspective*, University of Chicago Press (1995) 7 at 16. The term is therefore also somewhat paradoxical given that economists often justify their arguments in favour of vigorous competition by resorting to the case of 'perfect' competition. Indeed "economists ... generally ... despair its absence": RD Blair and DL Kaserman, *Antitrust Economics*, RD Irwin (1985) p 3.

8 A full discussion of the theory of perfect competition is not possible in the confines of this paper. For a more detailed elaboration, see, for example, D McTaggart, C Findlay and M Parkin, *Economics*, Addison-Wesley (2nd ed, 1996) pp 246–62.

9 See, for example, SG Corones, *Restrictive Trade Practices Law*, Law Book Company (1994) pp 3–6; D McTaggart, C Findlay and M Parkin *ibid*, pp 281–4; R Sherman, *Antitrust Policies and Issues*, Addison-Wesley Publishing Company (1978) pp 16–21. Cf R Liefmann, "Monopoly or Competition as the Basis of a Government Trust Policy" (1915) 29 *Quarterly Journal of Economics* 308 at 315: "[t]he climax of competition is monopoly, and all competition is nothing but a striving for monopoly."

10 For a more in depth discussion, see, for example, RD Blair and DL Kaserman, note 7 *supra*, pp 25–41; RA Posner, "The Theory of Monopoly" in T Calvani and J Siegfried (eds), *Economic Analysis and Antitrust Law*, Little Brown (2nd ed, 1988) 15.

11 An exception is the case of price discrimination. In its 'perfect' form, a monopolist possesses information on how much each *individual* buyer is willing to pay for its product. It can then price discriminate between buyers by charging each a different price, being the maximum price that each buyer is willing to pay. In this case, the perfectly competitive quantity is traded and so all gains from trade are captured, but all by the monopolist. This orthodox analysis however, ignores the "fact that price discrimination is costly to effectuate": OE Williamson, *Antitrust Economics*, B Blackwell (1987) p 120. Hausman and MacKie-Mason have argued that no conflict exists between patent and antitrust policy in many price discrimination cases: JA Hausman and JK MacKie-Mason, "Price Discrimination and Patent Policy" (1988) 19 *Rand Journal of Economics* 253.

economy,[12] but other research has indicated that these welfare losses are concentrated in particular industries.[13]

A second source of inefficiency is rent-seeking.[14] The potential for would-be monopolists to secure monopoly profits and the prospect faced by consumers of monopoly price-quantity combinations, may respectively "attract real resources into efforts by sellers to monopolize, and by consumers to prevent being charged monopoly prices".[15] The costs of "wasting these resources on socially unproductive efforts are also social costs of monopoly".[16]

Finally, a firm may not always minimise costs.[17] It may not produce the optimum quantity from its given inputs and use them in cost-minimising proportions, given their relative costs. Whilst all firms may be 'X-inefficient'[18] to some degree, "the pressure to minimize costs ... to survive suggests that firms in competitive markets are fairly X-efficient".[19] Conversely, "[t]he best of all monopoly profits is a quiet life".[20]

The efficiency of perfect competition and contrasting inefficiencies associated with monopoly, provide the theoretical rationale for the promotion of competition.

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12 AC Harberger, "Monopoly and Resource Allocation" (1954) 44(2) *American Economic Review* 77. See also D Schwartzman, "The Burden of Monopoly" (1960) 68 *Journal of Political Economy* 627; GJ Stigler, "The Statistics of Monopoly and Merger" (1956) 64 *Journal of Political Economy* 33 at 34: "[i]f this estimate [of the negligible effect] is correct, economists might serve a more useful purpose if they fought ... termites instead of monopoly".

13 See, for example, JJ Siegfried and TK Tiemann, "The Welfare Cost of Monopoly: An Inter-Industry Analysis" (1974) 12 *Economic Inquiry* 190.

14 See, for example, JM Buchanan, "Rent Seeking and Profit Seeking" in JM Buchanan, RD Tollison and G Tullock (eds), *Toward a Theory of the Rent-Seeking Society*, Texas A&M University (1980) 3 at 12–14; AO Krueger, "The Political Economy of the Rent-Seeking Society" (1974) 64(3) *American Economic Review* 291; G Tullock, "The Welfare Costs of Tariffs, Monopolies and Theft" (1967) 5 *Western Economic Journal* 224.

15 RA Posner, *Antitrust Law: An Economic Perspective*, University of Chicago Press (1976) p 11. There is little agreement on the appropriate method of estimating the costs associated with rent-seeking: see, for example, VP Goldberg, "Reflections on the Welfare Loss Rectangle" (1976) 4(3) *Industrial Organisation Review* 151.

16 RD Blair and DL Kaserman, note 7 *supra*, p 41.

17 The seminal paper in this area is H Leibenstein, "Allocative Efficiency v 'X-inefficiency'" (1966) 56(3) *American Economic Review* 392.

18 There is some debate over terminology in this area. 'Productive inefficiency', 'technical inefficiency', 'price inefficiency' and 'income inefficiency' are sometimes used to describe this quality. For a discussion of whether 'X-inefficiency' differs see, for example, H Leibenstein, "X-Inefficiency Xists — Reply to an Xorcist" (1978) 68(1) *American Economic Review* 203; GJ Stigler, "The Xistence of X-Efficiency" (1976) 66(1) *American Economic Review* 213.

19 JJ Siegfried and EH Wheeler, "Cost Efficiency and Monopoly Power: A Survey" (1981) 21(1) *Quarterly Review of Economics and Business* 25 at 62; RD Blair and DL Kaserman, note 7 *supra*, p 39.

20 JR Hicks, "Annual Survey of Economic Theory: The Theory of Monopoly" (1935) 3 *Econometrica* 1 at 8. Cf RA Posner, *Antitrust Law*, note 15 *supra*, p 16: "the monopolistic firm has an incentive to *simulate* the competitive struggle for survival in order to minimize its costs and hence maximize its profits, and it can do this readily by establishing competing profit centers within the firm". Potential takeover bids may also provide an incentive for monopolists to reduce X-inefficiency but "operations have to reach a sorry state to motivate ... [a takeover] and it is always risky": Sherman, note 9 *supra*, p 21.

(ii) Qualifications and Objections to the Pursuit of Competition

Whilst there is little controversy over the inefficiencies of monopoly, there are arguments against and qualifications to the case for competition. These are presented and evaluated.

(a) Criticisms of the Perfect Competition Analysis

The first objection to the above analysis is that the conditions for a perfectly competitive market are unrealistic.[21] Samuelson, however, has pointed out that several agricultural markets effectively operate under such conditions.[22] More importantly, economists utilise perfect competition not for realism, but as a standard against which other market structures can be compared.[23]

A related criticism is that the conditions are in any case undesirable; particularly the possible ramifications for innovation and the absence of product variety in perfectly competitive markets. However, product differentiation (including advertising) and innovation can be introduced into the model, giving 'monopolistic competition'.[24] Whilst there is some loss of allocative efficiency in this market structure, this "has to be weighed against ... greater product variety"[25] and 'dynamic efficiency', which includes innovation.[26] The effect of competition upon innovation is explored in greater depth in Part IV, Section A. Despite the introduction of these factors however, "in broad outline the result will be roughly the same" as perfect competition.[27]

(b) The Presence of Externalities

Market failures such as externalities render the perfectly competitive outcome non-optimal for societal welfare. An externality is a cost or benefit "from an economic transaction that falls on a third party" which "is not taken into account

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21 "It is obvious that no industrial market can be organized in the atomistic form posited": DH Chapman, *Molting Time for Antitrust: Market Realities, Economic Fallacies and European Innovations*, Praeger (1991) p 117.

22 These are the markets for cotton, potatoes, tobacco and wheat: P Samuelson, *Economics*, McGraw-Hill (11th ed, 1980) p 484.

23 See, for example, M Blaug, *Economic Theory in Retrospect*, Irwin (3rd ed, 1978) pp 629–30, 700–1; D McTaggart, C Findlay and M Parkin, note 8 *supra*, pp 281–4. A common analogy is drawn with physicists who employ the perfect vacuum, which never occurs, to study conditions approaching that state.

24 The concept was introduced in 1933 by Chamberlin and Robinson: E Chamberlin, *The Theory of Monopolistic Competition*, Harvard University Press (5th ed, 1946); J Robinson, *The Economics of Imperfect Competition*, Macmillan (2nd ed, 1969).

25 D McTaggart, C Findlay and M Parkin, note 8 *supra*, p 303. If the ability to differentiate products was removed from the firms in a monopolistically competitive market, perfect competition would of course be attained.

26 Dynamic efficiency also reflects the "speed at which firms respond to changing problems and opportunities": Economic Planning Advisory Council Paper No 38, *Promoting Competition in Australia*, 1989 at 5.

27 FM Fisher, *Industrial Organization, Economics and the Law*, Harvester Wheatsheaf (1990) pp 5–6. Williamson has contended that the theory "sometimes needs to be augmented by introducing transaction cost considerations" but has nevertheless conceded that such considerations are "more a complement to than a substitute" for orthodox theory: OE Williamson, *Antitrust Economics*, note 11 *supra*, pp 71, 120.

by those who undertake the transaction".[28] Pollution is the classic external cost and spillovers from innovation are an oft-cited external benefit. Externalities should not inhibit the pursuit of competition but rather encourage adoption of mechanisms to facilitate 'internalisation' of the externality. Taxing polluters, subsidising innovators or assigning property rights,[29] are means of 'internalising' externalities so that the competitive outcome remains socially optimal.

(c) The Possibility of Economies from Horizontal or Vertical Mergers

Horizontal integration between firms results in fewer market participants and greater concentration of market power. It may also lead to economies and efficiencies. The possible trade-offs between market power and economies from such mergers can qualify the benefits of competition.[30]

Vertical integration mostly "results from a firm's desire to reduce its costs"[31] and arguably poses "rather limited threat of economic harm".[32] Savings may stem from technological interdependencies and perhaps more importantly, transactional efficiencies. For example, rather than contracting for products with outside entities, firms may vertically integrate to enable internal provision and thus avoid costs of using the marketplace, such as negotiation, risk and enforcement.[33]

Recently however, the importance of economies has been challenged, at least in manufacturing. Economies in distribution, marketing, manufacturing and research and development (R&D) remain significant in the aerospace, automotive and pharmaceuticals industries.[34] However, in most countries, small and medium-sized manufacturers are increasingly important and the significance

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28 D McTaggart, C Findlay and M Parkin, note 8 *supra*, p 482.

29 For classic expositions see, for example, R Coase, "The Problem of Social Cost" (1960) 3 *Journal of Law and Economics* 1; H Demsetz, "Toward a Theory of Property Rights" (1967) 57(2) *American Economic Review* 347.

30 For a more detailed examination see, for example, OE Williamson, "Economies as an Antitrust Defense Revisited" (1977) 125 *University of Pennsylvania Law Review* 699; OE Williamson, note 11 *supra*, pp 3–23.

31 H Hovenkamp, *Economics and Federal Antitrust Law*, West Publishing Company (1985) p 192. Vertical integration may also be employed to evade taxes or quotas: see, for example, GJ Stigler, "The Division of Labor is Limited by the Extent of the Market" (1951) 59 *Journal of Political Economy* 185 at 190–1. For an interesting policy solution, see RD Blair and DL Kaserman, note 7 *supra*, pp 336–8.

32 H Hovenkamp, *ibid*, p 202. Indeed, many have argued that most instances of vertical integration should be legal: RH Bork, *The Antitrust Paradox: A Policy at War with Itself*, Basic Books (1978) p 226; FH Easterbrook, "Vertical Arrangements and the Rule of Reason" (1984) 53 *Antitrust Law Journal* 135; RA Posner, "The Next Step in the Antitrust Treatment of Restricted Distribution: Per Se Legality" (1981) 48 *University of Chicago Law Review* 6. Cf OE Williamson, note 11 *supra*, pp 71–160 for a transaction costs analysis.

33 See, for example, Industry Commission Information Paper, *Implementing the National Competition Policy: Access and Price Regulation*, 1995 at 220. See also R Coase, "The Nature of the Firm" (1937) 4 *Economica* 386.

34 So not surprisingly, these industries are dominated by a handful of global corporations: Pappas Carter Evans and Koop Final Report of the Study for the Australian Manufacturing Council, *The Global Challenge: Australian Manufacturing Industry in the 1990s*, 1990.

of economies appears to have been overstated for most industries.[35] Moreover, Porter has argued that relatively small, export-orientated firms can become world leaders; home market dominance is not necessary to reap the economies to be globally competitive.[36] So the evidence on economies is mixed, but recent research has indicated that the qualification does not substantially weaken pro-competition arguments,[37] particularly when contrasted with the inefficiencies of monopoly.

In summary, the case against monopoly is strong and despite the partial qualifications of possible economies and innovation (a subject to which the paper returns), the pro-competition arguments are considerably more compelling than those against, particularly since allowance can be made for the qualifications in Australian competition law. These 'allowance', or authorisation and notification procedures are discussed below.

B. The Efficacy of Competition Laws

This section addresses whether competition law should be used to promote competition and whether it has been effective to date.

The prime purpose of the competition provisions of the *TPA*, a descendant of the United States' *Sherman Act*,[38] is undoubtedly the encouragement of

35 McKinsey and Company Final Report to the Australian Manufacturing Council, *Emerging Exporters: Australia's High Value Added Manufacturing Exporters*, 1993. For example, 80 per cent of manufacturing value-added in Japan is attributed to firms with fewer than 300 employees. See also Bureau of Industry Economics Research Report 26, *The Impact of Microelectronics on Scale and Competitiveness in Australian Industry: Case Studies of Pulp, Paper, and Paper Products Industries*, 1988; E Helpman and P Krugman, *Market Structure and Foreign Trade: Increasing Returns, Imperfect Competition, and the International Economy*, MIT Press (1985).

36 ME Porter, *The Competitive Advantage of Nations*, Macmillan (1990).

37 See Senate Standing Committee on Legal and Constitutional Affairs, *Mergers, Monopolies and Acquisitions: Adequacy of Existing Legislative Controls*, 1991 at paras 3.25, 3.26, 3.113.

38 *Sherman Act*, 15 USCA (1890). This Act however, may have been enacted for exclusively political motives and not to promote competition at all: TJ DiLorenzo, "The Origins of Antitrust: An Interest-Group Perspective" (1985) 5 *International Review of Law and Economics* 73. Indeed, there is evidence that contemporary economists were critical of antitrust policy: GM Miller II, *The Impacts of Antitrust Enforcement on Industry Performance*, Garland Publishing (1993) p 22. See also DH Chapman, note 21 *supra*, p 86: "[e]conomic theory cannot be said to have played any significant role in either bringing about or shaping the substance of the ... Act". Cf R Pitofsky, "The Political Content of Antitrust" (1979) 127 *University of Pennsylvania Law Review* 1051 at 1057, citing Thorelli's study of the *Sherman Act*: "at least one major theme of legislative purpose was the desire to improve the free market system". Or perhaps US laws were driven by the need to remove the uncertainty of large US trusts: JB Clark, "Trusts" (1900) 15 *Political Science Quarterly* 181 at 181. Perhaps not surprisingly, empirical evidence has indicated that it "diminished rather than enhanced competition": GM Miller, *ibid*, p 22.

competition to increase social welfare.[39] Nevertheless, several issues concerning the use of competition law in this manner need to be examined.

(i) Costs of Regulation

Whilst market failure is a justification for government intervention "it is important that in addressing one market failure another is not created".[40] The benefits of regulation should exceed costs of administration and compliance. This concern is particularly acute for two reasons. First, the ability of regulatory authorities to accurately perceive market conditions and the motives of firms is probably inferior to that of market participants themselves. In this environment, regulation may be more costly than beneficial. Secondly, the argument for competition is typically based on 'partial equilibrium' analysis, which considers each market individually without necessarily considering interactions between markets. Regulation in one market to further competition may impact upon others and all costs and benefits across markets must be considered when evaluating the merits of intervention.[41]

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39 *Trade Practices Act* 1974 (Cth), s 2. See also note 6 *supra* and accompanying text. Competition law arguably serves other purposes, although probably not well. First, it can effect redistributions of income from monopolistic firms to consumers. Secondly, "some subscribe to the notion that the antitrust laws function ... to preserve local control of business and to protect against the effects of labor dislocation": T Calvani, "What is the Objective of Antitrust?" in T Calvani and J Siegfried (eds), *Economic Analysis and Antitrust Law*, Little Brown (2nd ed, 1988) 7 at 11; see *US v Falstaff Brewing Co*, 410 US 526 (1973) for judicial recognition of this aim. Thirdly, there is the Jeffersonian view that "large aggregations of economic power" pose "a serious threat to political democracy": RD Blair and DL Kaserman, note 7 *supra*, p 22; see also AT Hadley, "Private Monopolies and Public Rights" (1887) 1 *Quarterly Journal of Economics* 28 at 28. A final and related argument is that competition laws protect small business from larger predators: see, for example, Australia, House of Representatives 1986, Debates, vol HR 147, p 1626 (Lionel Bowen, Attorney-General): it is "important to ensure that small businesses are given a measure of protection from the predatory actions of powerful competitors"; Economic Planning Advisory Council, *Promoting Competition*, note 26 *supra* at 6: "the community would also wish to protect small business"; see also *Trade Practices Act* 1974 (Cth), s 46(1)(a) and (c). *Contra Queensland Wire Industries Pty Ltd v The Broken Hill Pty Ltd Co* (1989) 167 CLR 177 at 191. For US examples of this final rationale, see, for example, *US v Aluminium Co of America*, 138 F2nd 416 (2nd Cir, 1945); *US v Von's Grocery Co*, 384 US 270 (1966). *Contra* R Pitofsky, note 38 *supra*.

40 A Fels and J Walker, "Competition Policy and Economic Rationalism" in S King and P Lloyd (eds), *Economic Rationalism: Dead End or Way Forward?*, Allen & Unwin (1993) 169 at 169.

41 On a technical and theoretical aside, the "General Theory of Second Best" states that where one condition necessary for the achievement of a perfectly competitive optimum cannot be attained, it is not necessarily the case that the fulfilment of all other necessary conditions will lead to a *second best* optimum. So "to apply to only a small part of an economy ... [for example,competition policies] which would lead to ... an optimum if they were applied everywhere, may move the economy away from, not toward, a second best optimum position": RG Lipsey and K Lancaster, "The General Theory of Second Best" (1956) 24 *Review of Economic* Studies 11 at 17. Fortunately for economists, "the conditions under which such counterproductive results would obtain are rare and idiosyncratic ... [and] of *little practical importance*": DH Chapman, note 21 *supra*, p 119 (emphasis added). See also RH Bork, note 32 *supra*, pp 113–14; K Elzinga, "The Goals of Antitrust: Other than Competition and Efficiency, What Else Counts?" (1977) 125 *University of Pennsylvania Law Review* 1191 at 1209–11; J Rakowski, "The Theory of the Second Best and the Competitive Equilibrium Model" (1980) 14 *Journal of Economic Issues* 197; FM Scherer, *Industrial Market Structure and Economic Performance*, Rand McNally College (2nd ed, 1980).

It is submitted that the procedures in Australian law are adequate to tackle both of these concerns,[42] whilst imposing only minimal costs. They allow firms to apply for authorisation of, or to notify the competition regulator of, potentially anti-competitive conduct. The (net) public benefits may then be assessed by the regulator and where appropriate, the conduct quarantined from the *TPA*.[43]

(ii) The Effect of Import Competition

Some have argued that "the relevant market for many goods and services ... is global" which may "more than compensate for a noncompetitive industry structure in the domestic market".[44] However, many goods and especially services are still not traded internationally so a role for competition law, with the exercise of greater discretion, remains.[45]

(iii) Antitrust Doubts in the United States

In the US, "disenchantment with antitrust policy has grown ... for ... the laws may often hinder rather than improve economic efficiency".[46] A combination of factors has been responsible, including judicial application of the law[47] and politicisation of enforcement.[48] Furthermore, regulatory investigations are most often initiated "at the behest of corporations, trade associations, and trade unions whose motivation is ... to shift the costs of their private litigation to the taxpayer

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42 See also text accompanying note 57 *infra*.

43 *Trade Practices Act* 1974 (Cth) Pt VII. All types of anti-competitive conduct, with the exception of misuse of market power (ss 46 and 46A), can either be authorised by the Australian Competition and Consumer Commission (ACCC) or notified to it: ss 88 and 93. Authorisation can only be granted where there is a (net) public benefit and such authorisation suspends the application of Part IV prohibitions: ss 88 and 90. Notification has a similar effect, unless and until the ACCC objects to the notified conduct for lack of (net) public benefit: s 93.

44 GM Miller, note 38 *supra*, pp 97–8. See also A Fels and J Walker, note 40 *supra* at 171: "as more sectors are exposed to international competition, anti-competitive conduct is undermined". Therefore, "areas of our economy subject to import competition have little need for TPC action": A Fels, "Allan Fels Shares His Views" in D McTaggart, C Findlay and M Parkin, note 8 *supra* at 475.

45 A Fels and J Walker, note 40 *supra* at 171.

46 GM Miller, note 38 *supra*, p 9. See also TG DiLorenzo, note 38 *supra* at 73.

47 See, for example, FS McChesney, "Be True to Your School: Chicago's Contradictory Views of Antitrust and Regulation" in FS McChesney and WF Shughart II (eds), *The Causes and Consequences of Antitrust: The Public Choice Perspective*, University of Chicago Press (1995) 323 at 324: "much of antitrust jurisprudence is economic nonsense". Indeed "[e]veryone has a favorite example". This judicial blessing "has given private plaintiffs much ammunition for meritless ... actions. Antitrust has thereby become a weapon wielded against competition": at 325.

48 See, for example, MB Coate, RS Higgins and FS McChesney, "Bureaucracy and Politics in FTC Merger Challenges" (1990) 33 *Journal of Law and Economics* 463 at 481: merger challenges by members of Congress may "prevent the exit of resources and votes from a politician's jurisdiction". This may be particularly true where constituents "depend disproportionately on a few key [local] industries": RA Posner, "The Federal Trade Commission" (1969) 37 *University of Chicago Law Review* 48 at 83. See also MB Coate, DS Higgins and FS McChesney at 482: "greater political pressure does cause the FTC [Federal Trade Commission] to challenge more mergers"; RL Faith, DR Leavens and RD Tollison, "Antitrust Pork Barrel" (1982) 25 *Journal of Law and Economics* 329 at 342: "[i]f anything, the pork-barrel relationship between Congress and the commission became statistically stronger during the ... 1970s." However, the party in the White House would appear to have little "influence on the quantity of [*sic*] quality of the Justice Department's antitrust activity": RA Posner, "A Statistical Study of Antitrust Enforcement" (1970) 13 *Journal of Law and Economics* 365 at 413.

[or] ... worse to harass competitors".[49] Not surprisingly, some in the US have opined that "[a]ntitrust is clearly costly" and has "not delivered any benefits".[50]

(iv) The Australian Experience

In the 1960s, prior to implementation of a comprehensive competition law, Karmel and Brunt wrote that just as "in a nudist colony nakedness goes unnoticed", in Australia "structural monopoly and oligopoly ... are ... taken for granted".[51] Not unexpectedly then, US concerns have not substantially diminished the belief in competition law in Australia.[52] In 1993, Australia's competition legislation was rated as equal most effective[53] and the forerunner to the Australian Competition and Consumer Commission, the Trade Practices Commission, was winning 95 per cent of its court cases.[54]

Part of the reason for the *TPA*'s success is its Part VII authorisation and notification procedures,[55] which have no US counterpart.[56] The procedures give the regulator greater discretion, and provided it remains free of politicisation, they can address most of the concerns regarding competition and competition laws. For example, where economies may be available from an otherwise anti-competitive merger, "the authorisation process provides an avenue ... to balance the costs and benefits ... [t]his preempts the need for costly litigation".[57] Given the apparent success of Australian competition law and policy, it is perhaps

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49 RA Posner, *ibid* at 87.

50 FS McChesney, note 47 *supra* at 336. In fact, the "available evidence indicates that antitrust *reduces* output and wealth": at 336. See also GM Miller, note 38 *supra*, p 107: "antitrust enforcement ... tends to attack efficient contractual arrangements in the economy more often than not". Miller found that "an *additional* antitrust case brought in an industry in a given year leads to a decrease in industry output" for two years after the commencement of the action and the "negative impact ... on employment" in the industry continues for three years: pp 70–1 (emphasis added).

51 PH Karmel and M Brunt, *The Structure of the Australian Economy*, FW Cheshire (1962) p 66. For example, "[p]ublic authorities' attempts to obtain their requirements by public tender were held up to public mockery by the submission of identical tenders, in one instance from *nineteen* suppliers each quoting the quite improbable sum of £27,578 14s 2d": Sir G Barwick, "Trade Practices in a Developing Economy", GL Wood Memorial Lecture, 1963 at 2 (emphasis added).

52 For example, a 1992 survey of Australian economics professors found that 81.1 per cent gave unqualified or qualified support for applying it to reduce monopoly power whilst 11.3 per cent disagreed and 7.5 per cent were unsure: M Anderson and R Blandy, "What Australian Economics Professors Think" [1992] (4) *Australian Economic Review* 17. With respect to the qualification on support, the professors "no doubt had the authorisation process in mind": A Fels and J Walker, note 40 *supra* at 173. Cf P Swan, "Comments" in S King and P Lloyd (eds), *Economic Rationalism: Dead End or Way Forward?*, Allen & Unwin (1993) 192.

53 World Economic Forum, *The World Competitive Report 1993* (1993).

54 A Fels, note 44 *supra*, at 475. Somewhat paradoxically, this may be because since 1991, an economist has chaired the competition regulator, the first to do so. By contrast, in the US, "[l]awyers have greater influence with the commission": MB Coate, RS Higgins and FS McChesney, note 48 *supra* at 229.

55 See note 43 *supra* and accompanying text for more detail on these administrative procedures.

56 J Duns and MJ Davison, *Trade Practices and Consumer Protection: Cases and Materials*, Butterworths (1994) p 403.

57 A Fels and J Walker, note 40 *supra* at 173.

unsurprising that recent reforms recommended *increasing* competition regulation and *widening* the scope of competition laws.[58]

Given Australia's history of a pervasive "interlocking pattern of horizontal and vertical restrictions",[59] the achievements of competition law to date "are immense"[60] and the case for its continued application is strong, particularly in light of the international "efforts to harmonize national [competition law] schemes".[61]

III. PATENT LAW: RATIONALES AND EFFICACY

A. Rationales for Patents

"Technological innovation, spurred by expenditures on research and development, is one of the most significant forces causing economic growth and a major determinant of social welfare".[62] Whilst this is generally undisputed,[63] the role of patents in spurring innovation[64] and welfare is contentious. This section briefly examines the theoretical arguments for patent regimes.[65]

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58 See, for example, *Competition Policy Reform Act* 1995 (Cth); Economic Planning Advisory Council Background Paper No 32, *Issues in Competition Policy*, 1993 at 23; A Fels and J Walker, note 40 *supra* at 171–2; Independent Committee of Inquiry, *National Competition Policy*, AGPS 1993.

59 M Brunt, "The Australian Antitrust Law after 20 Years - A Stocktake" (1994) 9 *Review of Industrial Organisation* 483 at 487.

60 *Ibid* at 493.

61 C Arup, *Innovation, Policy and Law: Australia and the International High Technology Economy*, Cambridge University Press (1993) p 165. See also PJ Lloyd, "Competition Policy in APEC: Principles of Harmonisation" (University of Melbourne, Department of Economics Working Paper No 558, 1997).

62 RE Caves, ME Porter, AM Spence with JT Scott, *Competition in the Open Economy: A Model Applied to Canada*, Harvard University Press (1980) p 165.

63 For comments on the positive links between innovation and welfare, see, for example, M Dodgson, "Technology and Innovation: Strategy, Learning and Trust" in P Sheehan, B Grewal and M Kumnick (eds), *Dialogues on Australia's Future*, Centre for Strategic Economic Studies (1996) 215; IPAC Report to the Hon Barry O Jones MP, Minister for Science and Technology, *Patents, Innovation and Competition in Australia*, 1984 at 11; Industry Commission Report No 44, *Research and Development*, 1995 at 151–9; R Johnston, "The New Drivers of Innovation in the Knowledge Economy" in P Sheehan, B Grewal and M Kumnick (eds), *Dialogues on Australia's Future*, Centre for Strategic Economic Studies (1996) 229; D Ravenscraft and FM Scherer, "The Lag Structure of Returns to Research and Development" (1982) 14 *Applied Economics* 603; FM Scherer and D Ross, *Industrial Market Structure and Economic Performance*, Houghton Mifflin (3rd ed, 1990). Cf D Silverstein, "Intellectual Property Rights, Trading Patterns and Practices, Wealth Distribution, Development and Standards of Living: A North-South Perspective on Patent Law Harmonization" in GR Stewart, MJ Tawfik and M Irish (eds), *International Trade and Intellectual Property: The Search for a Balanced System*, Westview Press (1994) 155 at 163–6, who noted that for less developed countries, innovation *may detract* from social welfare.

64 Whilst the words *innovation* and *invention* and their related forms have different connotations, they are largely used interchangeably in this paper.

65 For a more detailed discussion of the rationales for intellectual property generally, see, for example, P Drahos, *A Philosophy of Intellectual Property*, Dartmouth Publishing Company (1996).

(i) The Libertarian-Natural Law Thesis

The natural law justification for patents[66] was "practically abandoned by the late 1820s".[67] However, the "idea that a patent system provides protection for small firms"[68] can perhaps be seen (loosely) as a modern variation on the libertarian rationale since the ideas of small firms are theoretically afforded "protection from [appropriation by] economically more muscular organisations".[69] In practice though, the expense of patent litigation, a subject examined below, may thwart such a purpose.

(ii) The Economic Perspective

Economic arguments provide the strongest rationales for patents.[70] They are put forward largely without qualification in this section, but some are challenged in the following section.[71]

(a) The Provision of Reward and Incentive

In 1765, Blackstone identified the link between property, reward and incentive.[72] By purporting to guarantee the appropriation of any rewards flowing from successful commercialisation of an invention, patents may provide an incentive to engage in costly inventive activity.[73] Indeed they may be

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66 See, for example, *Patent Law* 1791 (France) preamble: "it would be a violation of the rights of man [*sic*] ... if an industrial invention were not regarded as the property of its owner". See also OH Taylor, "Economics and the Idea of *Jus Naturale*" (1929–30) 44 *Quarterly Journal of Economics* 205.

67 HI Dutton, *The Patent System and Inventive Activity During the Industrial Revolution 1750–1852*, Manchester University Press (1984) p 17. This was because "no inventor can ... have any natural right to prevent any other person from making and using the same ... invention": W Hindmarch, *Law and the Practice of Letters Patent for Invention*, (1848) p 228.

68 DP O'Brien, "Patents: An Economist's Perspective" in J Phillips (ed), *Patents in Perspective*, ESC Publishing (1985) 32 at 34.

69 *Ibid.*

70 C Arup, note 61 *supra*, p 66: "the argument for property is sometimes made in terms of ... natural rights ... [i]ncreasingly, however, when we examine ... patent law, we must say that its rationale is instrumental and economic". Similarly, the "primary function of patent legislation should be ... as an instrument of national economic policy aimed at the stimulation of ... innovation not as a means for giving effect to ... 'natural rights'": Senate Standing Committee on Science and the Environment, *Industrial Research and Development in Australia*, 1979 at 129.

71 For an unusual critique of the economic argument, see HM Spector, "An Outline of a Theory Justifying Intellectual and Industrial Property Rights" (1989) 8 *European Intellectual Property Review* 270 at 272: "the economic theory of property rights might ... allow the confiscation of the property of lazy individuals in favour of others who enjoy merely working and producing".

72 W Blackstone, *Commentaries on the Laws of England*, Professional Books (first published 1765, 15th ed, 1809) vol 2, pp 4, 7. See also JS Mill, *Principles of Political Economy with Some of Their Applications to Social Philosophy*, Penguin (1929 ed) p 933.

73 Under the *Patents Act* 1990 (Cth), s 13(1), "a patent gives the patentee the exclusive rights, during the term of the patent, to exploit the invention and to authorise another person to exploit the invention". The exclusive right is capable of assignment and devolution: s 13(2). "The term of a standard patent is 20 years from the date of the patent": s 67. Patents, of course, do not ensure successful commercialisation, which may involve substantial additional expense: E Kaufer, *The Economics of the Patent System*, Harwood Academic Publishers (1989) p 19. See also Industry Commission, *Research and Development*, note 63 *supra* at 609: "[t]here is a widely quoted 'rule-of-thumb' that for every dollar spent on research, $10 is needed for development and $100 for commercialisation". See also the discussion below on patents as prospects.

"indispensable in case a newly discovered technology is easily imitable".[74] Conversely, "if there exist communal rights to new ideas, incentives for developing such ideas will be lacking" since the benefits "will not be concentrated on their originators".[75] Moreover, inventive activity is technically and commercially risky and "any device which reduces that uncertainty will increase the willingness of firms to innovate".[76] In the presence of information asymmetries between inventors and funding sources (for example, secrecy of the former or technical naivety of the latter), the encouragement given to the latter to invest may be another argument for patents.[77]

(b) Dissemination of Knowledge

The mandatory disclosure accompanying patents provides another rationale for patents.[78] The innovator reaps the rewards from innovation and society obtains (external) benefits or 'spillovers' from the dissemination of knowledge,[79] which has characteristics of a 'public good' in that "repeated use does not exhaust" it,[80] nor diminish its value.[81]

(c) The Invention Protection Gap

A tangent to the knowledge dissemination argument relates to the gap between academic publication of research and any commercial application. Given the importance of prompt academic publication to knowledge diffusion, secrecy, available for industry research "until ... the technical and commercial efficacy of the invention has been established",[82] is not generally desirable in securing

74 S Muto, "Possibility of Relicensing and Patent Protection" (1987) 31 *European Economic Review* 927 at 927.

75 H Demsetz, note 29 *supra* at 359.

76 DP O'Brien, note 68 *supra* at 37.

77 However, "strategic considerations [for example,secrecy] may induce firms to actively *maintain* information asymmetries": CP Himmelberg and BC Petersen, "R&D and Internal Finance: A Panel Study of Small Firms in High-Tech Industries" (Federal Reserve Bank of Chicago, Research Department Working Paper No WP-91-25, 1991) at 3–4.

78 In Dutton's words, this rationale is the "exchange-for-secrets thesis": HI Dutton, note 67 *supra*, p 22.

79 For a quantification of the spillover benefits from R&D, see, for example, Bureau of Industry Economics Occasional Paper 18, *The Economics of Patents*, 1994 at 16; P Dempster, "Empirical Estimates of External Returns to Business Expenditure on R&D: An Introduction to the Literature" (Bureau of Industry Economics Working Paper No 91, 1994); Industry Commission, *Research and Development*, note 63 *supra* at Appendices QA and QB. Using patent data, Caballero and Jaffe have argued that spillover benefits from the 'average' invention have declined rapidly over the century: RJ Caballero and AB Jaffe, "How High are the Giants' Shoulders: An Empirical Assessment of Knowledge Spillovers and Creative Destruction in a Model of Economic Growth" (National Bureau of Economic Research Working Paper No 4370, 1993).

80 Organisation for Economic Co-operation and Development (OECD), *Competition Policy and Intellectual Property Rights*, 1989 at 12.

81 K Arrow, "Economic Welfare and the Allocation of Resources for Invention" in National Bureau of Economic Research, *The Rate and Direction of Inventive Activity: Economic and Social Factors*, Princeton University Press (1962) 609.

82 Office of the Chief Scientist, Department of the Prime Minister and Cabinet, Report Prepared by an Independent Working Group for Consideration by the Prime Minister's Science and Engineering Council at its Eighth Meeting, *The Role of Intellectual Property in Innovation*, 1993, vol 2 at 7.

potential *economic* gains from academic research. Patents may provide the necessary protection.

(d) Patents as Prospects

In the context of patents, a 'prospect' is a "particular opportunity to develop a known technological *possibility*".[83] This rationale views patents as conferring an exclusive right, not so much to reap the rewards of successful commercialisation of patented technology (for there may be none), but to *develop* the technology.

(e) A Business Tool

Patents can be used as a management tool to gauge the performance of researchers.[84] To the extent that patents encourage researchers to produce more patentable material, then this rationale is significant. However, inventions (and patents) differ in the effort required for realisation and importance of their potential applications. So it is submitted that this is neither a particularly compelling rationale, nor a sophisticated or irreplaceable performance measure.

A patent system may also reduce transaction costs and risks in contractual negotiations. For example, where an inventor holds a patent and a prospective licensee of the technology has access to the patent specification, agreement may be reached more rapidly and the technology developed sooner. Similarly, patents may act as signals to competing firms, "thus reducing the amount of duplicative investment in innovation".[85]

B. The Efficacy of and the Case Against Patents

The arguments in favour of patents have been summarised. The case against revolves around the conferral of exclusive or 'monopolistic' rights.[86] The anti-competitive effects of patents are examined in detail in Part IV, Section B. In this section, the theoretical rationales for patents are challenged.

(i) Empirical Evidence

Historically, patents have generally been regarded as important to invention and technological progress for the reasons expounded.[87] However, recent empirical research into the efficacy of patents is far from compelling.

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83 EW Kitch, "The Nature and Function of the Patent System" (1977) 20 *Journal of Law and Economics* 265 at 266 (emphasis added). Kitch has drawn a detailed analogy with the American mineral claim system for public land.

84 Indeed, in some firms, this is a substantial motivation for using patents: RC Levin, AK Klevorick, RR Nelson and SG Winter, "Appropriating the Returns from Industrial Research and Development" [1987] (3) *Brookings Papers on Economic Activity* 783 at 798.

85 EW Kitch, note 83 *supra* at 278.

86 The rights are only 'monopolistic' to the extent that substitutes for the invention are unavailable or not viable.

87 HI Dutton, note 67 *supra*, pp 17–29. There were always some objections though, perhaps more against patent abuse than the existence of the system itself. However, the Swiss and Dutch went so far as to abolish their systems in the 1860s: p 29.

In the 1960s, Grabowski found little support for the "hypothesis that more research-intensive firms tend to patent a greater proportion of patentable inventions".[88] Moreover, in 1976, 70 per cent of respondents to a Canadian survey on the effect of patents upon R&D decisions indicated that they had little or no effect.[89] Furthermore, in a major study commissioned by the National Science Foundation it was found that 85 per cent of respondents "could not recall ... where their development of a product or process had been stopped because of lack of legal protection".[90] Other overseas studies have also confirmed that most firms regard patents as ineffectual in the appropriation of adequate gains from innovation.[91]

Australian research has yielded similar findings.[92] Recent Australian Bureau of Statistics (ABS) surveys highlighted that of businesses involved in technological innovation, 60 per cent did not use patents and 77 per cent regarded them as unimportant in protecting product and process innovations.[93]

(ii) Reasons for Equivocal Evidence on Effectiveness of Patents

There are many reasons for investing in R&D and many factors influence the subsequent decision to patent. "Patent rights are ... assessed strategically ... and their delays, costs and conditions [are] set against their returns in a comparison with ... other strategies"[94] to protect invention. So perhaps the equivocal empirical evidence should not surprise. In this section, some of the reasons for the apparent lack of efficacy of patents in encouraging innovation are outlined.

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88 HG Grabowski, "The Determinants of Industrial Research and Development: A Study of the Chemical, Drug, and Petroleum Industries" (1968) 76 *Journal of Political Economy* 292 at 300.

89 "Patent Law Revision" (Canadian Department of Consumer and Corporate Affairs Working Paper, 1976) cited in W Pengilley, note 4 *supra* at 200.

90 R Dunford, "Is the Development of Technology Helped or Hindered by Patent Law - Can Antitrust Laws Provide the Solution?" (1986) 9 *UNSWLJ* 117 at 136.

91 RC Levin, "A New Look at the Patent System" (1986) 76 *American Economic Review* 199 at 200; RC Levin, AK Klevorick, RR Nelson and SG Winter, note 84 *supra* at 798.

92 See, for example, TD Mandeville, DM Lamberton and EJ Bishop, *Economic Effects of the Australian Patent System*, Australian Government Publishing Service (1982). But the incentive provided by patents is of some importance to small innovators: p 211.

93 ABS Catalogue No 8116.0, *Innovation in Australian Manufacturing*, 1995 at 35. For example, the top five private sector companies in Australia in terms of expenditure on R&D spent a total of $723 million on R&D in 1996–97. Assuming that R&D levels in these companies in previous years were at comparable levels and acknowledging that there is a lag between the 'completion' of research and applying for a patent, it is nevertheless surprising that these five companies applied for a total of just 44 patents in that period. In fact, omitting the contribution of one of those companies (with R&D spending of $195 million), which alone lodged 35 of the 44 applications, the remaining four companies lodged a total of only 9 patent applications: M Rogers and S Feeny, *The Innovation Scoreboard: An Analysis of the Innovative Activities of Large Australian Enterprises*, Melbourne Institute of Applied Economic and Social Research, The University of Melbourne (1998) pp 53, 65–7.

94 C Arup, note 61 *supra*, p 67.

(a) Secrecy and 'First-Mover' Advantages

Perhaps the most manifest reason for not using patents is the desire to maintain the competitive advantage of innovations through secrecy.[95] As the above ABS statistics indicated, this desire is particularly strong (and rational) for process innovations, with substantially fewer businesses regarding patents as necessary or desirable in protecting innovations for internal use.[96] Other legal regimes such as breach of confidence may apply.[97] Furthermore, the concern for secrecy is underscored by the statistic that over 60 per cent of businesses involved in technical innovation described being ahead of the market as very significant or crucial in protecting innovation.[98]

(b) 'Inventing Around' Patents

A related drawback is the "ease of inventing around patents"[99] once the technology has been disclosed. Indeed US firms have rated competitors' *legal* endeavours in 'inventing around' patents as the most significant limitation on patent efficacy.[100] The "wide proliferation of patents and the large number of possible technical combinations that can be used to obtain similar operational characteristics or satisfy similar consumer needs"[101] explain the ease of 'inventing around' and the difficulty of successfully prosecuting infringement.[102]

(c) The Effect of Industry and Technology on Patent Efficacy

The "patent system does not ... discriminate between industries"[103] but the propensity to patent varies considerably across industries.[104] Patents are particularly important or effective in protecting specialty chemical and

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95 "Secrecy is perhaps the most widely used method for the protection of intellectual property in industry": Bureau of Industry Economics, *The Economics of Patents*, note 79 *supra* at 8. See also MI Kamien and NL Schwartz, "Self-Financing of an R&D Project" (1978) 68(3) *American Economic Review* 252 at 252; RC Levin, AK Klevorick, RR Nelson and SG Winter, note 84 *supra*.

96 See also Bureau of Industry Economics, *The Economics of Patents*, note 79 *supra* at 24–5.

97 Kitch has proposed that "a legal system which has trade secrecy and a patent system will better serve the public welfare than a legal system with only trade secrecy": EW Kitch, note 83 *supra* at 275.

98 ABS, *Innovation in Australian Manufacturing*, note 93 *supra* at 35. Cf Office of the Chief Scientist, *The Role of Intellectual Property in Innovation*, note 82 *supra* at 43: "with the fast dissemination of information ... and teams of similarly educated creative people ... working on similar problems, secret working is becoming less of an option". Whilst this view reinforces the importance of being first to market, it would also seem to render secrecy *more* important, rather than less.

99 RJ Gilbert, "Patents, Sleeping Patents, and Entry Deterrence" in SC Salop (ed), *Strategy, Predation, and Antitrust Analysis*, Federal Trade Commission, Bureau of Economics, Bureau of Competition (1981) 205 at 246.

100 RC Levin, AK Klevorick, RR Nelson and SG Winter, note 84 *supra* at 803, Table 5.

101 Bureau of Industry Economics, *The Economics of Patents*, note 79 *supra* at 26.

102 Indeed in "most industries, patent infringement is rarely a significant barrier to entry": RJ Gilbert, note 99 *supra* at 225.

103 IPAC, *Patents, Innovation and Competition*, note 63 *supra* at 13.

104 See ABS Catalogue No 8104.0, *Research and Experimental Development: Business Enterprises, Australia 1992–93*, 1994 at 14.

pharmaceutical products.[105] In these sectors "it is easy to determine whether an allegedly infringing molecule is physically identical to a patented molecule"[106] so enforcement is more effective. Moreover, "[w]ithout patent protection, it frequently would [be] ... cheap (and quick) ... to determine the composition of a new drug and ... begin producing it".[107] By contrast, in most other industries, patents are less effective because the costs of imitation are not substantially increased by patent protection.

Furthermore, patents will generally be less significant in industries characterised by rapid-changing technologies. Where "product life cycles are very short ... the product runs its economic course before patent infringement poses a deterrent to competitors".[108] Indeed "the product could be obsolete before the patent grant is issued".[109]

(d) Costs of Maintenance and Enforcement

Another limitation to patent efficacy is the associated cost. The time and expense involved in the application process "can be a major cost for smaller companies, particularly ... [for] overseas patents".[110] The cost of enforcing (or defending) alleged infringements, patents being "licences to sue",[111] is even more onerous. Estimates in 1993 ranged from $20 000 to over $1 million.[112] To litigate in the US, "average costs per party ... appear to be in the order of US$2 million".[113]

(e) Patent Disclosures

One of the rationales for patents is the dissemination of knowledge. More than 30 million patent documents exist globally[114] which "constitute one of the largest repositories of technological information" and "much of [it] ... is not, or is only some years later, disclosed elsewhere".[115] Yet the evidence suggests that

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105 RC Levin, AK Klevorick, RR Nelson and SG Winter, note 84 *supra* at 797, Table 2; CT Taylor and ZA Silberston, *The Economic Impact of the Patent System: A Study of the British Experience*, Cambridge University Press (1973) p 231: "[n]o other major industry approaches pharmaceuticals in its degree of attachment to patent protection". In Australia, the chemical and drug industries account for only 12 per cent of business R&D expenditure but 30 per cent of patents sealed. However, the great majority of these patents are granted to non-resident patentees: S Ricketson, *Intellectual Property: Cases, Materials and Commentary*, Butterworths (1994) p 586.

106 RC Levin, AK Klevorick, RR Nelson and SG Winter, note 84 *supra* at 798. As Professor Paul Geroski noted, "patents work best when they deal with molecules": Industry Commission, *Research and Development*, note 63 *supra* at 182.

107 Bureau of Industry Economics, *The Economics of Patents*, note 79 *supra* at 29.

108 RJ Gilbert, note 99 *supra* at 246.

109 *Ibid* at 246–7.

110 Office of the Chief Scientist, *The Role of Intellectual Property in Innovation*, note 82 *supra* at 18. See also TD Mandeville, DM Lamberton and EJ Bishop, *Economic Effects*, note 92 *supra*, p 212.

111 This is apparently "a common quip in industry": WL Baldwin, *Market Power, Competition, and Antitrust Policy*, Irwin (1987) p 293.

112 Note 82 *supra* at 50, 73 (for a narrower estimate).

113 *Ibid* at 73.

114 Bureau of Industry Economics, *The Economics of Patents*, note 79 *supra* at 27.

115 IPAC, *Patents, Innovation and Competition*, note 63 *supra* at 53. Estimates of disclosure elsewhere of information contained in patents range as low as 10 per cent: at 53.

this store of knowledge is under-utilised by industry.[116] Patent disclosures are unimportant sources of ideas for technological innovation in 86 per cent of Australian business undertaking innovation and are very significant or crucial to only 3 per cent.[117] In fact, patent disclosures are overwhelmingly used in checking for potential infringement.[118] By contrast, patent searches are central to Japanese business strategy.[119] The "limited utilisation by Australian industry of this vast treasure of knowledge" probably reflects "lack of detailed disclosure in patent specifications about the practical know-how required to produce the invention".[120]

In summary, the rationales for patents, with the exception of several industries, are often not fulfilled in practice. However, whilst patents may generally not be very effective, Australia has assented to various international obligations.[121] Before concluding this part, the relevance of international issues is canvassed.

C. International Factors and Conclusion

It is often argued that Australia's patent system benefits non-residents more than residents; for example, excluding consideration of international effects, there is "little ... doubt that the benefit/cost ratio of the patent system ... is negative".[122] The oft-cited statistic is that more than 90 per cent of Australian patents are granted to non-residents.[123] However, the argument is invariably qualified: withdrawal from the international patent system would be politically infeasible and economically questionable.

If Australia were not party to the international regime, it may experience diminished foreign capital investment and technology transfer[124] and the "overseas sector has long been recognized as the major source of new technology".[125] But Australia would be able to import cheaper infringing products, manufacture infringing imitations and so on. However, Australian-owned patents may receive a corresponding lack of protection overseas at a time when Australians are filing more overseas patent applications and increasing

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116 Bureau of Industry Economics, *The Economics of Patents*, note 79 *supra* at 31–2. See also TD Mandeville, DM Lamberton and EJ Bishop, note 92 *supra*, p 211.

117 ABS, *Innovation in Australian Manufacturing*, note 93 *supra* at 33.

118 T Mandeville, D Lamberton and J Bishop, "The Use of Patent Information: The Economics of Disclosure" in IPAC, *The Economic Implications of Patents in Australia*, Australian Patent Office (1981) 271 at 277.

119 Economic Planning Advisory Council Paper No 47, *Competitiveness: The Policy Environment*, 1991 at 25.

120 Bureau of Industry Economics, *The Economics of Patents*, note 79 *supra* at 32.

121 For example, Paris Convention for the Protection of Industrial Property 1883; Patent Co-operation Treaty 1970.

122 TD Mandeville, DM Lamberton and EJ Bishop, note 92 *supra*, p 213.

123 Bureau of Industry Economics, *The Economics of Patents*, note 79 *supra* at 34; IPAC, *Patents, Innovation and Competition*, note 63 *supra* at 11; Industry Commission, *Research and Development*, note 63 *supra* at 115.

124 IPAC, *Patents, Innovation and Competition*, note 63 *supra* at 13.

125 TG Parry and JF Watson, "Technology Flows and Foreign Investment in the Australian Manufacturing Sector" (1979) 18 *Australian Economic Papers* 103 at 103.

technology exports.[126] Australia may also be subject to other retaliation by foreign governments or enterprises.

Most studies have concluded that the "costs and benefits ... of the patent system ... are quite modest" but "costs of unilateral abolition ... could ... be much larger".[127] So although patents may only "be an important factor in [R&D in] isolated cases",[128] it would be wiser in the national interest, to conform to international "peer pressure",[129] particularly since "intellectual property is squarely on the world trade agenda".[130]

IV. PATENTS V COMPETITION: INTERACTIONS AND RESOLUTION

The rationales for and effectiveness of patent and competition laws in isolation have been broadly examined. In this part, the interdependencies and conflicts between the (immediate) objectives of patent and competition laws are explored and a resolution proposed.

A. The Impact of Competition upon Innovation

The effects of competitive pressures upon patents and innovation have already been noted; for example in the discussion on secrecy and 'first-mover' advantages. This section expressly addresses the relationship between competition and innovation. The classic starting point is Schumpeter, who asserted that invention was more consonant with large, monopolistic enterprises.[131]

Schumpeter's hypothesis has two strands,[132] both of which have received some support in the literature.[133] The first relates to firm size. A larger (and

126 Office of the Chief Scientist, *The Role of Intellectual Property in Innovation*, note 82 *supra* at 38. In 1992, the only countries with more international patent applications, *on some measures*, were the US, Germany, United Kingdom, Japan, France and Sweden: at 63.

127 TD Mandeville, DM Lamberton and EJ Bishop, note 92 *supra*, p 213. See also Bureau of Industry Economics, *The Economics of Patents*, note 79 *supra* at 50; IPAC, *Patents, Innovation and Competition*, note 63 *supra* at 1; F Machlup, *An Economic Review of the Patent System*, US Government Printer (1958) p 80, cited in S Ricketson, note 105 *supra* at 549.

128 RJ Gilbert, note 99 *supra* at 246.

129 IPAC, *Patents, Innovation and Competition*, note 63 *supra* at 12.

130 C Arup, note 61 *supra*, p 95. The most prominent example of the importance of intellectual property in world trade is of course the Agreement on Trade-Related Aspects of Intellectual Property Rights (Annex 1C to the General Agreement on Tariffs and Trade: Multilateral Trade Negotiations Final Act Embodying the Results of the Uruguay Round of Trade Negotiations 15 April 1994) (1994) 33 ILM 1197.

131 JA Schumpeter, *Capitalism, Socialism and Democracy*, G Allen & Unwin (1943) p 106: large firms are the "most powerful engine of progress". This declaration spawned the "second largest body of empirical literature in the field of industrial organization": WM Cohen and RC Levin, "Empirical Studies of Innovation and Market Structure" in R Schmalensee and RD Willig (eds), *Handbook of Industrial Organisation*, North Holland (1989) vol 2, 1059 at 1060. The largest body of research is devoted to the relationship between market concentration and profitability.

132 However, Schumpeter himself did not clearly distinguish between the effects of the two: WL Baldwin, note 111 *supra*, p 267; FM Fisher, note 27 *supra*, p 173.

typically more diversified) entity can diversify innovative activities to hedge risk. A single innovation may have several unintended applications (that is, spillovers) or an unexpected innovation may find useful application within a large, diversified corporation.[134] Therefore larger firms may have greater R&D intensity.[135] Moreover, large firms face lower resource constraints with greater cash flow and lower borrowing costs for respectively financing R&D internally and externally.[136]

The second strand is that "the incentive to devote resources to R&D increases as the ability and speed of rivals to imitate new innovations declines".[137] So in strongly competitive agricultural markets, "where there are many producers of identical or similar goods, market conditions for private innovation" are unfavourable.[138] The greater the appropriability of rewards from innovation, the greater will be the resources devoted to innovation. This of course is a rationale for patents.

However, both strands of the hypothesis have also been disputed in empirical and theoretical research.[139] For example, with respect to the first strand, small firms may be less bureaucratic and hierarchical and more dynamic and attractive to creative personnel.[140] Flexibility may allow small firms to quickly capitalise on changes in market conditions which require innovation.[141] Perhaps small firms tend to be more specialised and focussed, and require high levels of innovation to remain competitive in their niche market. They may be more research intensive because small firms tend to be new, requiring high levels of technology to enter a market. With respect to the appropriability strand, Arrow and others have argued that entities in a competitive environment will have the greater motivation to innovate in order to survive and succeed.[142]

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133 See, for example, RE Caves *et al*, note 62 *supra*; J Lunn and S Martin, "Market Structure, Firm Structure, and Research and Development" (1986) 26 *Quarterly Review of Economics and Business* 31 at 41. They also noted however, that "the spur of competition" stimulates R&D, especially in high technology industries: at 41.

134 See, for example, WA McEachern and AA Romeo, "Stockholder Control, Uncertainty and the Allocation of Resources to Research and Development" (1978) 26 *Journal of Industrial Economics* 349 at 352.

135 R&D intensity is expenditure on innovation as a proportion of, for example, firm sales, assets, research personnel etc.

136 There is a preference for financing R&D from internal sources to preserve secrecy and also because of 'market myopia' or a general reluctance to fund uncertain R&D investments: BH Hall, "Investment and Research and Development at the Firm Level: Does the Source of Financing Matter?" (National Bureau of Economic Research Working Paper No 4096, 1992) at 3; CP Himmelberg and BC Petersen, note 77 *supra* at 3; MI Kamien and NL Schwartz, note 95 *supra* at 252.

137 JB Meisel and SA Lin, "The Impact of Market Structure on the Firm's Allocation of Resources to Research and Development" (1983) 23(4) *Quarterly Review of Economics and Business* 28 at 32.

138 Bureau of Industry Economics, *The Economics of Patents*, note 79 *supra* at 6.

139 See, for example, WL Baldwin, note 111 *supra*, p 277; WM Cohen, RC Levin and DC Mowery, "Firm size and R&D Intensity: A Re-Examination" (1987) 35 *Journal of Industrial Economics* 543 at 543; M Waterson and A Lopez, "The Determinants of Research and Development Intensity in the UK" (1983) 15 *Applied Economics* 379 at 388.

140 WL Baldwin, note 111 *supra*, p 270.

141 *Ibid.*

142 K Arrow, note 81 *supra* at 609–25. Cf H Demsetz, "Information and Efficiency: Another Viewpoint" (1969) 12 *Journal of Law and Economics* 1.

The effect of competition upon innovation is clearly debatable and the evidence mixed.[143] The effect may differ over time and between countries and industries. The existence of a non-linear relationship may provide another reconciliation. Starting from a highly competitive structure, as market power and appropriability increase, greater incentives for innovation may be provided. However, once particular levels of market power are reached, and this may differ between sectors and firms, complacency may induce waning motivation for risky invention.

Given that both competition and innovation are means of augmenting society's welfare, decision-makers must consider the possible effects of competition law not just upon competition, but also upon innovation.[144] The possibility of a non-linear relationship between appropriability and innovation should also be kept in mind.

B. The Impact of Patent Law and Innovation upon Competition

The various ways in which patents and innovation can affect competition are examined in this section.

(i) The Impact of Patents: Competitive and Anti-Competitive Possibilities

In some cases, patents no doubt encourage invention (and disclosure) and thereby further competition. But given their disputed efficacy, generally speaking, their "pro-competitive effects ... [are] not perhaps as convincing as is often assumed".[145] This conclusion is reinforced by the anti-competitive possibilities of patents, some of which are quite common.[146]

It was noted earlier that patents can confer 'monopolies'. Moreover, they can be used by "entrenched interests ... [to] retard technological advance" where their interests "do not ... coincide with those of the larger society".[147] The purpose of this section is not to reprise the discussion on the inefficiencies of monopoly but these should be borne in mind. Instead, specific anti-competitive

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143 FM Fisher, note 27 *supra*, p 174; D McTaggart, C Findlay and M Parkin, note 8 *supra*, p 286.

144 In the US, where the benefits of antitrust are viewed with caution, an "additional antitrust enforcement action" has been estimated to reduce "R&D as a percentage of industry net sales" by 3 per cent and 0.34 per cent in the current and following periods respectively: GM Miller, note 38 *supra*, p 91. But as Baxt noted, "much of the [US] work ... is not of direct relevance to an economy such as ours": Monash University Law School, *Report to the Industrial Property Advisory Committee* (1983) vol 2 at 18. This may be particularly true given the comparative success of competition law and its authorisation procedures in Australia.

145 W Pengilley, note 4 *supra* at 175.

146 TD Mandeville, DM Lamberton and EJ Bishop, note 92 *supra*, p 212: "[r]estrictive trade practices in patent licensing often occur." In the US, in the period 1890–1965, approximately 12.5 per cent of antitrust actions brought by the Department of Justice involved patents: DP O'Brien, note 68 *supra* at 39.

147 RK Merton, "Fluctuations in the Rate of Industrial Invention" (1934) 49 *Quarterly Journal of Economics* 454 at 466. For a possible example relating to the major oil companies and the development of solar power, see R Dunford, note 90 *supra* at 133: the "patent system has been seen as 'implicated' by critics who have interpreted the activities of the companies as, 'token commitment to solar development byond [*sic*] patent acquisition'" (citing RC Fellmeth, "Suppression and Other Antitrust Concerns" in JH Minan and WH Lawrence (eds), *Legal Aspects of Solar Energy*, Lexington Books (1981) 197 at 206).

and pro-competitive applications of the "exclusive rights ... to exploit the [patented] invention and to authorise another person to exploit the invention"[148] are provided.

(a) Patent Pooling and Accumulation

Patent 'pooling' describes agreements by two or more firms to 'share' patents. This may be pro-competitive. Where one firm holds a patent, and a second subsequently patents an improved innovation, which cannot be used without breaching the first patent, then the two firms may cross-license patents, creating a patent pool which perhaps enables both to compete against a dominant third competitor. However, such agreements may also be anti-competitive, for example, where prices on products produced from the patent pool are fixed, the agreement divides up the market between parties or where other (potential) competitors are excluded.[149]

Similarly, an enterprise or a group, may accumulate or consolidate patents "as a means of monopolizing the industry".[150] For example, a German study found that 43 per cent of "unused patents were held either to retain exclusive rights to a technology whose exploitation was delayed or to deny its use to competitors".[151] Further, the possession of such a patent 'portfolio' "may enable firms to ... create a patent pool" and in turn, institute implicit collusion or a cartel.[152]

(b) Refusals to License

A patentee may refuse to license a particular licensee because of concerns for example, that it may not promote a product well or provide sufficient after-sales service. Such refusals need not be anti-competitive. However, where there is a fear that licensees may better commercialise or market any products from a patent than the patentee itself, a refusal to licence may be anti-competitive. In fact, by licensing, patentees may receive "not more than a third to a half" of the benefits received by licensees from their use of the licensed patent.[153] But a refusal to license is generally the patentee's right,[154] although a refusal without agreement to unreasonably restrictive conditions for example, may be anti-competitive.

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148 *Patents Act* 1990 (Cth), s 13(1). The exclusive right is also capable of assignment and devolution: s 13(2).

149 For an economic analysis of the exclusion of competitors see, for example, HF Chang, "Patent Scope, Antitrust Policy, and Cumulative Innovation" (1995) 26 *Rand Journal of Economics* 34.

150 P Asch, note 4 *supra*, p 379. However, it may also accumulate patents through successful innovation.

151 RJ Gilbert, note 99 *supra* at 253. See also R Dunford, note 90 *supra* at 120–4 for other historical examples of patent 'consolidation' and patent 'blitzkrieg'.

152 DP O'Brien, note 68 *supra* at 35. Interestingly, Scherer found "no significant evidence of *disproportionate* patent accumulation in the more highly concentrated industries": FM Scherer, "The Propensity to Patent" (1983) 1 *International Journal of Industrial Organisation* 107 at 107 (emphasis added).

153 E Kaufer, note 73 *supra*, p 24. Kamien and Tauman have argued that "licensing by means of a fixed fee is superior to ... a royalty for both the inventor and customers": MI Kamien and Y Tauman, "Fees Versus Royalties and the Private Value of A Patent" (1986) 101 *Quarterly Journal of Economics* 471 at 471.

154 *Berkey Photo Inc v Eastman Kodak Co*, 603 F2nd 263, 287 (1979). See generally RA Klitzke, "Refusal to License: Monopolization Problems for Patent Owners" (1986) 65 *Oregon Law Review* 745.

A court may order that a patentee grant licences where the "reasonable requirements of the public ... have not been satisfied", the "patentee has given no satisfactory reason for failing to exploit the patent" and the "applicant has tried for a reasonable period ... to obtain ... authorisation ... on reasonable terms and conditions".[155] However, Baxt noted that such provisions, both in Australia and the United Kingdom, have had limited success.[156]

(c) Licensing, Lease and Sale Conditions

Many "licensing agreements can operate either to promote competition or to create a cartel".[157] For example, they may minimise development risks to the patentee or licence restrictions may ensure the quality control and reputation of particular products. An exclusive licence may provide the licensee with sufficient incentive to promote the patented product against competing products, thus increasing competition. Nevertheless, licensing, lease and sale conditions have anti-competitive potential. A few possibilities are explored.

The conditions of a patent licence may include full or third-line forcing; for example, the licence may be subject to a requirement to buy other products from the patentee or nominated parties.[158] The licensee may be required to use a particular (restrictive) mode of distribution for products using the patented invention.[159] The licensee may also be prevented from acquiring products from the patentee's competitors. Other conditions may purport to restrain the licensee's business even after expiry of the patent. The patentee may insist on grant-back licences, where access must be provided to any patented improvements to the original patentee's invention subsequently devised by the licensee. However, such patent pools may be pro-competitive, as discussed earlier. Where the patentee itself wants to commercialise a patent, a minimum price at which the licensee may sell such products, a maximum quantity the licensee may produce, or territorial or customer restraints may also be imposed to minimise competition. However, such restrictions can again be pro-competitive where they provide the licensee with appropriate motivation to develop and support the patentee's product in competition against rivals. Similarly, exclusive licences can both further or restrict competition.

Many of these conditions may breach the *TPA* or *Patents Act* but in some instances, such as those mentioned, or where "the licence would not be granted

155 *Patents Act* 1990 (Cth), s 133. The "reasonable requirements of the public" are defined in s 135.

156 Monash University Law School, note 144 *supra* at 50. See also JF Pickering, *Industrial Structure and Market Conduct*, Martin Robertson (1974) pp 83–4.

157 OECD, *Competition Policy and Intellectual Property Rights*, note 80 *supra* at 15.

158 For a critique of the allegedly anti-competitive quality and supposed need for prohibition of these 'tying' arrangements, see RI McEwin, "Third-line Forcing in Australia" (1994) 22 *Australian Business Law Review* 114; RD Blair and DL Kaserman, note 7 *supra*, pp 381–405; WS Bowman Jr, "Tying Arrangements and the Leverage Problem" in T Calvani and J Siegfried, *Economic Analysis and Antitrust Law*, Little Brown (2nd ed, 1988) 245; RA Posner, *Antitrust Law*, note 15 *supra*, pp 171–84. The paper returns to this issue in Part V, Section A.

159 For example, a "pharmaceutical patent licence may include a restraint that the licensee is to sell only in bottles of not more than fifty tablets": W Pengilley, note 4 *supra* at 125.

but for the 'restrictions'",[160] imposition of such conditions may have pro-competitive effects that need to be considered. This may be particularly so in the case of overseas technology, to which Australia would not otherwise have access.

(ii) Effect of Innovation upon Competition

Prior to proposing a balance between patent and competition laws, it is noted that innovation, even absent anti-competitive conduct, can profoundly influence market structure and competition. Schumpeter labelled this 'creative destruction': the innovation which "strikes not at the margins of the profits and ... outputs of ... firms but at their foundations and their very lives".[161] In essence, successful innovators may naturally grow more rapidly than their competitors and gain market share at their expense.[162]

C. A Proposed Resolution

It is now possible to crystallise the arguments and issues raised so far, by proposing in general terms, a resolution between competition and patent laws. In Australia, competition laws have been more successful in promoting competition than patents have been in fostering innovation. Indeed, international evidence indicates that the efficacy of patents in most industries is modest. It is submitted that any tension between competition and patent laws be resolved in favour of the former.

In order to improve the efficacy of the reward and incentive rationale for patents, the rights granted would need to be strengthened, for example by increasing the duration of the 'monopoly' and the scope of grants, to increase the difficulty of 'inventing around'.[163] However, this would have a negative impact upon competition and in any case may not be especially effective. The desire for secrecy and 'first-mover' advantages and the utilisation of other protection mechanisms would persist, particularly in some industries and for process innovations. To enhance the effectiveness of the knowledge dissemination rationale, more practical patent specifications would be required, but this would militate against any increased reward or incentive, particularly for process innovations. There is a "tension between the social goals of achieving efficient use of information ... and providing ... motivation for production of that information in the first place".[164]

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160 Trade Practices Commission, note 4 *supra* at 10.

161 JA Schumpeter, note 131 *supra*, p 84.

162 For a survey of the literature in this field, see, for example, note 111 *supra*, pp 285–7.

163 For an examination of the 'optimal' patent life see, for example, LM DeBrock, "Market Structure, Innovation, and Optimal Patent Life" (1985) 28 *Journal of Law and Economics* 223. For a discussion of the trade-off between patent term and scope, see, for example, R Gilbert and C Shapiro, "Optimal Patent Length and Breadth" (1990) 21 *Rand Journal of Economics* 106; P Klemperer, "How Broad Should the Scope of Patent Protection Be?" (1990) 21 *Rand Journal of Economics* 114.

164 Centre for International Economics, *The Role of Government in New Industry Development* (1993) cited in Industry Commission, *Research and Development*, note 63 *supra* at 183.

With respect to costs of maintenance and enforcement, whilst Australian reforms may be helpful in improving patent efficacy, without corresponding international efforts, particularly in the US, any reforms would be of limited utility and more beneficial to non-resident patent owners. Indeed, generally, the benefits of any unilateral reform directed at strengthening patent rights would flow by and large to non-residents, with little in the way of reciprocal rights for Australian patents overseas. From the consumer's perspective, additional patent protection may allow Australians to attain benefits from overseas innovations beyond those available under the present patent framework. However, the magnitude of the possible negative effects upon competition and welfare in Australia may exceed any such possible benefits.

Therefore it is not surprising that studies have concluded that it is not "in Australia's interest to pursue the protection of patent rights beyond accepted international norms".[165] However, this is not to say that competition and competition law should be dominant. Their effects upon innovation and economies for example, need to be considered and as noted, there is a significant role for patents in some industries. Moreover, Australia's international legal obligations and the possible negative ramifications for technology transfer to Australia in the absence of an internationally acceptable patent system must also be borne in mind. Therefore, noting the superior record of competition law, it is submitted that the balance be tipped in its favour.

V. *PATENTS ACT* AND *TRADE PRACTICES ACT*: APPLYING THE RESOLUTION

This part examines the interaction between the most important patent-competition law 'interface-provisions' in Australia, namely, s 144 of the *Patents Act* and s 51 of the *TPA*. The above resolution is applied and possible reforms are proposed.

A. *Patents Act* Section 144 and Reform

The purpose of s 144 is to avoid conditions in agreements granting patent rights, whether by sale, lease or licence, which impose particular ties on the grant. Section 144(1) essentially avoids provisions which have the effect of:

> (a) restricting the use by grantees of other (patented or unpatented) products or processes supplied or owned[166] by third parties; or

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165 Bureau of Industry Economics, *The Economic of Patents*, note 79 *supra* at 50. See also TD Mandeville, DM Lamberton and EJ Bishop, note 92 *supra*, p 213: "there is no economic justification for extending patent monopolies by lengthening the term, or by widening the grounds for either infringement, or patentability". For a quantification of the costs and benefits, see, for example, N Gruen, I Bruce and G Prior, "Extending Patent Life: Is it in Australia's Economic Interests?", *Industry Commission Staff Information Paper*, 1996.

166 In *Transfield Proprietary Limited v Arlo International Limited* (1979–1980) 144 CLR 83 (*Transfield v Arlo*), Stephen J questioned the "concept of an unpatented process being 'owned' by someone": at 93.

(b) requiring the grantee to purchase other goods (but not processes) from the grantor (or nominee).[167]

The avoidance provision does not apply where grantors can prove that grantees had the option of obtaining the patent rights on "reasonable terms without the condition" and grantees could relieve themselves of any such condition(s) upon giving three months' written notice and paying compensation.[168]

Section 144(1) has not been subject to judicial consideration, but its predecessor, s 112(1) of the *Patents Act* 1952 (Cth), which was similar in terms, was considered by the High Court in *Transfield v Arlo*.[169] For present purposes, the decision is significant for the (mild) support it provides for the exclusion of conditions prohibiting *sales* of third-party products or processes from the scope of s 144(1). In other words, 'selling' third party products and processes may not qualify as 'using' under the old s 112(1) and current s 144(1), so prohibitions on such sales may not be avoided by the *Patents Act*. Stephen J was of the view that when s 112 spoke of "a prohibition or restriction upon 'using'" products, it was "not concerned with their sale; but the reasoning ... rests *in part* upon a specific statutory provision",[170] s 112(7), which has no equivalent in s 144.[171] Mason J held that s 112(1) "would not *in any event* render void a term which prohibited" the grantee "from selling goods other than those of the patentee".[172]

Clearly s 144 only voids conditions imposing specific ties. Apart from the possible exclusion of prohibitions on third-party sales, conditions requiring purchase of other *processes* from the grantor are excluded from the terms of s 144, seemingly without good cause. Indeed, s 112 "has been consistently and narrowly interpreted and applied ... and so has been of little practical effect".[173] In any case, many of the potentially anti-competitive licensing conditions described earlier are not avoided by s 144 or proscribed by the *Patents Act*. It is submitted however, that such proscription should not be included in the *Patents Act* and the existing highly selective regulation of competition-related issues be removed for two reasons. Firstly, it would be more consistent, logical and transparent for the *TPA* framework to regulate all competition-related matters. This includes not only s 144, but also the earlier discussed compulsory licensing power.

A second and more important reason for removing such provisions from the *Patents Act*, is that the conditions avoided by s 144 for example, need not be anti-competitive. The "traditional objection to tying arrangements is that they enable a firm having a monopoly in one market to obtain a monopoly in a second

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167 *Patents Act* 1990 (Cth), s 144(1).

168 *Patents Act* 1990 (Cth), s 144(2).

169 Note 166 *supra*. The English equivalent has also been considered by English courts: see, for example, *Tool Metal Manufacturing Co Limited v Tungsten Electric Co Limited* (1955) 2 All ER 657 which considered s 38(1) of the *Patents and Designs Act* 1907 (UK).

170 Note 166 *supra* at 94 (emphasis added).

171 The relevant portion of s 112(7) provided that "[n]othing in this section: (a) affects a condition in a contract by which a person is prohibited from selling goods other than those of a particular person".

172 Note 166 *supra* at 100 (emphasis added).

173 IPAC, *Patents, Innovation and Competition*, note 63 *supra* at 27.

market".[174] However, there are many circumstances where such conduct may, but need not reduce competition. For example, two products may be tied for reasons of technological interdependence and use of an alternative to the tied product may "impair the operation or usefulness of the principal product".[175] Furthermore, if grants are conditional upon purchasing other products from the grantor, this may reduce the number of patent rights granted and hence overall revenues. So the motivations for imposing such ties and whether they are in fact anti-competitive in effect, must be considered. It is submitted that avoidance by the *Patents Act* leaves little scope for such consideration when contrasted with the comparatively flexible *TPA* and its authorisation and notification procedures.

B. *Trade Practices Act* Section 51 and Reform

The *TPA* grants limited exceptions to its Part IV restrictive trade practices provisions. Whilst s 51(1) explicitly provides that patents are not exempted from the operation of the *TPA*,[176] s 51(3) provides that with certain exceptions,[177] Part IV is not contravened by a condition of a licence or assignment granting patent rights "to the extent that the condition *relates to* ... the invention to which the patent ... relates or articles made by the use of that invention".[178]

The breadth of the exception obviously revolves around the interpretation of "relates to". The only Australian case which has considered the words in this context "does not provide a great deal of assistance".[179] In separate obiter statements, Mason and Wilson JJ were of the opinion that a clause which required a sub-licensee "at all times to use its best endeavours in ... [the] selling of ... and to energetically promote and develop the greatest possible market for" a product subject to a patent,[180] fell within the s 51(3) exception.[181] A submission that the clause did "not *only* relate to 'the invention' or to 'articles made by the use of that invention' ... [but related] to other products, that is, ... not using any" similar products, attributed "to the word 'relates' a meaning which is too narrow, thereby giving s 51(3) an overly restrictive operation".[182] However, Mason J also stated that "[c]onditions which seek to gain advantages collateral to the patent are not covered by s 51(3)".[183] But a condition which "relates to" an *invention* may be "collateral to" the *advantages conferred by a patent*, creating difficulties for the application of s 51(3).

By defining the boundaries of s 51(3) solely by reference to whether a condition "relates to" an invention or by reference to the rights conferred upon

174 RA Posner, *Antitrust Law*, note 15 *supra*, p 172.
175 WS Bowman Jr, "Tying Arrangements", note 158 *supra* at 253.
176 *Trade Practices Act* 1974 (Cth), s 51(1)(a).
177 Section 51(3) does not provide any exception to misuse of market power (ss 46 and 46A) or resale price maintenance (s 48).
178 *Trade Practices Act* 1974 (Cth), s 51(3)(a) (emphasis added).
179 Trade Practices Commission, note 4 *supra* at 13. See also Monash University Law School, note 144 *supra* at 22: "the decision is not very helpful."
180 *Transfield v Arlo*, note 166 *supra* at 100.
181 *Ibid* at 102, per Mason J; at 108, per Wilson J.
182 *Ibid* at 102, per Mason J (emphasis added).
183 *Ibid.*

patentees and what is or is not "collateral to" those rights, there is too much scope for judicial discretion. More significantly, given the relative inefficacy of patents, it would appear imprudent to exclude competition law and potentially anti-competitive conduct upon such a basis, to the exclusion of any consideration of anti-competitive effects. Of course, imposing a competition-related test upon the s 51(3) exception, depending on the strength of the test, may negate any exception, at least to those Part IV breaches with 'substantial lessening of competition' tests. Whilst this would perhaps be some improvement, an arguably better approach is outlined in the next section.

C. An Application of the Resolution and Further Reform Proposals

In one of the few relevant Australian statements on the patent-competition law interface,[184] Mason J commented that "in bridging the different policies of the *Patents Act* and the *Trade Practices Act*, s 51(3) recognizes that a patentee is justly entitled to impose conditions ... to protect the patentee's legal monopoly".[185] Various reports have suggested reforming the interface. Probably the most significant report, prepared by IPAC prior to enactment of the 1990 *Patents Act*, recommended that s 112 of the then *Patents Act* and s 51(3) of the *TPA* be repealed, with an amended *TPA* to regulate patent-related anti-competitive conduct.[186] For example, amendment of the Part IV per se prohibitions in their application to patent-related conduct was advocated. The per se prohibitions can be breached without demonstration of anti-competitive purpose, effect or likely effect. It was argued that patent-related conduct should instead be subject to a lessening of competition test.[187] The justification for excluding patents from particular per se provisions is that in certain circumstances, patent-related conduct falling within these provisions may not be anti-competitive.[188] However, the recommendations were not adopted, primarily because "a case for policy change" was not established and the thrust of the per se prohibitions would have been softened by excepting patent-related conduct.[189] There was also some concern regarding the possible effects upon innovation of strengthening the application of competition law.[190]

Nevertheless, it is submitted that the 'interface-provisions' be amended: first to render the application of laws within the interface more consistent and logical and secondly, and more importantly, to apply the proposed resolution of patent and competition laws and reflect the greater efficacy of the latter.

To address the desirability of consistency and logic, the competition-related conduct presently regulated by the *Patents Act* should be governed exclusively

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184 Although a copyright case, see also *Interstate Parcel Express Co Proprietary Limited v Time-Life International (Nederlands) BV* (1977) 138 CLR 534 at 559–62, per Murphy J.

185 *Transfield v Arlo*, note 166 *supra* at 102–3.

186 IPAC, *Patents, Innovation and Competition*, note 63 *supra* at 26. See also Monash University Law School, note 144 *supra* at 90, which was a report to IPAC.

187 IPAC, *Patents, Innovation and Competition*, note 63 *supra* at 26.

188 Similarly, non-patent-related conduct may also fall within the per se prohibitions, notwithstanding absence of anti-competitive effect, or even presence of pro-competitive effect.

189 C Arup, note 61 *supra*, p 189.

190 *Ibid.*

by the *TPA*. To address the second objective, patent-related conduct should be removed from the s 51(3) exception, and be subject to Part IV of the *TPA*. Patents "inherently have no more right to protection from anti-trust assault than has any other device by which market power is achieved".[191] However, with the exception of misuse of market power, which cannot be authorised or notified in any circumstances, authorisation and notification would remain available to parties concerned about potential Part IV breaches in patent-related conduct.[192] For the purposes of granting authorisations or determining the validity of notifications, an assessment of the net public benefit of otherwise possibly anti-competitive patent-related conduct would still be necessary. However, for the purpose of this assessment, it is proposed that an explicit requirement be inserted into the *TPA* to weigh the implications for innovation of allowing or disallowing such conduct.

Another amendment may also be desirable. Whilst it may be better to treat patent-related conduct in the same manner as other possibly anti-competitive conduct (notification for exclusive dealing and third-line forcing under s 47, and authorisation for all anti-competitive conduct, bar misuse of market power), two alternatives are proposed. First, that concerned parties only be allowed to seek authorisation, regardless of the nature of their patent-related conduct. Secondly, that concerned parties be allowed to notify the ACCC of any patent-related conduct, regardless of its nature. All three alternatives have associated administrative costs. These could be minimised by, for example, scheduling to the *TPA*, various standard form patent-related licensing conditions deemed acceptable in most cases, or for the 'average' invention. The ACCC could also publish guidelines it would apply in authorisation and notification decisions.[193] In this way, regardless of the approach adopted, the net benefits could be maximised.

These reforms and this application of the proposed resolution, for the reasons presented, are sufficient to overcome the concerns which prevented adoption of IPAC's recommendations. In particular, amending the 'interface-provisions' will provide a greater deterrent to future anti-competitive conduct. Moreover, there would be no softening of per se prohibitions. Furthermore, noting the empirical evidence on the general ineffectiveness of patents, concerns over the possible impact of such reforms upon innovation are overstated, particularly with the inclusion of an explicit requirement to consider such effects in authorisation and notification assessments. Most importantly, the reforms would create a balance more conducive to maximisation of social welfare.

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191 W Pengilley, note 4 *supra* at 177.

192 *Trade Practices Act* 1990 (Cth), Pt VII. Notification is only available for exclusive dealing, including third-line forcing (s 93), whilst authorisation is available for all forms of Part IV conduct, with the exception of misuse of market power (ss 46 and 46A): s 88.

193 For an interesting approach involving a 'black list' (proscription highly likely), 'grey list' (proscription possible) and 'white list' (proscription highly unlikely) of restrictive trade practices, see the Japanese Fair Trading Commission's 1989 "Guidelines for the Regulation of Unfair Trade Practices with respect to Patent and Know-how Licensing Agreements" set out in M Abell, "Japanese Anti-trust Law and Patent and Know-how Licensing" (1990) 11 *European Intellectual Property Review* 413.

VI. CONCLUSION

This paper examined the arguments for and against patents, competition and competition law and analysed the interaction between them. It was argued that competition was desirable and effectively promoted by competition law and that innovation, whilst critical, was generally not as well served by patent law. Strengthening patent rights would be unlikely to promote the overall national interest. On the other hand, international obligations require Australia to provide a base level of patent protection; failure to do so could incur substantial national harm. Therefore, any conflicting objectives and effects of competition and patent laws would best be resolved by tipping the balance towards the former. Finally, an application of the proposed resolution was provided, and reforms to the *Patents Act* and *TPA* were suggested.