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The Patent Social Contract and the Duties of the Patent Office

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Introduction

Patent offices around the world have largely failed their publics. The argument for this comes in four parts. The first part shows how patent offices have progressively adopted a business model approach to their operations and made patent applicants their ‘clients’. Drawing on patent social contract theory, the second part of the paper argues that the true client of the patent office remains society. The third part derives some duties from the patent social contract that the patent office owes to the public, but with which the patent office has largely failed to comply. The last part of paper suggests that if the original promise under the patent social contract to the public is to be kept then regulatory reforms will be required. The genesis of such a reform is to be found in the construction of a counter governance network of outsiders. The nature of this counter governance network is briefly discussed.

1. Patent Offices – the Client Model

The functions of patent offices today are much the same as they were in the 19th century. They continue to process patent applications and register patents. As one would expect, patent offices have been part of organizational transformations and restructurings that have occurred in all governmental bureaucracies around the world. Broadly speaking, for some patent offices the result has been to achieve more independence. They have become independent governmental agencies, allowed to keep some or all of the fees that they collect rather than having to return those fees to general revenue. The Banks

Committee, which conducted a review of the British patent system that reported in 1970, noted that most patent offices around the world operated on the basis that the fees collected should more or less meet the cost of patent office services.¹ Federico in a 1954 survey showed that some offices were able to generate modest surpluses for their governments.² Many patent offices today would say that they continue to operate on a cost recovery basis, but because many of them have become self-funding their perception of what costs they have to recover has probably also changed.

How cost recovery is implemented through fee structure is another matter. In the case of the British PO, the Banks Committee pointed out that the strategy was to make entry into the patent system cheap (the application fee at that time was one pound) and recover the actual costs of searching and examining the patent application through annual renewal fees. Federico's 1954 survey showed that the system of annual patent fees was being used by most major patenting countries.³ The US and Canada were at the time of his survey the only two major patenting countries that did not have a system of patent renewal fees.⁴ At the time of the Banks Committee, renewal fees contributed about 66% of the costs of the British PO, with 19% coming from pre-grant fees.⁵

¹ The British Patent System: Report of the Committee to Examine the Patent System and Patent Law (Chairman M A L Banks Esq), Her Majesty's Stationery Office, London, 1970, 59.

² P. J. Federico, Renewal Fees and Other Patent Fees in Foreign Countries, 36 (1954), Journal of the Patent Office Society, 827, 848.

³ P. J. Federico, Renewal Fees and Other Patent Fees in Foreign Countries, 36 (1954), Journal of the Patent Office Society, 827

⁴ This has changed. The US began applying renewal fees to granted patents for applications filed on or after December 12 1980. See 35 USC 41(b). The Canadian PO also charges renewal fees.

⁵ The British Patent System: Report of the Committee to Examine the Patent System and Patent Law (Chairman M A L Banks Esq), Her Majesty's Stationery Office, London, 1970, 59.

It remains true today that renewal fees for patents remain the single most important source of income for patent offices. It is also true that patent offices keep the costs of entry into the system low and look to recover their costs of operation through their renewal stream of revenue. Most developed country offices have an initial application fee that does not fully cover their costs in processing an application for grant. They run with a fee structure of “backend loading” in which it will take a number of years to recover the cost of search and examination. It follows that under this kind of model POs have to ensure that a significant number of patent applications make it to grant, otherwise there will be not enough of a renewal stream of income. Patent searches and examinations that do not lead to grants represent losses for an office.

Another important fact that patent offices must contend with in terms of their business model is that many patent owners decide that a patent is not worth renewing. Patent renewal data is country specific. But one big trend is that many patents do not make it to full term. For example, in the US about 45% of patents are allowed to lapse in the second stage of renewal (the end of the 7th year) and in France the data shows that about 50% of patents do not make it to the tenth year.⁶ All patent offices have to take the rate of lack of renewal of patents into account. If they issue a small number patents, using, for example, a much more stringent test of inventiveness, they will have to contend with a lower income.

⁶ For the US see Stephen A. Merrill, Richard C. Levin, and Mark B. Myers, (eds), A patent system for the 21st century, National Academies Press, Washington, 2004, 31; and for France, see Mark Schankerman, How valuable is patent protection? Estimates by technology field, 29 (1998), Rand Journal of Economics, 77, 81-85.

There are economic arguments for using patent renewal fees much more robustly to provide incentives to firms that do R&D and to discourage those that do not from using the patent system.⁷ But the politics of patent fees for the time being trumps efficiency arguments. Patent offices do raise fees but since the 19th century the cost of patenting has fallen quite dramatically in real terms.⁸ Patent offices remain committed to the philosophy of cheap and easy entry into the system. This in turn has helped to produce large numbers of patent applications, with all the world's major offices having backlogs of patent applications in the hundreds of thousands. While patent offices will play around with using fees in an attempt to control, for example, the number of claims in a patent application, the use of very large fees as a regulatory instrument remains blocked by the strength of industry lobbies.

At the same time as patent offices have found ways to co-operate in order to solve their backlog problems, they also find themselves operating in an environment in which they are potential competitors. If the work of patent offices is broken up into three simple parts – (1) searching the patent and non-patent literature, (2) examining the patent application and then (3) granting and maintaining the patent, it is in the first two stages that we can see competition beginning to increase. The great volume of patent applications and grants in the world (about 1.66 million applications were filed worldwide in 2005⁹) has generated a demand for patent searching and so patent offices have developed search services that they offer on a commercial basis. A market in

⁷ Francesca Cornelli and Mark Schankerman, Patent Renewals and R&D Incentives, 30 (1999), RAND Journal of Economics, 197.

⁸ See P. Drahos, 'Patent Reform for Innovation and Risk Management: A Separation of Powers Approach', 1 (2007) Knowledge Ecology Studies 1.

⁹ WIPO Patent Report 2007, WIPO, Geneva, 10.

examination services is also emerging. For example, some countries, Singapore being an example, have decided to outsource the examination of patents to other offices. In Singapore's case, the patent offices of Australia, Austria and Denmark have taken on this work. For the Singaporean office the use of these three offices provides some price competition, especially since there are other offices to which Singapore can outsource. Similarly, some of the co-operative measures that are being put in place by offices to help them deal with workload problems may well end up creating a common platform on which they will have to compete. For example, under the PCT an international application has to be processed by an International Searching Authority (ISA), which is usually a national patent office that has been granted this status.¹⁰ More than one ISA may be competent to do the work in relation to an international application that is received by a national patent office acting as a receiving office under the PCT system because the receiving office has agreed to more than one ISA being able to search and examine that international application. For example, US citizens and residents can elect to use the Korean Intellectual Property Office (KIPO) as an ISA for PCT applications filed in the USPTO. Given the backlog in the USPTO this kind of co-operative arrangement makes sense, but it also shows that the PCT framework offers the basis for more direct competition amongst patent offices that are ISAs. Under present arrangements the ISAs fix and keep the search fee they charge for their search services under the PCT.¹¹ For 2009, the search fee ranged from around US\$250 to about \$US2100.¹²

¹⁰ Article 16 of the PCT.

¹¹ See paragraph 197 of the PCT Applicant's Guide available at <http://www.wipo.int/pct/en/>.

¹² See the PCT Fees Table at <http://www.wipo.int/export/sites/www/pct/en/fees.pdf>.

Worth noting at this point is that it is not only patent offices that make their living from administering the patent system. The PCT is administered by the International Bureau and under the PCT this means the International Bureau of WIPO.¹³ Under the PCT fee system, the international filing fee goes to the International Bureau (1330 Swiss Francs in 2009).¹⁴ If one looks at WIPOs' income from its various registration systems for 1998 to 2005 its PCT income accounts for about 70% of its total income.¹⁵ WIPO is not just a crucial pro patent ideological node in the international patent framework. It is also a wealthy node, one from which developing country patent offices seek resources.

Market pressures on patent offices are only just beginning to emerge. A truly competitive system will emerge when all the world's major patent offices agree to the principle of mutual recognition when it comes to grant. This would mean that a granted patent in one office would be recognized by other offices in relation to applications for the same invention. Mutual recognition is a principle for which some European patent offices in particular have very little enthusiasm. The danger is that the principle might turn patent offices into re-registration offices, the substantive decision about grant being made offshore. For the time being, offices are focussed more on finding ways to exploit each other's work without binding themselves to the results of that work. The upshot is that state sovereignty continues to constrain the filing strategies of patent applicants.

Some states for reasons of national security create special procedures around the filing

¹³ See Article 2 of the PCT.

¹⁴ See paragraph 197 of the PCT Applicant's Guide available at <http://www.wipo.int/pct/en/>.

¹⁵ The annual reports for this period are available from WIPO at <http://www.wipo.int/about-wipo/en/report.html>

abroad of applications on technologies that have been first invented in their territories or invented by their citizens.¹⁶

For the time being, patent offices do not operate as direct competitors in a market. The territorial nature of patent law, its procedural complexities create too many distortions to direct competition. Even if patent offices are not, at least for the time being, direct competitors, they are adopting a market rationality about their operations. The public service of all western states has since the 1980s been the subject of seemingly endless cycles of reform by governments using the tools of “privatization, marketization, managerialism, decentralization and agentification”.¹⁷ One effect is that market rationalities are to be found everywhere in the public service of all western states and increasingly non-western states, including patent offices.¹⁸ A market rationality was perhaps more likely to take hold in patent offices than in other parts of the public service as patent offices, since their emergence in the 19th century, have always provided a highly specialized service to a clearly identifiable group for a fee. The principle of fee for service has always been practised by states in the context of patents. The debates that have existed from time to time have been over the level of fees, who should keep the fees and the cross subsidies that should be met from those fees.

¹⁶ The US has a foreign filing license scheme with civil and criminal sanctions attached if applicants for foreign patents fail to obtain a license from the USPTO for an invention that was made in the US. See Article 20 and 35 U.S.C. 184. The USPTO generates foreign filing permission through its official receipt of filing system. India also has a foreign filing procedure. See section 39 of the Indian Patents Act.

¹⁷ Tony Butcher, ‘Modernizing civil services: an era of reform’ in Tony Butcher and Andrew Massey (eds) *Modernizing Civil Services*, Edward Elgar, Cheltenham, UK, 2003, 1.

¹⁸ See generally Donald F. Kettl, *The Global Public Management Revolution: A Report on the Transformation of Governance*, Brookings Institution Press, Washington, D.C. 2000.

The ideological fashions of public service reform have left two linked cultural marks on patent offices in western states. The first is that patent offices today, like many other parts of the public service, operate with a client focus. Adopting a client focus has become one of the major features of public service professionalism in OECD countries over the last couple of decades.¹⁹ Seeing applicants for patent monopolies as clients leads naturally to a focus on matters like the quality of the service to the client, the responsiveness of the service provider to the needs/demands of the client, the efficiency of the service, the price of the service. In order to improve service quality, governments have encouraged the transfer of private management technologies into the public sector.²⁰ Patent offices were always likely to be happy hunting grounds for the new public sector managerialists because the work of examiners in processing the stages of a patent application easily lends itself to measurement and quantification and therefore to quotas, and targets. In all the major patent offices today performance measurement is a basic tool of management along with some performance reward schemes. Patent offices rush to adopt systems of performance management like the Balanced Scorecard system. This private sector management ideology drives out of patent offices a sense of their public responsibilities under the patent social contract.

Along with the introduction of management techniques patent offices, have also followed another broad trend in public service reform in which governments have created semi-autonomous agencies to implement policy. During Thatcher's reign in the UK some

¹⁹ David Shand and Morten Arnberg. Background Paper, in *Responsive Government: Service Quality Initiatives*, OECD, Paris, 1996, 15, 19.

²⁰ Tony Butcher, 'Modernizing civil services: an era of reform' in Tony Butcher and Andrew Massey (eds) *Modernizing Civil Services*, Edward Elgar, Cheltenham, UK, 2003, 1, 6.

bureaucracies were turned into agencies and allowed greater control over resources in exchange for agreeing to meet specified outputs.²¹ In the US, the Clinton-Gore Administration created a long wave of reform of government administration through its National Performance Review of 1993 in which Gore promised government that “works better and costs less”.²² This, as the report made clear, meant becoming more like a business.

Over time the patent offices in many western states as well as developing countries have assumed agency status with greater control over their own budgets. IP Australia, which has responsibility for patents, is an independent agency that reports directly to the Minister of the Department of Innovation, Industry, Science and Research. The USPTO is a federal agency within the Department of Commerce that since 1991 is fully fee funded. In 2005 a report of the National Academy of Public Administration, after observing that the USPTO must be able to function like a business, recommended that it be turned into a wholly owned government corporation.²³ The UK PO is an Executive Agency of the Department of Innovation, Universities and Skills (DIUS). Financially, it operates as a Trading Fund and has to meet its future investments from its fee income. The quote from one of its annual reports below captures what is true of many patent offices in western states – they have become businesses with a need to manage all the risks of business:

²¹ Donald F. Kettl, *The Global Public Management Revolution: A Report on the Transformation of Governance*, Brookings Institution Press, Washington, D.C. 2000, 13.

²² See *From Red Tape to Results: Creating a Government that Works Better and Costs Less*. <http://www.ibiblio.org/npr/npintro.html>.

²³ US Patent and Trademark Office: *Transforming To Meet the Challenges of the 21st Century*, Report of the National Academy of Public Administration, August 2005, xviii.

As the Patent Office is entirely dependent on customers and stakeholder demand we cannot be complacent about our income and must continually look to add value for our customers.²⁴

Patent offices generally in Europe are placing more emphasis on developing commercial services such as the low cost fast search service provided by the Austrian PO. The sub-contracting of work by one PO to another, something we noted above, is also part of the patent office business in Europe. The Danish PO, for example, does work for the UK PO as well as for Iceland and Turkey.²⁵ Patent offices also seek the insignia of modern business enterprise, the most notable being certification to the standards of the International Standards Organization.²⁶ The autonomous fee dependent model of patent office administration is also being transferred to developing countries. They receive help from outside players like the WIPO and the EPO in building the case within their own countries for budgetary autonomy.

Summing up, patent offices have emerged out of decades of public sector reform as client oriented, corporately managed and relatively autonomous agencies. Developing country patent offices which have developed close ties with developed country patent offices are also being encouraged to transform themselves into more business-like operations.

²⁴ UK Patent Office, Annual Report and Accounts 2005-2006, 12. www.ipo.gov.uk/about-anrep0506.pdf

²⁵ See <http://int.dkpto.dk/partnerships/contract-partnership/turkey.aspx>

²⁶ For examples of how patent offices advertise their ISO status see for the Danish PO <http://int.dkpto.dk/Business-policy/iso-certified.aspx> and for the UK PO <http://www.ipo.gov.uk/about/about-ourorg/about-awards/about-awards-iso.htm>.

If one had to state the aim of all this reform in short form then the Gore slogan of government that works better and costs less is one phrase. Essentially it was about improving the efficiency and effectiveness of government. These are highly general goals and lead onto other more contextual questions for any public service organization concerning what kinds of efficiencies and effectiveness in what ways. In the case of the customer service statements of patent offices, the goals of patent offices revolve around the faster processing and grant of patents. The UK PO for instance for 2007-2008 described its agency goals for patents in the following way:²⁷

- Issue 90% of patent search reports within 4 months of request.
- Grant 90% of patents within 2½ years of request.
- Give good customer service in patent search and examination in 95% of quality assured cases.

For the UK PO a customer focus means improving the speed and quality of its service to patent applicants. Other POs take the same view. The Eurasian PO, the membership of which makes up the majority of the republics of the former USSR, has the same customer credo as the UK PO.²⁸ In fact one would struggle to find an office in either developed or developing countries that did not define the broad goals of contributing to economic improvement, efficiency and responsiveness in terms of granting patents to applicants as quickly as possible. Patent offices continue to set new targets promising their customers cheaper and faster patent examination, doing whatever is necessary to improve the

²⁷ <http://www.ipo.gov.uk/about/about-ourperform/about-target.htm>.

²⁸ See its 2007 Annual Report, 4, available at <http://www.eapo.org/eng/reports/>.

productivity of their examiners.²⁹ The relative autonomy that they have gained has been used by a number of them to engage in services innovation with their corporate clients as the intended beneficiaries of those services.³⁰

The client credo that has swept through public administration has not been an end in itself, but along with other reforms has been an instrument to improve services to citizens.

Citizens in the role of customers will be better off as citizens if agencies of the state treat them as customers. Initiatives like the UK Citizen's Charter programme in 1991 were aimed at giving citizens more control. Whether in fact things have worked out better for citizens in the role of citizens qua customers is a complicated empirical and conceptual question with comparatively few studies searching for an answer.³¹ Simple measurement approaches based on speed of response by an agency will not capture the public good dimensions of decision-making by agencies. When, for example, courts and tribunals hand down decisions in individual cases, those decisions have effects beyond the individual case and so the substantive quality of the decision itself becomes relevant to an assessment of an agency's performance. Assessing the quality of an agency's work is more difficult than measuring its response time. Simply measuring client satisfaction with decision-making may itself not necessarily point to a high level of substantive quality in decision-making. For example, tax tribunals that hand down decisions

²⁹ See, for example, the targets the Japanese PO promised in its Annual Report, 2006, 32-33.

³⁰ The literature on private sector service innovation helps to explain what is happening to patent offices. See Joe Tidd and Frank M. Hull (eds.), *Service Innovation: Organizational Responses to Technological Opportunities & Market Imperatives*, Imperial College Press, London, 2003.

³¹ For an exception see Eran Vigoda, *Are You Being Served? The Responsiveness of Public Administration to Citizen's Demands: An Empirical Examination in Israel*, 78 (2000) *Public Administration*, 165.

favourable to tax evaders may win a lot of acclaim from their clients, but will not be serving the interests of citizens in avoiding the degradation of the state's fiscal base.

Ultimately, an assessment of the quality of an agency's decision-making has to be linked to the distinctive public good mission for which that agency has responsibility. This in turn requires an understanding of the traditional public values by which the agency is meant to be guided and a contextual understanding of the way in which it delivers public goods. Governments may and do create new regulatory agencies, but those agencies for most part are new organizations that serve to improve the operation of existing institutions and their guiding values. By way of example, contract is an old institution for which states have created new regulatory organizations such as consumer agencies. The rise of regulatory capitalism has been as much about a transformation and engineering of organizations to serve long established institutions as it has been about new institutions and new values. When it comes to analysing the public good mission of patent offices the starting point is the patent social contract, an argument developed in the next two sections.

2. Disclosure and Social Value: Two Versions of the Patent Social Contract

Machlup and Penrose in an important article identified four 19th century justifications for the creation of the patent institution.³² These were the view that inventors had natural

³² Fritz Machlup and Edith Penrose, The Patent Controversy in the Nineteenth Century, 10 (1950) *Journal of Economic History*, 1.

property rights in their inventive ideas, that the concept of justice required that inventors be awarded patents, that patents are a necessary incentive for invention and the patent system is a social contract in which society induces the inventor to make public for the use of others what he might have otherwise have kept secret by offering him a monopoly for a limited period of time. All of these justifications, as Machlup and Penrose showed, had serious problems. Today's discussions of the justification for patent systems revolve around the same basic issues that Machlup and Penrose identified, except that we have more empirical work and evidence concerning the operation of national patent systems.

Four basic objections were put forward against the patent social contract justification.

The collective nature of invention meant that even if one inventor did not disclose the invention the same invention would eventually be disclosed by others who were working in the same area in parallel. Merton's account of the phenomenon of double discovery in the history of science in which many important scientific discoveries have been discovered by investigators working independently provides some empirical substantiation for this argument.³³ A second counter-argument based itself on the likelihood of secrets not going on forever. Competitors in the market place would break down walls of secrecy surrounding an invention. It would eventually leak out (through employee mobility) or be found out. A third objection was that if secrecy was a genuine alternative form of protection (ie reverse engineering was not easy or was impossible) then the rational inventor would rely on secrecy since it could last longer than a patent.

Why make public something that others were unlikely to find out? From the point of

³³ R. K. Merton, 'Singletons and Multiples in Scientific Discovery', 105 (1961) Proceedings of the American Philosophical Society, 470.

view of society, why offer monopolies for invention information when rational inventors would only disclose information that society would have eventually obtained anyway through processes such as reverse engineering? Finally, if disclosure was the aim one would be better off without a patent system. In the absence of patents more emphasis would be placed on status/reputational rewards that came from inventors disclosing their achievement to the world at large. The success of the open source movement in generating innovative software is an example that supports this line of reasoning.³⁴

Essentially these 19th century objections identified by Machlup and Penrose to the patent social contract justification remain valid today. Trade secrets are used by many companies in preference to patents, the disclosure that occurs through the patent system is limited in important ways and there is not much evidence that scientific communities read patents for their scientific value.³⁵ This does raise the question of why we should use the patent social contract justification to develop a normative account of what society might expect from its patent office. Some writers have argued that the patent social contract is too indeterminate for the purposes of normative and empirical analysis.³⁶

³⁴ For an account of how status and reputational norms help to generate innovation see Janet Hope, *Biobazaar: the Open Source Revolution and Biotechnology*, Harvard University Press, Cambridge, Mass., London, England, 2008.

³⁵ For a recent discussion of these problems see 'The Disclosure Function Of The Patent System (Or Lack Thereof)', 118 (2008) *Harvard Law Review*, 2007. For a discussion of surveys showing that many firms prefer to rely on first entry advantages and secrecy see David Encaoua, Dominique Guellec, Catalina Martinez, 'Patent systems for encouraging innovation: Lessons from economic analysis', 35 (2006) *Research Policy*, 1423. In a survey of 1478 R&D Labs in the US, Cohen, Nelson and Walsh found that secrecy, lead time and complementary capabilities were the major mechanisms of appropriation, with secrecy being a very important mechanism. Patents were seen as a less important mechanism. Wesley M. Cohen, Richard R. Nelson, and John P. Walsh, 'Protecting Their Intellectual Assets: Appropriability Conditions And Why U.S. Manufacturing Firms Patent (Or Not)', NBER Working Paper Series, Working Paper 7552, 2000.

³⁶ Shubha Gosh takes the view that the patent social contract is indeterminate and provides a poor basis for understanding the patent system. See, Shubha Ghosh, 'Patents and the Regulatory State: Rethinking the Patent Bargain Metaphor After Eldred', 19 (2004) *Berkeley Technology Law Journal*, 1315. Using the

The answer to this question has a Burkean quality about it in that it pays attention to the traditional institutional practice of Anglo-American courts when it has come to interpreting and developing patent law. Of the four justifications that might be advanced for the patent system, the patent social contract justification has, within the Anglo-American tradition, become over time the one to which the courts have most often turned.³⁷ In the modern version of this contract the emphasis is on a specific act of disclosure by the inventor in exchange for the grant of the patent monopoly. Disclosure is, the courts say, the ‘consideration’ or ‘quid pro quo’ for the grant.³⁸ The increasing use in the 19th century by the courts of the language of contract to describe the disclosure obligations of the patentee is readily understandable as this was also the century in which the rise and refinement of a classical contract law based on the doctrine of consideration took place.³⁹ The rise in influence of private contract law made it a natural resource for analogous reasoning when it came to considering the patent social contract. During the 19th century the courts in the UK and the US turned the patent application document into an increasingly complex legal document in which applicants used ever more sophisticated claiming language to settle the terms of the grant.⁴⁰ What might be termed the ‘disclosure’ conception of the patent social contract was clearly established by the

assurance game he argues that the role of the patent system is to generate trust and reciprocity. This is true, but it does not provide a justification for accepting the framework of obligations that the patent system creates and in relation to which trust and reciprocity are to evolve.

³⁷ On the influence of the patent social contract idea in US law see, Shubha Ghosh, ‘Patents and the Regulatory State: Rethinking the Patent Bargain Metaphor After Eldred’, 19 (2004) *Berkeley Technology Law Journal*, 1315.

³⁸ See, for example, *British United Shoe Machinery Co Ltd v A Fussel & Sons* (1908) 25 RPC 613, 649 and *LizardTech, Inc. v. Earth Res. Mapping, Inc.*, 433 F.3d 1373, 1375 (Fed. Cir. 2006).

³⁹ Hugh Collins, *The Law of Contract*, Weidenfeld and Nicolson, London, 1986, 25.

⁴⁰ For the history see Karl B. Lutz, ‘Evolution of the Claims of U.S. Patents’, 20 (1938) *Journal of the Patent Office Society*, 134 and David J. Brennan, ‘The Evolution of English Patent Claims As Property Definers’ 2005 4 *Intellectual Property Quarterly*, 361.

beginning of the 20th century. Today, TRIPS has globalized the disclosure obligation, making it mandatory for WTO members to require an applicant to disclose the invention.⁴¹

The rather narrow emphasis on disclosure in the modern patent social contract makes it easy to dismiss as a justification for the patent institution for all the reasons that Machlup and Penrose identify and subsequent work has confirmed. Disclosure rules, like so many parts of the patent system, have become the subject of relentless gaming by corporations. Consider what Justice Mayer (dissenting) said about the US standard of disclosure, a standard that is higher than found in other patent laws: “With this case, the court blesses corporate shell games resulting from organizational gerrymandering and wilful ignorance by which one can secure the monopoly of patent while hiding the best modes of practicing the invention the law expects to be made public in return for its protection”.⁴² Under the US disclosure standard there is a statutory obligation on the inventor to describe “the best mode contemplated by the inventor of carrying out his invention”.⁴³ (This best mode element of disclosure is an option under TRIPS, but is not mandatory.) In this case the allegation was that Glaxo had deliberately isolated one of its employee inventors from knowledge about the use of a technique that considerably improved the flow properties of a new form of salt he had invented and that made it suitable for use in pharmaceutical compositions. Justice Mayer’s argument is that in the corporate context where invention is a collective process it is possible for a corporation to compartmentalize the process so as to shield the employee inventor from knowledge

⁴¹ Article 29.1.

⁴² See *Glaxo Inc v Novopharm Ltd.*, 52 F.3d 1043,1053, (Fed. Cir. 1995).

⁴³ 35 U.S.C. 112.

about optimizing the performance of the invention. His solution of constructive knowledge in cases like this was not supported by the rest of the court. The best mode requirement has also been implicated in costly pre-trial discovery games since defendants have to obtain evidence of what the inventor might have known at the time of filing of the patent application, leading some to suggest that the US drop this element of its disclosure standard.⁴⁴

A disclosure conception of the patent social contract has clear problems. But it does not follow that, because there are problems with a disclosure conception of the patent social contract, we should dismiss the patent social contract justification itself. Here I want to suggest that there is a simpler version of the patent social contract that one can defend and that does provide a coherent normative frame of reference for analyzing the role of the patent office. In fact one of the problems with the disclosure conception of the patent social contract is its narrow focus on two institutional actors, the inventor and society, and its consequent neglect of the patent office as an actor. The simpler version of the patent social contract still draws on an exchange or bargain model of contract, but an act of disclosure is no longer the principal act of consideration. On the simple version of the contract society offers a monopoly in exchange for the release of an invention of social value. The inventor receives a monopoly privilege because in Coke's words "the inventor bringeth to and for the Commonwealth a new manufacture".⁴⁵ The emphasis here is not on some legalistic act of disclosure in the patent specification, but rather on

⁴⁴ See Stephen A. Merrill, Richard C. Levin, and Mark B. Myers, (eds), *A patent system for the 21st century*, National Academies Press, Washington, 2004, 120-121.

⁴⁵ Edward Coke, *The Third Part Of The Institutes Of The Laws Of England* (1628), 184 (Garland Publishing, New York and London, 1979).

the patent applicant's obligation to provide something of social value in exchange for the monopoly privilege. This social value conception of the patent social contract offers a broader and more robust basis on which to assess the patent system and, more importantly for present purposes, to analyse the obligations of the patent office.

While it is not crucial for the present normative argument, it is worth pointing out that the disclosure conception of the patent contract developed well after the establishment of the patent institution and was pre-dated by the social value of conception of the patent contract.⁴⁶ The disclosure requirement took a long time to evolve in English patent law. The use of specifications to describe the invention is rare in the 17th century, but by 1734 the law officers administering the system appear to have required the use of specifications as part of the enrolment process.⁴⁷ However, the obligation to provide a specification may not have become a fully fledged obligation imposed by the common law till 1778.⁴⁸ Clear also is that the idea of a patent as an exchange between the inventor and society in which the inventor provides something of social value was in place before the 18th century. Its clearest expression is to be found in the Statute of Monopolies itself. The Statute defined the social value of invention in terms of seven

⁴⁶ Hulme, for example, argues that the essential consideration that supported the grant of a monopoly before and for some time after the Statute of Monopolies was the working of the patent. One can debate when the specification becomes the new consideration, but what cannot be debated is that it was not the consideration around the time of the Statute of Monopolies. See E. Wyndham Hulme, 'On The Consideration Of The Patent Grant, Past And Present' 13 (1897) *Law Quarterly Review*, 313.

⁴⁷ Christine MacLeod, *Inventing The Industrial Revolution: The English patent system, 1660-1800*, Cambridge University Press, Cambridge, 1988, 48-49 and H. I. Dutton, *The patent system and inventive activity during the industrial revolution 1750-1852*, Manchester University Press, Manchester, 1984, 22.

⁴⁸ There is some debate amongst historians about when the use of specifications to disclose the invention was required. Some take the view that the turning point was the 1778 case of *Liardet v. Johnson*, but others disagree. For the debate and one view see John N. Adams and Gwen Averley, 'The patent specification: the role of *Liardet v. Johnson*', 7 (1986) *Journal of Legal History*, 156.

conditions that had to be satisfied by the inventor before a monopoly privilege could be granted.⁴⁹

The modern patent social contract justification assumes that disclosure is the essence of the bargain. It is not. What matters is that the patentee must deliver an invention of social value, or something that at least has potential social value. It is then up to society to find ways to realize the social value of the invention. Capturing the full social value of the invention information depends critically on policies aimed at the social diffusion of that information, something which the requirement of a mere paper disclosure of the invention is unlikely to achieve and which in any case, as the history of patent system to the present day shows, can be easily gamed by sophisticated users of the system.

Medieval kingdoms imposed working requirements on inventors in order to capture the social benefits of invention. On a social value conception of the patent contract, it is the diffusion of invention information of social value that matters, not the legal ritual of disclosure.

Before considering the implications of the patent social contract for the patent office, it is worth pointing out that a more general advantage of this justification is that it brings long standing traditions of social contract thinking and methodology to bear on the patent institution.⁵⁰ The simple privileges granted by the Kings and Queens of medieval Europe

⁴⁹ These were articulated by Sir Edward Coke, one of the architects of the Statute of Monopolies. See Christine MacLeod, *Inventing The Industrial Revolution: The English patent system, 1660-1800*, Cambridge University Press, Cambridge, 1988, 18.

⁵⁰ For an analysis of the advantages of construing patents as contracts from a legal perspective see Margaret Llewelyn, 'Schrodinger's Cat: An Observation on Modern Patent Law' in Peter Drahos (ed.), *Death of Patents*, Lawtext Publishing, London, 2005, 11, 56-59.

have in the 21st century become complex regulatory systems that have spread to most countries and are used by companies, very often multinational companies, as part of a private ordering strategy in technology markets that are themselves global. In 2006 there were more than 6 million patents, most of them in private hands, in force around the markets of the world.⁵¹ This private ordering has efficiency and distributive effects, often, as in the case of access to patented medicines, large scale effects. No institution that has such a global spread and global effects should escape the evaluative scrutiny of political philosophy.

The problem with the property-incentive perspective of patents is that it tends to place the weight of attention on the right holder's interest. It carries with it the danger that the interpretive playing field will be tilted too far in favour of protection of the right holder because the characterization of his interest as property invokes a long liberal rights tradition that has always defended property interests. A social contract perspective has the advantage that it places both parties to the contract firmly in view. The monopoly right of the patentee is the product of a bargain, not something that precedes it. In this bilateral context there is no reason to elevate one party's interests above the interests of the other and each party is seen as having obligations as well as rights. Contract is in this way a more neutral starting point than property when we come to think about the nature of patents.

⁵¹ World Patent Report, 2008, WIPO, Geneva, 8.

3. The Duties of the Patent Office

Returning to the issue of the implications of the patent social contract for patent offices, we can start by observing that the contract is typically depicted as a contract between the inventor and society. Under the social value conception of the patent contract, this means that the inventor has to deliver an invention that has social value. In theory legislatures acting in the public interest specify this social value through criteria of patentability, along with other patent rules such as those relating to the duration of the patent that limit the private value that the inventor can extract from the invention by means of the monopoly. In practice legislatures have to deal with powerful rent-seeking interest groups such as the pharmaceutical lobby, groups that have proved successful in corrupting the patent social contract in their drive to extract greater private returns at the expense of social returns.

For practical purposes someone has to check that the patentee is delivering his side of bargain. The criteria of patentability that help to define the social bargain are today largely the same in all patent systems. Roughly, they require the inventor to deliver something that is an invention (ie not a discovery), novel, inventive and that has some practical application that makes it part of the industrial arts. The invention must also be disclosed so that others can make use of it. Patent examiners in assessing applications have to report on these matters. Patent offices are agencies, increasingly independent agencies that have been created to do what citizens individually and collectively cannot do – to examine patent applications to determine whether the inventor has kept to his part

of the bargain. For the purposes of the patent social contract, the patent office acts on society's behalf. In broad terms, its job is to ensure that the inventor delivers an invention of social value. Economists might fit this into a principal-agent model in which the patent office is an agent charged with looking after society's welfare.⁵² Roughly speaking, in this type of modelling exercise one would ask about the incentives needed to ensure that the agent acted on the information that only the agent had in a way that was consistent with the principal's welfare.

The patent social contract prescribes an active administrative role for patent offices in ways that the other justifications for the patent system probably do not. In the 19th century no country had a patent office doing substantive examination across the range of criteria that modern offices examine against. Registration only systems were widely used in Europe. Only slowly did countries move towards examination. Of the major patenting powers, the French stayed with registration the longest and so the registration system has come to be linked with them.⁵³ A registration system probably best fits with a natural rights justification for patents. Under such a justification the right to a patent exists independently of the state. The state's role is to put others on notice of the existence of this right by providing a system of registration. Similarly, the incentive justification does not necessarily lead to a prescription for an active patent office in terms of examination since rigorous examination may reduce the number of patents granted thereby lowering the incentive effect of the patent system. Incentive theories of patents tend to focus on

⁵² One could, however, set this up in a way that ignores the patent office, with the inventor in the role of agent.

⁵³ On this point see Jan Vojacek, *A Survey of the Principal National Patent Systems*, Prentice-Hall, NY, 1936, 135.

the attributes of the property right and to push the contractual aspects of the right and the role of the patent offices into the background.

Apart from its duty to ensure the delivery of an invention of social value, a patent office has two other primary duties. One is a duty to help with the diffusion of the invention information that the inventor releases in the application process and the other is to ensure the highest degree of transparency of the patent system to those who may be affected by it. Patent offices have to assess whether the inventor has met his obligation to disclose the invention. The general rule is that they have to publish a patent application 18 months after it has been filed. Publishing an inventor's application is only one of a multitude of processes of social diffusion that are required to capture the social value of invention information and clearly patent offices are only one of very many actors that have a part to play in this process. Still patent offices can do more than they currently do to ensure that the patent system works to diffuse information of social value, as opposed to simply disclosing information. This claim is illustrated later on in this section using the patenting of software as an example.

Patent offices are in a much stronger position to fulfil their duty to promote the transparency of the patent system. The requirement to disclose the invention to the public in the patent application is of little use to the public if the published patent itself cannot be readily found. Moreover, since patents are, in effect, private commands to competitors that are enforceable by the state, competitors have a need and right to know the details of this command. Since patent offices search, examine and grant patents they

have a clear comparative advantage in being able to provide patent information to society at little cost to the public. As society's agent they have a responsibility to ensure that the patent information disclosed to them is in turn made easily accessible by them to members of the public. Amongst other things, this means that patent offices should be providing the public with search systems that are totally comprehensive and that make the task of finding relevant patents as easy as possible. Of course, companies can and do pay for transparency by hiring commercial search services, but this means that the patent system in these countries is only privately transparent.

It is doubtful whether any office in fact fulfils its obligations to make the patent system transparent to the many publics and communities that have become affected by patents. A world in which in 2006 there were more than 6 million granted patents in force around the world and roughly another 1.7 million applications filed is also a very uncertain world.⁵⁴ There is a lot of profit to be made from the kind of deep uncertainty that large scale patenting brings and the attitude of most patent offices, especially those with commercial arms, was that they can (and do) offer search services to clients. Patent claims are claims over abstract objects and, like mist, abstract objects have no natural borders.⁵⁵ It is nonsense to suggest that patent claims function like fence posts. This is to draw an analogy with land that is false. In contrast to the real property system, the patent system generates massive uncertainty because of the inherent fuzziness of abstract objects.

⁵⁴ See World Patent Report, 2008, WIPO, Geneva, 7-8.

⁵⁵ For an analysis of abstract objects in the context of intellectual property see P. Drahos, *A Philosophy of Intellectual Property*, Dartmouth, Aldershot, 1996.

The many publics affected by patents have a right under the patent social contract to much greater levels of transparency than patent offices currently provide. But this is something patent offices do not want to talk about. Rather it is all about sharing in the profits that markets in uncertainty bring. In this context it is interesting to note how patent offices have come to a truce with major commercial providers of patent information. Commercial providers do not want patent offices investing in search systems that provide patent information as a public good and in a user friendly way.⁵⁶ These commercial providers make their living because patent offices fail to provide search systems that would allow members of the public a meaningful exercise of their rights to access invention information, rights that they hold by virtue of the patent social contract. In the past when patent offices have sought to improve patent information delivery services they have encountered criticism from private providers of those services. For example, the EPO's esp@cenet is a free search system designed for general public use. In Europe the industry association that represents private patent information providers has suggested that esp@cenet might be a market threat.⁵⁷ Alarmed by the global transparency that the Internet and its search algorithms might deliver to publics around the world, the commercial providers of patent information services organized themselves into trade associations in Europe, the US and Japan, and then formed the Trilateral Alliance. The Alliance tracks and negotiates with the major patent offices the patent information that the public will be allowed to have for free.⁵⁸ Just as in the international patent standard setting game, the Trilateral Offices, when it comes to

⁵⁶ Richard Jefferson, 'Science as Social Enterprise: The Cambia BIOS Initiative', 1 (2006) *Innovations*, 13, 28.

⁵⁷ See <http://www.patcom.org/>.

⁵⁸ On the work of the Trilateral Alliance see <http://www.patcom.org/>.

charting policies for the patent information game, find themselves being shadowed by a globally organized industry Trilateral. In Europe the large commercial providers of patent information services, such as Derwent, are part of an industry association called the Patent Committee (PATCOM). PATCOM's website makes it clear that in PATCOM's view the EPO should limit its free offerings of patent information to the public: "Should they [patent offices] not concentrate on providing the raw data, and maybe stay with rudimentary public sites."⁵⁹ In the US, the private patent information providers have formed the Coalition for Patent and Trademark Information Dissemination and this Coalition keeps a careful eye on the USPTO's website, negotiating with the USPTO over any proposals it has for improving its website services to the public.⁶⁰ In Japan, patent information providers formed the Patent Information On-line Service Council. Like its European and US counterparts, this trade association has forged close links with the Japanese PO to ensure that the market position of Japan's patent information providers is protected.⁶¹

An example of patent offices having incentives to behave in a way that undermines their duties of diffusion and transparency, thereby reducing the social value of the patent contract, can be found in the field of software patenting. Computer software inventions have become one of the biggest areas of patenting activity.⁶² The disclosure requirements in relation to software in both the US and European law do not require that the source

⁵⁹ See <http://www.patcom.org/>

⁶⁰ For a discussion of the role of the Coalition see Joseph L. Ebersole, Patent information dissemination by patent offices: striking the balance, 25 (2003), *World Patent Information*, 5.

⁶¹ For a discussion see Yutaka Wada, Recent developments in Japan's intellectual property industry, 27 (2005), *World Patent Information*, 31.

⁶² WIPO reports that in 2005 computer technology was one of three areas where there were large filings across the world. See *World Patent Report*, 2008, WIPO, Geneva, 8.

code necessarily be disclosed by the inventor.⁶³ This is a matter for the patent applicant. Typically many companies will not disclose the source code, preferring to rely on trade secret protection.⁶⁴ Yet, as the Free Software Foundation makes clear, the freedom to study and adapt a program requires access to the source code.⁶⁵ Much of the social value of software innovation depends on access to the source code. It is clear that many software programmers do not see patent specifications as a useful source of technical information.⁶⁶ Disclosure through patent law has to meet legal standards of disclosure rather than standards of technical intelligibility and usefulness to other users.

Patent offices could, of course, be much more active in terms of pushing for standards of disclosure or interpreting existing standards in ways that that would make patent specifications more valuable sources of information for the community of programmers, but one likely consequence is that many companies might choose not to patent. This might actually be an efficient result, if, as some have argued, software innovation is sequential innovation and that sequential innovation is better served when there are fewer stronger patents to prevent successive generations of innovators from standing on each others' shoulders.⁶⁷ It is also an efficient result in that fewer patents would mean more

⁶³ For a discussion of the position in the US see Kenneth Caufield, 'The Disclosure of Source Code in Software Patents: Should Software Patents Be Open Source?' 7 (2006) Columbia Science and Technology Review, available at <http://www.stlr.org/cite.cgi?volume=7&article=6>. On disclosure in the EU see Guidelines for Examination in the European Patent Office, Ch. II 4.11.

⁶⁴ There are many issues raised by keeping such basic information as source code out of the public domain of an information society that relies on digital machines in almost endless ways. For one interesting example see Charles Short, 'Guilt By Machine: The Problem Of Source Code Discovery In Florida DUI Prosecutions' 61 (2009) Florida Law Review, 177.

⁶⁵ <http://www.gnu.org/philosophy/free-sw.html>

⁶⁶ See 'The patentability of computer programs: discussion of European-level legislation in the field of patents for software', European Parliament, Directorate-General for Research, Working Paper, Legal Affairs Series, JURI 107 EN, April 2002, 21.

⁶⁷ See James E. Bessen and Eric S. Maskin, Sequential Innovation Patents, And Imitation(January 2000). MIT Dept. of Economics Working Paper No. 00-01. Available at SSRN: <http://ssrn.com/abstract=206189>

scope for independent discovery in computer software, since trade secret protection does not prohibit independent discovery. And it may also be more efficient in that in the absence of easy patent protection more companies might be encouraged to experiment with open source forms of innovation in software.

But the deterrence effect of a high disclosure standard would most likely mean that an important source of world wide patenting might rapidly dry up for patent offices. The incentive then is for patent offices to accept standards of passive legal disclosure that produce little information of use to programmers, but are of strategic value to companies. Patent offices are complicit in a process in which companies are allowed to go through a ritual of disclosure that meets legal requirements but robs society of the social value of the invention.

Summarizing, a patent social contract justification forms a natural starting point for developing a normative account of the public good mission of patent offices. A contract perspective encourages a deeper look at what both sides are entitled to under the patent bargain and the role that a patent office should serve in securing society's entitlements under that bargain. Patent offices have three primary duties; they have to check that the inventor is delivering an invention of social value, they have to focus on ways to improve the social diffusion of invention information and they have to ensure that the system is maximally transparent. The public sector reforms that have transformed patent offices into business agencies have created a set of incentives for patent offices to view patent applicants as their main clients. The danger is that they will administer the patent system

in ways that enhance the private value of patents for these clients and reduce the social value of invention information.

4. A Counter Network of Outsiders

The basic problem of the patent system can be simply stated. Standard-setting and administration of the system is dominated by a globally integrated private governance network. This network has made the patent social contract largely meaningless. More rule-based reform of the system will simply see this private governance network continue to bend the process of rule-making to its own ends. What is needed to counter the power of this network is another network made up of outsiders to the patent system. The only way to counter the power of one network is with another network. The outsider network needs to have the technocratic skill to confront the insider network. Confrontation has to be constant and detailed. Each patent rule change proposed by the insider network to serve its private interest should be tracked and fought by an outsider network serving the public interest. The thousands of patent grants that daily pour out of the major patent offices must be assessed for social harm and ways found to eliminate the most damaging patents or to contain their effects.

General accountability mechanisms such as ministerial responsibility cannot provide the kind of close oversight that is needed of patent office decision-making. Instead, there has to be a long term strategy based on building a counter network to the private governance

network that has absorbed patent offices. This counter network should be guided by the separation of powers principle. The basic idea is to contest the power of the private network at every point where key decisions are made and where possible to create veto rights or checks over patent office decisions. An example of a veto model is the Brazilian model in relation to pharmaceutical patents where examiners in the Brazilian PO do not have the final say over the grant of a pharmaceutical patent.⁶⁸ An example of a checking mechanism is an external audit mechanism for patent quality.⁶⁹

The future of the patent social contract depends on the formation of an outsider governance network. There are many outsiders – government departments such as health departments and environment departments, competition law authorities, civil society organizations, technology movements interested in patent free innovation (for example, the free software movement), science researchers who still subscribe to public good values, university administrators who still have some sense of the public good mission of universities, companies on the receiving end of patent bullying and litigation, indigenous groups fighting biopiracy, farmer groups opposed to patent locks on seed varieties, and many others. There are many more outsiders than there are insider beneficiaries of the patent system. One of the fundamental problems facing outsiders is a basic lack of information about the patent holdings of the few powerful beneficiaries of the system. Information about granted patents is public information, but it is not available in publicly useful ways that enable the forensic scrutiny of those patents by interested outsiders.

⁶⁸ See P. Drahos, “‘Trust Me’: Patent Offices in Developing Countries”, 34 (2008), *American Journal of Law & Medicine*, 151.

⁶⁹ See P. Drahos, *The Global Governance of Knowledge patent offices and their clients*, Cambridge University Press, Cambridge, 295-297.

Exposing and isolating those patent holdings in ways that are accessible to the many interested outsiders is a first step. Revealing concentrated power in a democracy begins the process of separating that power. Exposure of power by itself is not enough. States interested in reclaiming the patent social contract have to help to create the veto and checking systems that will enable outsiders to deal with the patents that cause social harm. Many outsiders have the technical knowledge and the interest in confronting the private governance network that runs patent systems. However, few can afford the costly battlegrounds of courts. States need to create low cost tools that will help outsiders to create a contest of networks.

Is there the political leadership that is needed to take on the sophisticated private governance network that rules the patent system. Here it is worth pointing out that competitive political environments will from time to time create circumstances in which politicians will have incentives to act in the public interest and contribute to the building of an outsider network to regulate the patent system. For example, the Australian Parliament passed an amendment to its Therapeutic Goods Act that addresses the problem of patent gaming by brand pharmaceutical companies. This legislation was pushed through by an opposition that was in a position to control the Australian Senate at a time when the Australian government was seeking to implement the US-Australia Free Trade Agreement. Contained in the agreement were provisions affecting Australia's Pharmaceutical Benefits Scheme (PBS).⁷⁰ The PBS was widely regarded as the gold standard for regulating the patent monopoly prices of pharmaceuticals. But the PBS was also disliked by the US pharmaceutical industry and so it took the opportunity of the free

⁷⁰ See Annex 2-C Pharmaceuticals, US-Australia Free Trade Agreement.

trade negotiations to begin the process of dismantling it.⁷¹ A small group of academics and activists pointed to the potential cost implications of this for medicines under the PBS.⁷² Their warnings were picked up by the media and there followed a mass public concern about the future of the PBS.⁷³ The opposition leader Mark Latham donned the cape of the people's health champion. Announcing that he would not let "dodgy" patents limit people's access to medicines under the PBS, he tabled amendments that aimed to deter pharmaceutical companies from patent gaming behaviour.⁷⁴ These amendments were passed.⁷⁵

The outsider network for patent governance that needs to be built will not be built overnight. But broader political interest in the patent system has advanced much further than anyone would have predicted two or three decades ago. From time to time politicians will have incentives to act as the people's champion when it comes to fighting patent monopolies. Good ideas for the outside regulation of the system will be put in place and an outsider governance network will continue to evolve.

⁷¹ For the details see Peter Drahos, Buddhima Lokuge, Tom Faunce, Martyn Goddard and David Henry, *Pharmaceuticals, Intellectual Property and Free Trade: The Case of the US-Australia Free Trade Agreement*, 22 (2004), Prometheus, 243.

⁷² See, for example, Peter Drahos, Thomas Faunce, Martyn Goddard, David Henry, 'The FTA and the PBS', A submission to the Senate Select Committee on the US-Australia Free Trade Agreement, available at http://www.aftinet.org.au/campaigns/US_FTA/henrydrahossenatesub2.htm.

⁷³ Particularly important in bringing the attention of the public to the issues was the documentary "A Bitter Pill" that was broadcast by the ABC Four Corners on 2 August 2004.

⁷⁴ See <http://www.abc.net.au/7.30/content/2004/s1169988.htm>.

⁷⁵ See US Free Trade Agreement Implementation Act 2004, Schedule 7.