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SUBMISSION TO THE

ADVISORY COUNCIL ON INTELLECTUAL PROPERTY

REVIEW OF PATENTABLE SUBJECT MATTER

BY THE

INTELLECTUAL PROPERTY RESEARCH INSTITUTE OF AUSTRALIA

Our organisation

The Intellectual Property Research Institute of Australia is a multi-disciplinary research body of the University of Melbourne. It includes 10 research fellows from economics, law and management and over a dozen research associates. Its mission is to conduct and disseminate research into the economics, management and law of intellectual property (IP).

IPRIA's research focuses on ways to improve the protection, management and exploitation of intellectual property by business, research institutions and other users of the IP system, and on supporting high quality policy development by government in areas relating to intellectual property. It seeks to use the outcomes of its research to create and contribute to healthy public debate on key issues relating to intellectual property.

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Question 1: Can placing limits on inherently patentable subject matter be justified on economic grounds?

Productivity can only be enhanced through an increase in the skills and capabilities of the workforce or through an improvement in the state of knowledge. Both skill development and knowledge creation are forms of investment. By committing resources and people to the task of educating, training and creating knowledge today, we are enhancing the well-being of people tomorrow.

There are well-established reasons why a market system will have difficulty achieving the optimal rate of knowledge creation. These related to the uncertainty, the long time horizon and the non-rivalrous nature of knowledge. To mitigate this market failure, most societies have instituted three basic systems: a system of R&D grants; an IP system and a system of innovation prizes. Each system has different strengths and weaknesses and most people would argue that they complement rather than substitute for each other. While grants provide *ex ante* finance and can be delivered strategically by a central body, the IP system provides *ex post* rewards and is directed by the democracy of the market. Prizes have the flexibility of providing (*ex post*) incentives to creation and can be directed towards either specific or unstipulated needs.

The main factor determining which basic system is most appropriate for which type of situation depends on the size and duration of what economists call 'deadweight losses'. Deadweight losses are the benefits forgone by people who cannot, or are not willing, to buy the innovative output at the IP-induced monopoly price but are prepared to pay at the cost-of-production price. For example, if the cost of producing an innovative product is $5 (excluding R&D costs) but a patent enables a price of $10 to be charged, then the deadweight loss represents the loss of benefits incurred by all the consumers who would be willing to pay between $5 and $10. In some cases, the

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deadweight loss represents the lost benefits because a follow-on creation has not been made.

If this deadweight loss is large, then the best way to encourage people to invent (or create) is through R&D grants or prizes and subsequently to make the new idea or knowledge freely available to all firms and consumers. If this deadweight loss is small, then using the IP system may be a more appropriate way to provide the incentive to invent (create). This highly simplified example serves to illustrate that it is the size of deadweight losses – brought about thought limits on the costless use of the new knowledge – which determines whether or not a given class of inventions should be brought under the IP system versus financed though grants or prizes. The type of technology, whether the knowledge or idea is embodied in a physical product, whether the knowledge applies to a manufacturing process, whether the creation involves treating humans or involves living organisms, whether the creation is technical in nature, are not relevant *per se*.

Economic theory however has little to say about whether patents are the most appropriate form of IP protection, compared with copyright, trade marks or designs. This is a practical question.

Whether firms opt to limit the free use of their creations through non-IP modes such as lead time or organizational know-how (p63 Issues paper) is irrelevant to the question of whether the IP system should be available for use. If economic theory deems that it is optimal for the incentive to create to be driven by the ability to charge monopoly prices (rather than grants or prizes) then there is no reason to restrict firms' ability to access either IP and non-IP modes of achieving a temporary monopoly position.

The main challenge for policy makers it to make economic theory workable. In general it is assumed that deadweight losses are greater:

1. The greater is the uncertainty of the follow-on uses from R&D (hence it is desirable to exclude abstract ideas and basic research)

2. For creations and ideas with more potential uses
3. The greater are the number of people who could potentially benefit from the output.
4. The lower are the costs of R&D or creation (hence it is desirable to exclude creations that are obvious to someone skilled in the art)

For 1, 2 or 3, the R&D should be financed through grants or prizes and the output dispersed as widely as is practical. For 4, the incentive to create does not require enhancement and neither grant, IP rights or prizes are warranted.

Note that these reasons bear little resemblance to Table 1 (p25 Issues paper) on the 'Fundamental bases for ...being considered unpatentable'.

Other than these cases there are no clear economic reasons for excluding creations from the IP system.

There is no inherent reason why creations relating to food or medicine should be excluded from the IP system (p21 Issues paper).

Exclusions for reasons of ethics, morality or national security lie outside the realm of economics.

The cost of IP application, examination and enforcement also constitute deadweight losses. These costs should be minimized, especially it they do not involve a trade-off with other benefits. The need to tailor applications to different jurisdictions most probably represents a deadweight loss. Accordingly, it is desirable that changes to Australian law increase rather than reduce international harmonization.

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Question 2 – What are the consequences on innovation of imposing or removing limits on patentable subject matter? Are you aware of any empirical data on such consequences?

There are several 'natural experiments' where a study can be performed on the effects of different treatment of subject matter.

The most notable example was when Italian law changed in 1982 to include pharmaceuticals as patentable subject matter. See 'Economic effects of strengthening pharmaceutical patent protection in Italy', FM Scherer and S Weisburst in Patents: Economics, Policy, and Measurement, 2005 (Edward Elgar).

There are possibly other papers on the effects on innovation of the different scope of patentable matter between the EU and USA (with respect to business methods, computer programs and biotechnology).

Question 6 – Does the content of current Australian law meet the objectives of the system? Are decision makers focusing on the appropriate principles?

We would like to make two points:

1. Terms such as 'manner of manufacture' and 'general inconvenience' do not capture the essence of the economic rationale for patenting, as expressed under Question 2 above. We do not believe these terms are useful: they carry with them a history of interpretation, which is not necessary consistent with the economic intent of the law; their common-day meaning implies a factory-based system of production; the term 'general inconvenience' is so loose it could apply to all restrictions on the use of knowledge; and it is archaic. We do not believe these terms make the patent law accessible to non-lawyers.

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2. There is little discussion in the law, or the commentary that attaches to the law, of the principles that underpin patent law (as opposed to discussion of the economic purposes of the law). One forthcoming publication[1] argues that patent law is simply an instrument to facilitate the normative precepts (considered to be "patents as incentive", "accountability", "accessibility" and "acceptance of risk"). These precepts are supported by three fundamental principles ("state power", "individual choice" and the fundamental importance of knowledge). These principles form the immutable base for the patent system whereas the precepts reflect the normative goals of the system. As a result, the detail of the law should map to the precepts. An example of this is the "general inconvenience" test. There is evidence to suggest that the original, 17th century, meaning of the test related to its impact on Stuart employment policy.[2] That is, the legal test, as it was, mapped to the normative position that patents should go to increasing employment in England.[3] These days, with the shift of the primary policy justification of patents to one centred on their role as incentive, the general inconvenience test has fallen out of practical use as other tests have been used, more effectively, to facilitate the incentive role of patents.[4] From this perspective then, the general inconvenience test, now, does not counter the

[1] C. Dent, 'An Exploration of the Principles, Precepts and Purposes that Provide Structure to the Patent System' [2008] *Intellectual Property Quarterly* 456.
[2] Sir Edward Coke considered, in his *Third Part of the Institutes of the Laws of England* that a patent was 'inconvenient' if it turned 'many men to idleness'. For a discussion of the role of the early patent system in late Tudor and early Stuart policy, see C. Dent, 'Patent Policy In Early Modern England: Jobs, Trade And Regulation' (2006) 10 *Legal History* 71.
[3] There are examples of patents not being granted where the invention would have put workers out of a job: ibid, at p 79.
[4] One reading of the operation of law, one based on the fundamental role of repetition in the perpetuation of law, suggests that it is more likely that a new legal test would be created than a previous test to be re-interpreted to fit a new normative framework. See, for example, C. Dent and I. Cook, 'Stare Decisis, Repetition and Understanding Common Law' (2007) 16 *Griffith Law Review* 131.

normative function of patents; however, it does not necessarily directly support that function either.

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