BOOK REVIEWS

Patents, Innovation and Competition in Australia *by the Industrial Property Advisory Committee*
(A report to the Hon. Barry Jones, Minister for Science and Technology, 29 August 1984) pp. 86.

The report of the Industrial Property Advisory Committee (IPAC) to the Australian Minister for Science and Technology is a document of international interest. Many countries, particularly small and developing countries, have stated that the patent systems in their countries are not serving their interests well. Few countries, however, have formally reviewed or studied their systems and proposed changes. The IPAC report does so for Australia. Its conclusions and recommendations will be of interest to other countries, although it is doubtful that other countries will find that the IPAC recommendations will resolve their concerns. There is, for that matter, some doubt that the IPAC report will resolve these concerns in Australia.

The IPAC commissioned four studies, the most important being *Economic Effects of the Australian Patent System.*[1] In addition, some 90 submissions from firms and groups in Australia were considered by the committee. The *Economic Effects* study was based in part on data from surveys of patent applicants, industrial firms and engineers and the reporting of these data is of interest.

The *Economic Effects* study concluded that "the benefit/cost ratio of the patent system in Australia is negative, or at the very best, in balance." It concluded that the benefits to the system were small and that patents were not an important determinant of domestic R&D activity (except for the small inventor). Patent information was seen as a relatively unimportant source of technological information. The study also concluded that "the majority of patents held by domestic firms are said to produce a return but the absence of a patent system would be unlikely to affect production significantly." The costs of the system include relatively high compliance costs, the distraction of resources from more useful activities, restrictive practices in patent licensing and the general monopoly distortions of patents.

The *Economic Effects* study then draws quite negative conclusions regarding the economic value of the present patent system. It argues that there are many parallels between patents and tariffs and comes close to suggesting that patents are a type of tariff. It notes that there are powerful defenders of patents just as there are for tariffs. It leaves the impression that the patent system exists for political rather than economic reasons. This negativism is not, however, translated into strongly stated recommendations for change and no new legal instruments are proposed. Instead, the study notes the costs of unilateral abolition of the patent system could be high. It states that "there is no economic justification for extending patent monopolies by lengthening the term, or by widening the grounds for either infringement or patentability (for example, plant variety rights or computer programs)". It further states that "there is considerable economic justification for policy action to reduce the negative effects of the patent system by stricter examination, by reducing the

length of term and scope of patent monopolies and by action to deal with undesirable restrictive practices in patent licensing."

This general sentiment was not broadly reflected in the IPAC's recommendations. The IPAC report recommends the continuation of the patent system and the continued participation in the international patent system. It recommends no change in the length of patent term and little if any change in patentability requirements. A minor strengthening of the Australian petty patent (allowing up to 3 claims) was recommended. These changes, or more accurately, lack of changes, are at odds with the *Economic Effects* study conclusion and gave rise to a dissenting statement by Professor D.M. Lamberton, a committee member. Lamberton states that the report "does not live up to its claim to have adapted an economic perspective" and that "a good opportunity to adjust an ancient institution to the current needs of the Australian economy has been missed."

This reviewer is in partial agreement with parts of the dissenting statement. It is relatively easy to agree that the recommendation strengthening the control over patent applications and litigation by licensed patent attorneys is in conflict with principles of efficiency and broad accessibility of the system to inventors. The recommendations dealing with the patent attorney profession appear likely to raise the costs of obtaining and litigating patents and make it more difficult for the small inventor to obtain patents. It is more difficult to judge whether the recommendations regarding the Trade Practices Act will reduce the alleged use of the patent system to achieve monopoly power beyond that granted exclusively by the patent. On balance they would seem to do so.

As regards the broader questions of reducing the patent term and proscribing and weakening the system generally, I do not think that the case has been made for this in the *Economic Effects* study. In reviewing the historical advocacy positions for patents, the study properly sets aside the 'natural-law' position as a basis for patent grants. Surely the foreign inventor does not have a natural law right to protect an invention in Australia. It is difficult to argue than an Australian inventor has such a natural right either. The 'monopoly-profit incentive' position and the 'exchange-for-secrets' position, however, can both provide a justification for domestic (but not foreign) patent protection. The *Economic Effects* study does not analyse these arguments thoroughly (or properly in this reviewer's judgment).

In keeping with most of the economic literature, the study places little credence in the exchange-for-secrets argument. Legal scholars place much more emphasis on the 'enabling disclosure' of inventions in patent documents. An enabling disclosure not only enables someone to produce or make the invention, but can enable or induce other inventions as well. Economists have long been concerned with restrictive practices and monopoly power in general industrial economic policies. Trade secrecy is clearly anti-competitive and is an important feature of industrial practices that seek to produce oligopolistic profits. The *Economic Effects* study stressed the fact that patent protection can sometimes reinforce anti-competitive behaviour. It failed to point out, however, that trade secrecy also reinforces anti-competitive behaviour. It is very possible that the pro-competitive effects of the reduction in secrecy brought about by a properly functioning patent system will outweigh the anti-competitive effects that might occur when patent monopoly rights are used to

reinforce oligopolistic practices. A properly functioning patent system, of course, is one which forces full information from inventors and is administered in such a way that patent owners cannot expand monopoly rights beyond the strictly defined invention on which the patent is based. The IPAC report itself can be faulted for not recommending stronger information requirements (recommendation 45). Full public disclosure of all licences, mortgages and interests in patents should be required.

The monopoly profit incentive argument is also not fully treated in the *Economic Effects* study. The study takes the position that a monopoly on the rights to an invention limits its use in an economically inefficient manner. This is true if a monopoly right is granted to an invention that would have existed in the absence of the patent incentive. If, however, the invention would not have existed in the absence of the monopoly right, the appropriate way to view the matter is to ask whether an economic gain to the economy accrues because the invention was made. If the invention would have existed in the absence of the patent, one should ask whether the patent monopoly with disclosure is a better or worse incentive than the trade secrecy or other incentive that encouraged it. In this light, the patent system is unlikely to have the low benefit/cost ratio attributed by the *Economic Effects* study unless Australia produces or would produce a large number of inventions without an economic incentive in the form of patent rights or potential industrial secrecy-based oligopoly rents. One of the arguments for a patent system versus an industrial secrecy system is that the patent system provides incentives to a broader range of potential investors. The industrial secrecy incentives are available only to potential inventors in fairly large industrial firms. Patent rights are, in principle, available to anyone. The findings of the *Economic Effects* study showing that small firms and individual inventors use the patent system are positive indicators of its worth. Australia should be seeking ways to tap the inventive energies of its population. The fact that a fair number of patents may be granted to 'crank' and 'vanity' inventors does not reflect poorly on the system as long as it is bringing into being inventions that would not otherwise be there. For inventions by individual inventors and inventors from small firms there is almost no question that a gain occurs to the Australian economy. This is so because there is little or no scope for the abuse of these patent monopoly rights by extending them beyond their borders.

In this connection the Australian experiment with a petty patent system will probably prove to be valuable, provided low cost access to petty patents is maintained and the incentives strengthened. Indeed, the case for strengthening the petty patent system is very strong. The case can be partly based on the argument that petty patents provide incentives to inventors that are unlikely to abuse their patent monopolies by strengthening other monopoly or oligopoly positions. It can also be based on the fact that a petty patent system is naturally suited to Australian as opposed to foreign inventors. Furthermore this natural bias favouring Australian inventors can probably be strengthened in a major way without placing Australia's position in the international patent system in jeopardy.

Australia's international role is important. Australia, in keeping with virtually all but a handful of large, highly industrialised countries in the world, is a net importer of invented technology. As a small country, it could hardly be

otherwise. However, in substantial contrast to the developing countries, Australia also exports a considerable amount of invented technology. Indeed, when we express technology exports on an appropriate base, and measure exports in terms of patents granted abroad per dollar of industrial domestic product, Australia is a leading export country. When measured in terms of technological competitiveness or other measures, the same conclusion holds, Australian export industries and direct technology exports are important. The IPAC report gave this fact considerably more weight than did the *Economic Effects* study. Both, however, concluded that Australia should not abandon the Paris Convention and risk retaliation by countries now importing technology from Australia.

Given the fact that Australia is both an exporter and importer of technology, and on balance a large net importer, it should be concerned with the impact of its legal system on its terms of trade. It will wish to purchase imported technology on the best possible terms and to export it on the best possible terms. The terms of the Paris Convention actually allow considerable scope for changing the Australian patent system to lower the cost of importing technology without altering the terms of exporting technology. The IPAC recommendations do not exploit this opportunity. Given its net import status, it is generally true that the higher the degree of Australian invention in most fields, the lower will be the rents that will accrue to owners of foreign produced technology. This will be true even though the foreign technology is 'superior' indigenous technology. An improvement in a domestic product will reduce or erode the rents that a superior foreign product will command. Of course, it is also the case that an improvement in a competing foreign product will reduce the rents paid by Australian consumers. In some technology fields, therefore, Australian invention itself may have little impact on these rents.

Australian invention that is adaptive in nature, i.e., that modifies foreign technology to make it more suited to Australian conditions, can be valuable even in technology fields where a high degree of competitive foreign invention is taking place. This adaptive invention can be stimulated by conventional patent protection, but petty patent protection is ideally suited to protect and encourage such invention. This is naturally the case because of the adaptive aspect of this invention. It can be furthered by provisions that novelty and obviousness be judged only against disclosures publicly available in Australia (IPAC recommendation 15).

The problem with the existing petty patent in Australia is that it is too weak. Even with recommended changes it is restricted to 3 claims and a term of 6 years. Australia could probably strengthen this petty patent by allowing more claims and expanding the term of protection, while continuing to bias it towards Australian inventors to the point where it provided almost as much protection as the standard patent without jeopardising its Paris Convention rights abroad. The case for doing so is economically compelling.

The *Economic Effects* study took the position that no expansion or strengthening of patent rights should be made. I strongly disagree with this position regarding petty patents. I also disagree regarding plant variety rights. Plant varieties, at least in the form protected by plant variety protection laws, are not very transferable internationally. They must be highly adapted to Australian soil and climate conditions. A plant variety rights act would tap the inventive energies of a large number of Australian inventors. The CSIRO and

other institutions in Australia's agricultural research system should continue to compete with private breeders to hold rents down. It is difficult to see how Australia could lose from a properly functioning plant variety rights system, provided that public sector institutions continue their research programs and compete vigorously with private firms.

For some reason, neither the *Economic Effects* study nor the IPAC report considered the option of introducing conditional renewal fee schedules for patents. The only issue discussed was the length of the term of protection. Yet, rising renewal fee schedules make a good deal of economic sense. They clarify the status of inventions in a concrete way and provide important public information. The holder of a patent may choose not to renew after, say, 8 years, conveying both information and opportunity to competitors. For valuable inventions, rising fee schedules can tax away some of the rents — constituting a kind of excess monopoly tax. This tax is clearly specified and not subject to the vagaries of compulsory licensing (Australia's handling of compulsory licensing appears to render that form of excess monopoly control ineffective anyway). Renewal fee schedules could be made conditional on working the invention in Australia. Renewal fees could be lower for early periods and then rise to significant levels — say 50,000 dollars or more by the end of the period for unworked inventions. (Conditionality on working the invention will allow Australia to provide unequal treatment to foreign inventions without doing so directly). Conditional renewal fees allow the policymaker more means to curtail excess monopoly gains and monopoly abuses. They can be low cost means to do so.

Professor Lamberton noted in his dissenting statement that the "IPAC report is not an imaginative one". I agree with this assessment. Committees seldom produce imaginative reports and committees dealing with legal systems are probably less liekly to do so than most. However, the economic literature on patents in general and the *Economic Effects* study in particular did not provide imaginative guidance to the committee. They provided little in the way of specific recommendations and pushed for weakening the system where possible and opposed all tendencies to strengthen any parts of the system.

This guidance was partly wrong from this reviewer's perspective. It was also vague. While agreeing with the assessment that the IPAC report was not imaginative, I would say that its recommendations, on the whole, were actually constructive. The report adapted much of the constructive advice offered by the *Economic Effects* study and resisted its general anti-patent thrust. Improvements in clarifying the relationship between patent law and competition law and in administrative matters, such as eliminating the possibilities for patent term extension, were made. The report was blemished by the recommendations that enhanced the personal and professional interests of the patent attorney profession. The economists associated with this effort and the economic profession in general, however, cannot lay the blame for a failure to achieve a more imaginative and constructive outcome of this review on the legal professionals. They have to shoulder much of that themselves for failing to provide more cogent policy analysis.

Robert E. Evenson
Economic Growth Center, Yale University

REFERENCES

1. T.D. Mandeville, D.M. Lamberton and E.J. Bishop, *Economic Effects of the Australian Patent System,* commissioned report to the Industrial Property Advisory Committee, 2 volumes, AGPS, Canberra, 1982.

The Future of Urban Form: The Impact of New Technology *edited by John Brotchie, Peter Newton, Peter Hall and Peter Nijkamp*
(Croom Helm, Kent and Sydney and Nichols Publishing Company, New York, 1985) pp. 374, $A44.50, ISBN 0-7-99-3255-3.

Less than a decade ago high technology and information technology were hardly household words and rarely a subject of national policy. Today commissions on technology, innovation and developments proliferate at all levels of government throughout the world. Despite a great deal of ignorance as to what the new technology is and what changes it will bring about, the concepts are seized upon as a panacea for all sorts of contemporary ills — slow economic growth, unemployment, and urban decline. Yet even the experts are baffled by the many contradictions inherent in the introduction of new technology. Current technical capability could rapidly accelerate the decentralising trend in urban agglomerations that has been occurring for several decades in Europe and the United States. At the same time, however, technology and innovation are facilitated by densities of commercial, production and marketing services, other information-based industries and the ease of personal contact — factors that would seem to favour urban locations. *The Future of Urban Form: The Impact of New Technology* is designed to stimulate our thinking about the ways in which new technology may influence urban development.

The 25 essays cover a wide spectrum of technological changes and their consequences for living and working in metropolitan areas. The authors — principally urban planners, but also scientists and economists — are concerned with the transition of post-industrial states to information-based societies. They speculate on the impact on national settlement systems of four changes: automation in manufacturing production, microprocessor and telecommunications in service and information sectors, energy prices and shortages, and the substitution of energy and vehicle technology.

The volume is a product of a workshop held in Waterloo, Canada in July 1983, sponsored by the International Council for Building Research Studies and Documentation. Of foremost concern was to discern the ways in which socio-technological changes are "altering space needs and locational requirements of industry and transport . . . as well as of individuals and families." Throughout, the authors' objectives are to describe major socio-technological changes — specifically those relating to the information revolution — and to predict their probable effects on urban configurations, relationships of land uses and densities.

The wide-ranging essays are clustered in nine different parts. The first two parts place the information revolution in an international context and examine