

# Information Protection: Filling Some Gaps Left by Patents

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## Introduction

The present economic crisis reflects a calamitous shift from technological to financial innovation, two telling indicators of which are how profits and pay in financial services outstripped those in technology, sucking investment and brainpower from one to the other.<sup>1</sup> These are from US data, but they are confirmed by how, as long as manufacturing dominated the British economy, the country's banking assets were only about half of national income; but financial deregulation allowed them to increase to more than five times income.<sup>2</sup> This growth in financialisation mirrors the loss to Asia in recent decades of whole industries which once were leaders. Before the final demise of the huge engineering conglomerate of General Electric, for example, its main research laboratories at Wembley were only allowed to work on projects for which the start of returns could be foreseen within five years; on the other side of the world, R & D timescales were multiples of this. Such a policy was not stupidity on GEC's part, but reflected the perverse incentives it faced. The objective of the present article is to show how investment in technology could be made attractive again, through better laws for information protection.

## Innovation: getting new things done

Innovation is turning information into tangible realities. By no means all of it is economic, but when it is, individual property rights have shown themselves to be the most effective way to make it possible, because they support the widest range of human creativity. These rights include what has only come to be generally called intellectual property (IP) in recent decades, but this has been particularly vulnerable to capture by interests. The US Patent Act of 1952, which was copied throughout the world, was written by lawyers for the pharmaceutical industry.<sup>3</sup> Unsurprisingly, chemicals now account for two-thirds of all the worldwide profits attributable to patents.<sup>4</sup> TRIPS, the Trade-Related Intellectual Property Annex of the 1994 World Trade Organization (WTO) Agreement, effectively froze this flawed system, and imposed it on any country which had not already adopted it, of which India was the most important. This Annex was the product of massive lobbying by interests, which has been accurately described as how "twelve Corporations made

<sup>1</sup> Thomas Philippon and Ariell Reschek, "Wages and Human Capital in the U.S. Financial Industry: 1909–2006", National Bureau of Economic Research working paper No.14644 (January 2009), show that in the US, financial sector profits reached 45% of all profits, and pay had a differential of 70%, at the peak of the boom.

<sup>2</sup> David K. Sheppard, *The growth and role of U.K. financial institutions, 1880–1962* (London: Routledge, 2006 [originally published 1971]); and Bank of England data.

<sup>3</sup> Judge Rich, cited in P.J. Federico, "Origins of Section 103" in John F. Weatherspoon (ed.), *Nonobviousness—The Ultimate Condition of Patentability* (Washington, D.C., Bureau of National Affairs, 1978), para.1.09.

<sup>4</sup> J. Bessen and M.J. Meurer, *Patent Failure: How Judges, Bureaucrats, and of Lawyers put Innovators at Risk* (Princeton, NJ: Princeton University Press, 2008).

public law for the world".<sup>5</sup> Patents should be of particular value to smaller firms, but they have been allowed instead to become a reinforcement of the other kinds of market power possessed by the largest multinational firms, instead. Outside those who gain professionally from it, few now claim that except for chemicals, the patent system delivers the protection it claims to do.<sup>6</sup>

### *Need for new information protection*

Because of TRIPS, it is pointless to consider serious reform of patents, since this would require wide international agreement. However, it is open to any country to improve its protection of information significantly by introducing new means for this which are outside the scope of TRIPS. These would operate alongside existing IP and not as any form of substitute for it. The most promising of such measures is protection of innovation directly (DPI) and fortuitously this already exists in the United Kingdom in considerably more than embryonic form. After discussing the advantages of DPI, therefore, suggestions will be made as to how these could be captured by adding to the legislation already in place.

### *Patents protect indirectly*

Under the patent system, technical innovations obtain their protection *indirectly* through their connection with a related invention. Whatever protection they receive therefore depends upon the closeness of the correspondence, and the strength of the link, between them and their associated inventions. In chemicals, this link is strong and correspondence is close; indeed, for pharmaceutical products it amounts to identity: what is discovered in the laboratory and patented, what succeeds in clinical testing, what is manufactured in quantity and what is eventually prescribed by the physician, delivered by the pharmacy, and taken by the patient, are all (indeed, must be) exactly the same. For this reason, protection of invention, which is indirect protection of innovation, is effective for such products. This formulaic identity is enough on its own to explain why such a high proportion of worldwide profits attributable to patents are made by firms in the chemical industries.

For other kinds of products, there is only a poor correspondence between what customers actually hand over money for and any invention associated with it, because there are invariably several incremental changes between them. Chester Carlson's 1942 dry copying patent, for example, is scarcely visible through the complexity of even early Xerox commercial expressions of it. The link between invention and innovation in non-chemical technologies is therefore weak, so that the protection which innovations of this kind can receive indirectly from patents is almost always inadequate to justify investment and can often be worthless. The problem of investing in innovating such *products* is illustrated in a recent judicial observation in the Court of Appeal:

"One can, of course, postulate a different policy under which a [patent] monopoly might make sense. There are old or obvious ideas which take a lot of work, expense and time to develop and turn into something practical and successful. Without the incentive of a monopoly, people may not do that work or spend the time and money. The Fosamax case, *Teva v Gentili* [2003] EWHC 5 (Patent), [2003] EWCA Civ 1545, is an example of an obvious invention which cost lots to bring to market. But patent law provided no protection for all that investment because the basic invention was obvious."<sup>7</sup>

<sup>5</sup> Susan K. Sell, *Private Power, Public Law: the Globalization of Intellectual Property* (Cambridge: Cambridge University Press, 2003), p.96. See also P. Drahos and J. Braithwaite, *Information Feudalism: Who Owns the Knowledge Economy?* (New York: Free Press, 2002).

<sup>6</sup> For a full discussion, see W. Kingston, *Beyond Intellectual Property: Matching Information Protection to Innovation* (Cheltenham and Northampton, MA: Edward Elgar, 2010).

<sup>7</sup> *Angiotech Pharm., Inc v Conor MedSystems Inc* [2007] EWCA Civ 5 at [50] (Jacob L.J.), aff'g [2006] EWHC 260 (Pat) (Pumfrey J.).

## Direct protection of innovation (DPI)

“Protection for all that investment”, however, could be provided directly to technical innovations, and in fact doing this would be no more than extending existing practice from other fields. It has been the way of protecting the new plant varieties of the world since 1961 under the UPOV Convention.<sup>8</sup> It is also the principle under which the US Orphan Drug Act of 1983 operates, with remarkable success. The concept has also been applied in practice in the EU’s 1996 Directive for protection of databases, and in the US protection of moulded boat hulls, in Ch.13 of the 1998 Copyright Act. And, as will be discussed below, British functional design legislation passed in 1988 also protects innovation directly.

In none of these methods does protection depend in any way on the strength of a link between an invention or discovery on the one hand, and its actual embodiment on the other, as it would under a patent. Under UPOV it is granted, not for the concept of a new plant variety, nor even for a variety which shows promise in field tests, but for the fully developed plant, capable of being reproduced in quantity, fully proved in trials and ready to go on the market. In the US orphan drugs system, it is provided only when a drug has been clinically tested and approved for marketing. A database is protected under the EU Directive only when it has come into existence, and US boat hull protection is granted, not for the design of a hull, but for the actual “plug” made to this design from which copies can be made.

### *Origins and empirical results*

Two quite independent proposals for DPI in industries where patents work poorly were made in the 1980s.<sup>9</sup> The European Commission then funded research leading to a book on the concept, which included critical chapters from international experts.<sup>10</sup> The proposal has recently been the subject of reviews by Sichelman.<sup>11</sup>

The evidence from the results of the US orphan drug legislation of the potential value of DPI for filling gaps in patent protection is especially persuasive. The background to this is that there are numerous disorders (orphan diseases) which affect too few people to justify the investment which large drug firms have to make to produce a profitable product under present arrangements—including the cost of patents to protect them. The 1983 Act empowered the Food and Drug Administration (FDA) to fill this gap by giving an undertaking that it would not license a competitor for seven years, to any firm which produced a relevant drug which met its criteria. Such an award is a true monopoly, since no drug can be sold in the United States without an FDA licence. This US initiative has been copied in Europe, Japan and Australia. The protection it offers has made investment in the research leading to such drugs highly attractive, not least because it cannot involve the investor in litigation over his rights, as could any form of IP.

Consequently, this form of DPI has been spectacularly successful, with a twelvefold annual increase in new drugs and both actual and relative declines in death rates from the diseases they treat, during the first 20 years of its existence in the United States.<sup>12</sup> The lesson that can be drawn from these figures could hardly be clearer: appropriate protection results in more innovation. DPI can indeed fill the gap referred to by the Court of Appeal judge, by greatly increasing the attractiveness of investing in research for new products or improvements to existing products which would not meet the criteria of novelty and non-obviousness required for patent protection. A patent is granted in exchange for information which

<sup>8</sup> UPOV, “Report on the impact of plant variety protection”, No.353(E) (January 2006).

<sup>9</sup> Hermann Kronz, in *Mitteilungen der Deutschen Patentanwälte* (1976) Heft 3, and (1983) Heft 7–8; and also “Patent Protection for Innovations: A Model” [1983] E.I.P.R. 178 and (8), 206–10 (The “Innovation Patent” [1983] E.I.P.R. 206; and W. Kingston, “An Investment Patent” [1981] E.I.P.R. 131).

<sup>10</sup> W. Kingston (ed.), *Direct Protection of Innovation* (Dordrecht and Boston: Kluwer Academic Publishers for the Commission of the European Communities, 1987).

<sup>11</sup> Ted Sichelman, “Commercializing Patents” (2010) 62(2) *Stanford Law Review* 34; and “Taking Commercialization Seriously” [2011] E.I.P.R. 200.

<sup>12</sup> Henry Grabowski, “Increasing R&D incentives for neglected diseases: lessons from the Orphan Drug Act” in Keith E. Maskus and Jerome H. Reichman (eds), *International Public Goods and Transfer of Technology under a Globalized Intellectual Property Regime* (Cambridge: Cambridge University Press, 2005), pp.457–480.

must be new in the whole world; DPI would be granted for investment to innovate information which may not be new as such, but which has not yet been turned into concrete reality in a prescribed geographical area.

### *Criterion of novelty*

The preferred qualification for protection under DPI, therefore, is “non-availability in the ordinary course of trade”. Both authors of the original articles in which the concept was first put forward developed this criterion quite independently, and it was discussed at length in the book which the EU commissioned as a result. It means that if a product, or a product with a particular feature, cannot be obtained through whatever are the normal channels for its type, investment to fill that gap will be rewarded by a temporary monopoly of the resulting sales. This will occur even if the novel aspect had been described in technical literature, or even if someone had made a prototype without proceeding to commercial production of it. For DPI, the reward is not for teaching something new but for taking the initiative to do it.

This is in sharp contrast to the classical patent system, which only purports to reward “teaching”. Moreover, its criterion of novelty is whether or not the teaching is new in the whole world. No patent can be valid in any country if its “teaching” can be shown to exist already in a technical paper, filed in an obscure public library in a distant country, never translated into another language, and never even heard of in the country where the application for a patent was being examined or even granted. This is no basis for rational investment, so there is nothing surprising in the lack of technological innovation in a world that relies on it.

Worse is yet to come, in the operation of the “non-obviousness” criterion in the examination process. The US 1952 Patents Act, which is the origin of this test, did not define “obviousness”, nor has any other country’s statute done so. Consequently, patent examiners and judges must do the best they can by finding bits of known technology which, when put together, ostensibly replicate a patent application in the mind of the hypothetical “individual skilled in the relevant art”. Not only does this often lead to litigation, it also results in many valuable new ideas being denied the protection that could justify investment at high risk and even uncertainty to turn them into concrete reality. The novelty criterion of DPI enables it to escape these disadvantages, because whether or not something is “available in the ordinary course of trade” is a matter of observable fact. It does not depend upon any patent examiner’s, judge’s—or worse, a jury’s—subjective opinion about “obviousness”.

### *Commercial emphasis of DPI*

The criteria for classical patents serve the interest of the firms that are at the very leading edge of world technology, since only these will have economically relevant “teachings” that are not anticipated by earlier publication in the scientific literature. Also, the incremental innovations that are commercially important are those that evolve organically out of existing technology and in turn point to the next small adaptive change. As such, they will be “obvious” to one skilled in the Art” and therefore unpatentable. This reflects abdication of protection for much incremental innovation by the classical patent system, leaving it to be dealt with instead by the capability market power possessed by established firms. It is no argument against this diagnosis that many firms do patent small improvements extensively: this is no more than strategic use of the patent system for bargaining purposes, and very few of these “inventions” are innovated, or indeed even intended to be innovated.<sup>13</sup>

In radical contrast, DPI would make the subject-matter of protection, not information in the abstract, but the investment which is needed to turn that information into concrete reality. A state-guaranteed

<sup>13</sup> See R. Roycroft and D. Kash, *The Complexity Challenge: Technological Innovation for the Twenty-First Century* (London: Pinter, 1999).

privilege is being exchanged for something the state wants to encourage, which is investment under uncertainty and high risk. This privilege is being granted, not for finding new things, but for getting new things done, which is where most wealth and employment are generated. Just as the US Orphan Drug legislation is intended to make it attractive to invest in producing new drugs of special kinds, so introduction of DPI would have the objective of making it attractive to invest in the widest possible range of new developments that cannot rely on conventional IP for protection.

### *Irrevocable grant*

An essential element of DPI is to give investors as much certainty as possible about the projects they are considering. With anything new, an investor faces the uncertainty as to "whether it can be done", and even when that is overcome, there remains the risk that the product will not succeed commercially. Many reasons for this will only become apparent with hindsight.

The very last thing a potential investor wants as well as this technological uncertainty is the danger that he will have to get involved in costly litigation to preserve the conditions under which he thought he was making his investment. At present, this is quite likely. As pointed out above, a classical patent grant can be effectively extinguished by the later discovery of information whose existence at the time of grant had been unknown to any of the parties concerned. Who would invest in speculative drilling for oil on the basis of a legal concession which could be revoked if new seismic information became available about the geological structure to which it relates? Yet this is what is effectively being asked of investors if they rely on patents.

DPI, in contrast, would offer opportunities before grant to competitors and the public at large to provide evidence to contradict an applicant's claim that his subject-matter meets the novelty criterion. After preliminary screening, a description of a project would be published on a website, so that anyone can submit evidence before the application is formally investigated. Once made, however, a grant would be irrevocable (unless it has been obtained through fraud) for at least part of its term, and as such must be a vastly more attractive basis for investment than is available from any existing form of IP.

### *Settlement of disputes*

Because IP owners have to protect their grants themselves through the legal system, these grants are effectively no more than licences to litigate, and the value of such a licence depends upon the size of its owner's purse. Not alone can a valid patent be infringed with impunity, simply because its owner cannot afford to pursue a wealthy opponent through the courts; many wealthy firms get de facto protection from patents that would be found to be invalid if they were tested, simply because no one dares to take the risk of challenging them. This has been summed up by the former manager of technology, strategy and planning of IBM research, as follows:

"Large companies routinely infringe intellectual property of start-ups or individual inventors. They will not sign non-disclosure agreements to protect others' IP. When shown relevant patents they need to license, they literally say 'Sue us', knowing that deeper pockets trump a valid claim."<sup>14</sup>

For this reason, the state should be involved in policing the privileges it grants. This is not only to ensure justice to all kinds of owners of protection, but because infringement of a grant which has been made for a public purpose (in this case, national industrial development) is also an attack upon the state's own social policy: there is an element of *lèse-majesté* about it.

<sup>14</sup> Joshua Shapiro, Letter to *Financial Times* (US edition), May 15, 2012.

DPI would change this situation by making expert arbitration of disputes compulsory, with arbitrators selected ad hoc from the business, scientific and academic communities for their knowledge of the state of the relevant art.<sup>15</sup> Of course, there would have to be appeal to the courts from arbitration, but legal aid would then be available to the party who accepted the arbitrator's decision. This is not support for any particular size of firm. But no small firm would appeal, because to do so would shift the dispute on to ground where a stronger opponent could use its financial advantage. Large firms would be reluctant to appeal, as a result of the combination of having lost an expert arbitration (because judges give much credence to technical expertise) and of facing an opponent who will now have equal resources for litigation. As a result, legal aid should be called for very rarely.

### *Infringement*

DPI would use a "whole information contents" approach to deciding questions of infringement. Its grant would cover *all* information contained in a new product, even what is known as "tacit" information (what we know but cannot easily express) as well as information which only emerges from hindsight. This stress reflects the difficulty of understanding the full significance of anything new as long as it is new. As to the feasibility of this approach, it is noteworthy that business people seem to be able to pick out new things to copy very quickly if they get even a whiff of a favourable response from the market. They are also skilful in identifying and using gaps in protection which inevitably arise in the drafting of patent claims, but which only become visible with hindsight.

For DPI, therefore, infringement would be defined as:

"causing or attempting to cause, loss of revenue to the protected product, other than by innovation which uses none of the protected information."

This would explicitly include "that it can be done", or "that there is a market for it", since competitors would not have these highly valuable pieces of information if the investment under DPI had not been made. No existing IP covers these types of information, a lack which enables others to free-ride with impunity on the efforts of those who originate them. For example, EMI lost the world market for the "brain-scanner" it had invented and validly patented, for this very reason.<sup>16</sup>

### *Term of protection*

Patents are now granted for 20 years from application. The term of DPI grants could be expected to be shorter, in line with the strength of the protection they provide, which should also make this strength readily acceptable to public opinion. Also, any rational investor would prefer a short term during which his protection was certain, to a longer term which could be contested.

DPI terms could be adjustable according to the risk undertaken in making an investment, or in order to encourage investment in designated regions (e.g. of high unemployment) or in specific technologies. A possibility discussed in the EU book is to have three terms, the longest for radical innovations, the shortest for incremental innovations, and one intermediate between them. A further refinement of this would be to relate the term to the resources of the firm seeking protection as a way of compensating for different subjective evaluations of the risk of an investment. What might represent little more than petty cash to a very large firm might be altogether beyond the level of risk that a small one could contemplate. It is very much in the public interest that smaller firms should be enabled to innovate, because larger ones are under so much pressure to distribute dividends, rather than investing in innovation.

<sup>15</sup> See generally Kingston, *Beyond Intellectual Property* (2010), Ch.8.

<sup>16</sup> See Kingston, *Beyond Intellectual Property* (2010), p.150.

Measurement by money instead of time, as has been suggested for patents, would be particularly suitable for DPI. This would replace a grant of monopoly by a liability rule, and could achieve the desirable result of having multiple exploiters of the information. It has been shown how this could be done without reducing the attractiveness of early stage investment if payment for the right to use the protected information reflected retrospective sharing in the amount and the risk of the originator's investment.<sup>17</sup>

### *The potential of DPI for generating innovatory investment*

The protection that DPI would grant relates explicitly to investment; its length and strength could be tailored if desired to the risk of that investment, and because it specifically relates to innovation, it has every chance of empowering businesses to grow by innovating.

Further, it would ensure an increase in the amount of R & D carried out with longer-term objectives, and direct resources towards those who can use them best in innovation. It would particularly stimulate innovation of products and components of products that the classical patent system fails to protect. There are many areas in which businesses could be profitably involved, if DPI was available to provide the protection which any investment under uncertainty needs. Losses would be borne by those who hoped to gain from their investments, not by the taxpayer—DPI involves no subsidy from the public, as other means of encouraging innovation do. New firms which would come into being under the arrangements now proposed, would be innovative from the start, and founded by innovators. It is well known that such people are recidivists; they want to repeat the excitement associated with their first project, so their firms can be expected to go on as they have started.

### *Innovation in smaller firms*

The failures of all IP impinge with particular severity on innovation by smaller firms.

Large firms can compensate for these failures through the market power they possess from the scale of their productive assets, and in fact most engineering innovation now receives the protection it needs in this way because patents work so badly for this sector. Firms which do not have such "capability" market power can only innovate to the extent that they can obtain some degree of specific protection for the information they generate. To the extent that IP fails to provide this for them, it is irrational for them to innovate. As well as this, large firms are less innovative than they might be, because they are not stimulated by competition from the innovatory activity of smaller ones. At present, it is easy for a larger firm to copy a patented SME innovation without any serious fear of redress, since the patent offers no protection to a firm which does not have the resources to pursue an infringer through the courts. Compulsory technical arbitration and legal aid provisions in a DPI regime would transform this situation and could therefore be particularly valuable for innovation by smaller firms.

Consequently, DPI would provide for the first time a secure foundation for investment in innovation by this type of firm. In employment terms, too much is being expected of them—especially the start-up sector—everywhere at present. Empirical research has shown that no less than half of all the employment growth from such firms comes from only 4 per cent of them. This suggests that policies should be directed towards removing obstacles to the growth of the very small group of really dynamic firms. DPI would contribute to this automatically, effectively and at virtually no cost to public finances.

### *Exploiting the world's unused inventions*

Considerable benefit could also be expected to come from using DPI to innovate inventions whose details are to be found in the databases of the world's patent offices, but which were ahead of their time. One of

<sup>17</sup> As proposed by Reichman; see Kingston, *Beyond Intellectual Property* (2010), p.144, and also Ch.9.

the drawbacks of the classical patent system is that unused patents can actually block future innovation. If a patent is obtained at a time when the market for an invention is not yet ripe, it prevents protection being obtained later on, when conditions have changed. The market is then ready for the invention but the protection needed to encourage investment in innovating to meet the new demand cannot be obtained. This is because publication of the earlier patent disclosure has made this "prior art" to defeat any future patent application. Examples of this are alternative energy inventions patented when fossil fuels were cheap, which are needed now, but which cannot get the protection that could make them into investment opportunities.<sup>18</sup>

This lack of specific market power means that if investment in such innovations is to be made at all, it can only be through the capability market power of larger firms, with all the disadvantages of this, especially in terms of their intrinsic inertia with respect to innovation. DPI, however, could provide smaller firms with this power, because it gives protection for something not done before, instead of for something not known before. The databases of the world's patent offices must contain large numbers of such disclosures. The Japanese automobile industry made very effective use of this kind of information in the early stages of its development, and it would be surprising if DPI could not similarly lead to the building of new businesses on information in these databases that is commercially sterilised at present.

### *Opportunities for venture capital*

Apart from unused inventions, there is no shortage of ideas that could be exploited if creative individuals could find the backing they need to get started. That backing is more likely to be found if investors could foresee that they would have a useful period when the idea in question could not be copied in any way. In most cases only DPI could provide this reassurance. Venture capitalists are subsidised at present by the EU, but they have difficulty finding projects that can meet their criteria. DPI should increase the number of such projects, as well as their speed of growth, and thus lead to more development in firms financed by them.

### *Inventions from university research*

Very large sums of public money are devoted to research in universities, which are constantly being encouraged to exploit any discoveries commercially as far as they can. To this end, technology transfer offices have been established on almost every campus. Unfortunately, to the extent that there is not a corresponding body of innovative firms, the results of university research in all but the most advanced countries will be exploited abroad rather than at home. DPI would reverse this imbalance, and to the extent that it led to manufacturing, there would also be incremental improvements in whatever was being made. Ability to protect these would consequently add a valuable dimension to the commercialisation of research in universities.

University-owned patents are vulnerable to being taken up by "trolls", firms which use them, not for innovation, but to blackmail firms in relevant technological fields. The trolls present themselves as venture capitalists, which suits university technology transfer officers who need to justify their existence. The research universities of the United States have felt the need to warn their officials that they should:

"require their licensees to operate under a business model that encourages commercialization and does not rely primarily on threats of infringement litigation to generate revenue."<sup>19</sup>

<sup>18</sup> For example, the Canadian National Research Corporation invented a wind turbine, but was denied a patent for it, because US patent No. 1835018 to Darrieus had issued 60 years earlier in 1925.

<sup>19</sup> "In the Public Interest: Nine Points to Consider in Licensing University Technology", Meeting in Stanford University (March 6, 2007).

To the extent that the results of university research were protected by DPI, they would be of no use to trolls, since the protection would be void in the absence of investment to innovate them.

### *Open to foreign investors*

As with IP under the Paris Convention, a DPI grant would be equally available to foreigner and native. However, whereas a Japanese firm, for example, can obtain a patent in another country and exploit it by importing the protected products from Japan, it could only get the benefit of DPI by actual investment to produce its innovations in the country where the protection is granted. (This was actually the position with patent protection under the Paris Convention from 1883 until lobbying by the more powerful exporting countries got it changed in 1925.) No discrimination against the foreign firm would be involved, since DPI imposes an identical obligation to invest, on local applicants.

### **UK opportunity**

There is plenty of evidence, therefore, that DPI works, and that its current range of operation could be expanded with considerable benefit. It offers a special opportunity to the United Kingdom, because it already exists substantially in the exclusive privilege defined in s.213 of the Copyright, Designs and Patents Act 1988. This functional design protection covers "basic inventions that are obvious" because its criterion of novelty is "not commonplace in the same field of design". It is similar to copyright in that no formalities of any kind, such as registration, are involved—the protection is automatic.

Section 213 was not a planned addition to a portfolio of information protection means, but an unintended consequence of judicial decisions. Armstrong Patents began making spare parts for British Leyland vehicles and sold them for less than the maker's own products. British Leyland retaliated by claiming that to copy a three-dimensional object was indirect infringement of the copyright in the drawing from which this object had been made, and won its case for this up to and including the House of Lords. This ruling offered functional design protection for the first time to a range of products that went far beyond vehicle spare parts. However, its term, the lifetime of the draughtsman plus 50 years, was considered to be far too long for these, and s.213 was included in a routine copyright revision Bill to replace it. The EU research on DPI is known to have played a part in its drafting.

The UK Intellectual Property Office has been considering this right, but is agnostic as to whether "it is good or bad for the UK economy".<sup>20</sup> Whatever one can say about the legislation as it stands, it established the principle of protecting innovation directly and has the potential to be developed easily into a full-scale and effective version of DPI. In the first instance, this could be directed towards mechanical and electrical innovations, because the classical patent system works least well for these. Its basic structure was worked out in the book which was commissioned by the EU,<sup>21</sup> and only a limited number of improvements to the s.213 functional design right would be needed to enable it fill many of the gaps in information protection left by the patent system. These would include the following:

### *Publication of applications*

In 1988, any form of registration to allow others know what designs have protection under s.213 was considered to be too expensive to contemplate, but of course this no longer applies since the coming of the internet. All applications for protection could therefore be published on a website.

<sup>20</sup> See IPO, "IPO Assessment of the need for Reform of the Design Intellectual Property Framework", <http://www.ipo.gov.uk/hargreaves-designsassessment.pdf> [Accessed September 24, 2012].

<sup>21</sup> Kingston (ed.), *Direct Protection of Innovation* (1987).

*Novelty criterion*

Section 213's criterion of novelty, "not commonplace in the same field of design", is close to that originally proposed for DPI, "not available in the ordinary course of trade". The US boat hull protection uses the phrase "not staple or commonplace". Judicial rulings seem to have interpreted s.213's "commonplace" in terms of "availability in trade", so there is no obvious reason to change it.<sup>22</sup>

*Resolving disputes*

In cases where evidence is provided which contests the novelty of an application, or where infringement is claimed, there is need for a means of adjudicating the issues. Again, uniquely, the United Kingdom already has a suitable instrument for this purpose in place, in the "Opinions" service which its Intellectual Property Office now offers for patents at a nominal fee and with quick delivery. This provides the expert view of a senior patent examiner on the validity of a patent or an infringement claim. The quality of these Opinions is very high indeed, so that they go a long way towards offering the expert technical arbitration whose lack is such a major cause of the cost of settling patent disputes.<sup>23</sup>

Even though examiners cannot call for discovery of documents and the Opinions do not bind in law, they are already likely to have reduced intimidation of smaller firms by large ones with threats of litigation costs which they cannot afford. Infringers or would-be infringers now have to be cautious about using their strength in litigation against an opponent who has obtained a favourable Opinion, because the expertise behind this will weigh heavily with a judge. This service could be extended to DPI without difficulty, by giving examiners the power to make discovery orders. DPI's criterion of novelty would be even easier for an experienced patent examiner to decide upon, than "obviousness" would be in a patent case.

There would of course have to be a right to appeal from an Opinion, and yet once more the United Kingdom has already in existence an appropriate means for this in the reconstructed Patents County Court. All that would be needed is to raise the upper limit of £400,000 for damages which this court can award to a level appropriate for DPI cases. Legal aid for the party which accepts an Opinion, as already suggested, would deal with the costs of litigation which allow intimidation of weaker parties by strong ones.

*Term of protection*

TRIPS specifies that protection for industrial designs in member countries must last for at least 10 years. Section 213 protection lasts for this term without qualification, but adds a further five years subject to compulsory licensing. If the parties cannot agree on terms for this, the Intellectual Property Office will arbitrate between them. There seems to be no good reason for departing from these arrangements.

**Putting DPI into effect**

The first task, as a preliminary to national legislation, would be to establish the claim that DPI falls outside the jurisdiction of TRIPS. This specifies the patent, trade mark and design regimes that member countries must have. DPI would not be governed by TRIPS because its method of protecting investment in innovation is none of these, and is not specified in this Annex in any other way. Neither would DPI modify or interfere with these IP arrangements in the slightest degree. Consequently, it seems highly unlikely that the WTO could claim to have standing in the matter.

The proposal would have to be cleared with the EU to ensure that it did not amount to an unfair distortion of trade patterns within the Union, but an objection to it on this score is unlikely, since s.213 has been in

<sup>22</sup> See, as examples, *A. Fulton Co Ltd v Grant Barnett and Co Ltd* [2001] R.P.C. 16 Ch D; and *Farmers Build Ltd v Carrier Bulk Materials Handling Ltd* [1999] R.P.C. 461 CA (Civ Div).

<sup>23</sup> See IPO website, <http://www.ipo.gov.uk/types/patent/p-dispute/p-opinion/p-opinion-advert.htm> [Accessed September 24, 2012].

place for so long. However, Brussels might claim a further interest in view of art.118 of the Lisbon Treaty. This empowered it "to set up centralised Union-wide authorisation, co-ordination and supervision arrangements to provide uniform intellectual property rights throughout the Union".<sup>24</sup> The same argument would be made to Brussels as to the WTO, i.e. that DPI is not a form of IP.

To reinforce this, the case could be made that the term "intellectual property" as used in the Lisbon Treaty should be interpreted restrictively, as is the case with all treaty language. This portmanteau phrase only came into use in recent decades as a convenient means of grouping patents, trade marks, copyright and industrial designs together. It has no further meaning. The Paris Convention, it should also be noted, deals with "industrial", not "intellectual", property. This semantic issue would only be important if the European Court of Justice had to rule on an (unlikely) claim by the European Commission that the wording of Lisbon art.118 covered all possible means of information protection.

### The EU's pressing need for innovation

A proposal to establish DPI might in fact be met with enthusiasm in the EU's Innovation Directorate because the Union is desperate for a return from financial to technological innovation, as its only hope for economic growth and employment. Its own innovation policies have been a notable failure. For example, at its Lisbon meeting in 2000, the Council of Ministers resolved that within a decade Europe "would be the leading power in the world in the knowledge economy". Not alone was it clear within a few years that this goal had not the remotest chance of being achieved, but that by the best comparative measure available, it could be foreseen that Taiwan on its own would surpass all 27 EU countries combined in this respect by the end of the 10-year period.<sup>25</sup> The Commission's main recent focus on IP has been to try to achieve a single patent for the whole of the Union, but even if this were to be successful, its main effect would only be on the chemical industries. All other industries need DPI if they are to move towards their potential for innovation.

For these reasons, EU policy-makers might welcome an initiative which could be extended to other member countries if it proves to be successful. They cannot afford to ignore any possibility of economic innovation, and if DPI was shown to work well in one EU country, it could be adopted quickly and easily in others. The EU authorities themselves use DPI for their database Directive, and the great success of both international plant variety protection and the US Orphan Drug Act in also applying the same principle, must encourage them to approve a trial of it. The same authorities also spent several years of time and effort trying to develop a "Utility Model" Directive to protect inventions which cannot meet the standards required to get a patent. Some countries, such as Germany and Japan, already have a form of this in the form of "petty patents". However, this project was abandoned because of the difficulty of obtaining agreement between Member States. As a by-product of its own main effect, DPI would give all the protection that was then being sought by the European Commission, and more.

There is yet another reason why the EU authorities might endorse an initiative that could lead to an upsurge of economic innovation within the Union. This is that DPI could give its firms a useful advantage in innovation, over their US competitors. Article 1.8 of the United States Constitution, which enables Congress to pass patent and copyright laws, would inhibit the US Government from introducing DPI to give its own firms the same advantages, and might even prevent it altogether.<sup>26</sup>

The State of Florida tried to introduce full scale DPI to protect its boatbuilding industry, but the Supreme Court ruled against it in light of art.1.8, so that the result was the weaker boat hull protection in the 1998

<sup>24</sup> See Kingston, *Beyond Intellectual Property* (2010), p.70.

<sup>25</sup> W. Kingston and K. Scally, *Patents and the Measurement of International Competitiveness* (Cheltenham and Northampton, MA: Edward Elgar, 2006).

<sup>26</sup> See Paul J. Heald and Suzanna Sherry, "Implied limits on the legislative power: the intellectual property clause as an absolute constraint on Congress" [2000] *University of Illinois Law Review* 1119, 1123.

Copyright Act. The Orphan Drugs Act is valid because it falls under another provision of the Constitution, the "Commerce clause", which regulates "trade between the States, with the Indians and with foreign countries". However, generally applicable DPI would protect information far more widely than this Act, so that its introduction would run up against the problem that:

"To allow Congress to do things under its general commerce power that it is forbidden to do under its specifically applicable copyright and patent power would in essence read the Copyright and Patent Clause out of the Constitution. Such an approach could hardly be said to be faithful to the text of the Constitution and the intent of the Framers."<sup>27</sup>

Although DPI is not intended to replace patents, it would certainly be seen as having an effect on them. Consequently, it would not be easy for an American administration to introduce it, and any attempt to do so would undoubtedly be tested in its Supreme Court.

### Mitigating patent protection costs in the United States

Of all the gaps in information protection in the patent system, its greatest failure in respect of investment in innovation is the cost of resolving disputes. Although patents are spoken of as "property", as in IP, they do not have the crucial component of other kinds of property, that the state will use its policing power to protect their owners. Consequently their value, or indeed whether they have any value at all, comes down to whether or not these owners can afford to enforce their so-called rights in the courts.

This disadvantage is at its most extreme for firms from outside the United States which need protection for inventions in that country, because the cost of litigation there is so much higher than anywhere else. Also, although there is no evidence of xenophobic bias in the US Patent and Trademark Office or in the Court of Appeals for the Federal Circuit, this is not the case at the district court level, where all patent litigation must begin. Where juries are involved, decisions strongly tend to favour local firms.<sup>28</sup> Nor has the US Government shown itself to be active in providing a level playing field. Until quite recently, it was in clear breach of its Paris Convention obligation of "national treatment" by refusing to accept evidence of invention abroad in its "Interference" procedures (which deal with near-simultaneous inventions).<sup>29</sup>

These difficulties are compounded for foreigners by the aggressiveness of American firms towards claims to ownership of information. In research covering all countries in the EU, every single US patent owned by a small- or medium-sized European business which appeared to have potential economic value was found to have been infringed.<sup>30</sup> Because US litigation costs can easily be counted in millions of US dollars, the risk of challenging the infringers could only be taken in the rarest cases. Given the proved bias of the lower courts, and the right of an infringer to decide where a case will be tried, unless a foreign patentee has enough funds to be able to lose in the district court and go on to appeal, the prudent course is to accept defeat immediately.

This makes the patent grant effectively worthless, which is particularly damaging to innovation in countries other than the United States because any invention of significance cannot do without protection there. Patent insurance is nominally available, but only at prohibitive cost. The EU spent a considerable sum in recent years investigating whether anything could be done about this, but concluded that it could not.<sup>31</sup> The German Insurance Federation had studied this earlier, and shown that insurance could not be

<sup>27</sup> R.F. Merges and G.H. Reynolds, "The Proper Scope of the Copyright and Patent Power" (2000) 37 *Harvard Journal on Legislation* 45, 63. See also William Kingston, *Beyond Intellectual Property* (Cheltenham: Edward Elgar, Publishing, 2010) p.84.

<sup>28</sup> Kimberly Ann Moore, "Xenophobia in American Courts" 1992 97(4) *Northwestern Law Review* 1497.

<sup>29</sup> See Kingston, *Beyond Intellectual Property* (2010), p.91.

<sup>30</sup> European Commission, *Enforcing Small Firms' Patent Rights* (Luxembourg: CORDIS, 2001).

<sup>31</sup> Report available at [http://ec.europa.eu/internal\\_market/search\\_en.htm?hl=en&as\\_sitesearch=ec.europa.eu%2Finternal\\_market%2F&cx=010624300341678344703%2F](http://ec.europa.eu/internal_market/search_en.htm?hl=en&as_sitesearch=ec.europa.eu%2Finternal_market%2F&cx=010624300341678344703%2F) [Accessed September 24, 2012].

provided economically in a situation where only the patents most likely to give rise to a claim would be insured.

### *"Contingency fee" litigation in the United States*

This gap in patent protection could be plugged to a significant extent if patentees from abroad were able to take advantage of the existence in the US of litigation on a "contingency fee" basis, which is not available in Europe. Although a US judge has power to award costs to one party, this rarely happens. The normal procedure is that each side pays its own costs, win or lose. On a contingency fee basis, a client does not have any liability to pay his own lawyers, but if he wins, these lawyers are entitled to receive a large share of whatever damages are awarded. Forty per cent is typical for this and a 50-50 split is not uncommon, especially if there is an appeal. Several competent legal practices undertake this kind of work. Moreover, US courts can and do award triple damages for deliberate infringement. Because of such provisions, a patentee who lacks money but who has a good case can get it argued in the courts.

Nevertheless, a serious obstacle remains to be overcome. Although in contingency fee cases the US legal firm is investing the time and expertise of its staff at its own risk, and the prospect of a very large payoff is a valuable motivating factor for them, its client still has to pay all related costs, such as for discovery of documents, expert witnesses, court charges and the like. Infringers are very skilful at imposing such charges to intimidate opponents. Even though these costs are small compared with those of the lawyers, they are more than enough to deter almost any smaller European firm or a university, even if they were able find a law firm to take a case on a contingency fee basis.

To deal with this, arrangements could be made to provide public funding of these incidental costs where a firm has found a law firm in the United States that is willing to take its patent case on a contingency fee basis. This funding would not be a grant, but a loan, repayable only out of damages obtained through the litigation. That is, there would be no liability to the government on the part of the patentee if the case was lost.

This approach also has the great advantage of recognising the limitations of bureaucracy in anything to do with innovation. Centralised administration can only work successfully to the extent that the information on which it has to act is substantially complete. Innovative action, in contrast, is characterised precisely by the absence of information, for which imagination has to substitute as far as it can. Those administering the scheme would not be asked to use imagination in evaluating projects or estimating the chances of winning a case, because no law firm will take a case on a contingency payment basis unless it considers that it has a good chance of making money out of it. No possible evaluation of the likelihood of a successful outcome by civil servants could be better than that of the legal firm which would be making its own very large investment in it. Since the relevant costs would all be court-related, they would be easy to audit. Establishing an approved list of contingency fee lawyers would give even more "cover" to the lenders, but once a firm on this list confirmed its readiness to take a case, provision of the loan for incidental expenses should be automatic.

### *A valuable deterrent*

The very existence of such a scheme would in fact be a powerful deterrent to intimidation by US infringers, so that the number of cases where it would actually be necessary to call on public funds would likely be few. The number where these funds would not be repaid from damages won should be even fewer. This is because virtually all decisions to intimidate are taken by middle management in large firms. In terms of effect on the career path of someone at this level, it is one thing to bully a smaller firm (especially a foreign one) with threats of causing them heavy legal costs, if it can be assumed that they do not have the resources to resist. It is an entirely different matter if there is support from a competent law firm, motivated

to invest its own time and expertise in the case, together with some public funding, to make the playing field level. In that case, the prudent course for such a manager is to recommend that his firm negotiates for the IP it wants to use, instead of infringing it. It would not be worth the risk to a career of being the individual who was responsible for a decision leading to expensive litigation when there was an alternative.

The recent case of All Voice Computing in the United Kingdom illustrates the potential of the approach proposed. This small firm's patents were infringed in the United States, but it was able to find lawyers to take its case on a contingency fee basis. After 13 years of obstruction, to which the US Court of Appeals finally put an end, All Voice won a settlement. The incidental costs forced on it by its opponents over this period ran close to seven figures in US dollars. The amount of the settlement obtained has not been disclosed, but its scale can be inferred from the fact that its Managing Director testified to a government inquiry that because of it his tiny firm had paid more tax in the United Kingdom in 2009 than either Microsoft or Google. He, and other small high-tech business owners have since founded SMEIA (Small and Medium-sized Business Innovation Alliance) which is working to get better legal protection for innovatory firms.<sup>32</sup>

### *Commercialisation of scientific research*

Apart from the encouragement to innovative firms, such a scheme should also be valuable for commercialisation of any results of funding of university research. If projects emerge out of this which have a global potential, patent protection in the United States would be essential for their commercialisation. But, without the support for litigation now proposed, most such results, if they are licensed at all, will earn much less than their true value, since potential licensees will know that no university could afford the risk of litigation to defend a patent in the United States.

### **Conclusion**

Putting DPI into effect would require little expense because it would be carried out by existing public resources such as the Intellectual Property Office (IPO) as having special expertise in the field, the various industrial promotion agencies and the civil servants who draft legislation and deal with the EU. The research and book on DPI commissioned by the EU specifically foresaw that national patent offices might transform themselves into innovation offices for administering the new kind of protection. Now that the Lisbon Treaty has definitively moved control of IP matters to Brussels, the eventual introduction of the Community patent might leave the IPO with enough spare resources and personnel to take on the work of administering DPI. The arrangements for dealing with contingency fee litigation in the United States would require some initial funding, but much of this could be expected to be recycled as loans were repaid from damages obtained.

### *Preparatory conference*

When the European Commission decided to investigate DPI, a start was made through a conference in Luxembourg to discuss the proposals. It might be useful to hold a similar conference, with contributions from sources such as the secretariats of TRIPS, the World Intellectual Property Organization and UPOV, the Innovation Directorate of the European Commission, the authorities in the United States and other countries which use DPI in their orphan drug schemes, and lawyers and others with experience in the working of plant variety, functional design and boat hull protection arrangements.

<sup>32</sup> See <http://www.smeia.org> [Accessed September 24, 2012].

*The next long economic "cycle"?*

Western economies are currently searching for any possible means of stimulating growth. Among the contributions of Joseph Schumpeter to economics was his understanding of long economic cycles, and how these are initiated by "clusters" of innovations.<sup>33</sup> Historically, there has been a remarkable coincidence between the emergence of such clusters and legal changes which improve the protection of information.<sup>34</sup> This suggests that institutional change could stimulate a new cycle. One part of this clearly has to be reversal of the dominance of financial innovation, but if this can be achieved, DPI appears to have considerable potential for making investment in technological innovation attractive once more.

<sup>33</sup> J.A. Schumpeter, *Business Cycles* (New York: McGraw Hill, 1939).

<sup>34</sup> See Kingston, *Beyond Intellectual Property* (2010), p.14.