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## Second Tier Patent Protection

Mark D. Janis\*

The problem of access to the patent system, particularly for small enterprises,<sup>1</sup> currently dominates the patent policy debate internationally. Although the access problem can be conceptualized in a variety of ways,<sup>2</sup> it is often defined narrowly in terms of the prohibitive costs of acquiring and enforcing patent rights.<sup>3</sup>

A number of the responsive strategies currently being implemented entail direct reform of the regular patent system through fee reductions<sup>4</sup> or substantive reforms. However, an important trend emerging in many regions of the world focuses on an additional strategy in which access to the patent system is to be enhanced by the expansion (or, in some cases, the creation) of an entirely separate regime of rights, known variously as the "utility model," the "petty patent," or, generi-

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1. I will adopt the European convention of referring to "SMEs" (small and medium-sized enterprises), by which to refer to small-sized technology enterprises and independent inventors.

2. See *infra* Part II.A for some examples.

3. See, e.g., Michael N. Meller, *Planning for a Global Patent System*, 80 J. PAT. & TRADEMARK OFF. SOC'Y 379, 380 (1998) (identifying the cost of worldwide patent coverage as an "overwhelming" problem for patent applicants); Erwin F. Berrier, *Global Patent Costs Must be Reduced*, 36 IDEA 473 (1996); see also Promoting Innovation Through Patents: Green Paper on the Community Patent and the Patent System in Europe, Doc. COM(97)314 final § 5.2, at 22-24 (June 1997) (referring to the high cost of acquiring patent protection in Europe).

4. Concerning fee reductions in the United States, see, e.g., *Patent and Trademark Office: Final Rule Reduces Fees with Expiration of Surcharge*, 56 PAT., TM. & COPYRIGHT. J. (BNA) 350 (July 30, 1998); *Legislation: House Passes Authorization Bill Decreasing Patent Office Fees*, 56 PAT., TM. & COPYRIGHT. J. (BNA) 350 (May 14, 1998). Concerning Europe, see *Patents: Paris Conference Debates Proposals to Reduce High Costs of EU Patents*, PAT., TM. & COPYRIGHT. DAILY (BNA) (Oct. 23, 1997) (considering proposals to reduce translation costs for patent applications filed with the European Patent Office); *European Patent Office: EPO Announces Fee Reductions in 1997 to Total DEM 140*, PAT., TM. & COPYRIGHT. DAILY (BNA) (Jan. 6, 1997) (announcing 20% fee reductions effective July 1997, for the stated purposes of responding "to calls worldwide for lower patent costs," and "making European patents more attractive, especially for independent inventors and small and medium-sized firms"); see also *United Kingdom: Patent Office Reduces Patent Examination Fees*, PAT., TM. & COPYRIGHT. DAILY (BNA) (Feb. 10, 1997) (announcing a 21% reduction in fees for examination of patent applications filed at the U.K. Patent Office, effective January, 1998, "which will benefit small and medium-sized enterprises in particular"). Concerning recent fee reductions at the Japan Patent Office and materials relating to the Third International Symposium on the Reduction of Patent Costs, June 29-30, 1998, see <<http://www.jpo-miti.go>>.

cally, the "second tier patent."<sup>5</sup> While these regimes vary considerably, they commonly feature relatively short-term protection,<sup>6</sup> protectability standards that may be less rigorous than those applicable to regular patents,<sup>7</sup> and the granting of rights without any prior examination for compliance with substantive protectability standards.<sup>8</sup>

Second tier protection has been considered a backwater of intellectual property. For example, the TRIPs agreement dutifully establishes minimum substantive standards for each of the major intellectual property regimes<sup>9</sup> but fails explicitly to mention second tier protection,<sup>10</sup> leaving WTO member countries free to formulate or reject second tier protection regimes as they see fit.<sup>11</sup> The Paris Convention<sup>12</sup> includes

5. Classical "utility model" regimes, as I refer to them, are regimes that feature relatively short-term protection but reflect origins in design law, particularly by employing a diminished standard of inventiveness, as compared to regular patent law, and by extending protection only to subject matter that meets a "three-dimensional form" requirement. *See, e.g., infra* Part I.A (describing classical utility model regimes).

The term "petty patent" refers to regimes that feature relatively short term protection but otherwise closely resemble regular patent systems, especially in regard to inventiveness standards. *See, e.g., infra* Part I.B.2.b (discussing the Australian petty patent system).

"Second tier patent" is used herein as a generic label encompassing utility models, petty patents, and modern regimes that are comparable to petty patent regimes in that they discard the three-dimensional form requirement but otherwise borrow heavily from classical utility model regimes. *See infra* Part I.C.

Unfortunately, the "utility model" label is used rather indiscriminately in the literature, masking significant conceptual differences between regimes that require "three-dimensional form" and those that do not. For example, the European proposal discussed in this paper is denominated a "utility model" proposal even though it is more properly a second tier patent proposal. *See infra* Part I.C.

6. Typically, second tier regimes offer terms that extend no longer than about ten years from the application filing date. John Richards, *Petty Patent Protection*, 2 INTERNATIONAL INTELLECTUAL PROPERTY LAW AND POLICY CH. 47, 47-13 (Hugh C. Hansen, ed. 1996) (providing a listing of terms in Table I). By contrast, the international standard for the term of regular patents, established in Article 33 of the TRIPs component of the GATT agreement, is twenty years from the application filing date. General Agreement on Tariffs and Trade: Multilateral Trade Negotiations Final Act Embodying the Result of the Uruguay Round of Multilateral Trade Negotiations, Apr. 15, 1994, D.O.S. 95-33, 33 I.L.M. 1125, 1197 (Annex 1C: Trade Related Aspects of Intellectual Property Rights) [hereinafter TRIPs Agreement].

7. For example, second tier regimes may feature a relaxed version of the obviousness/inventive step criterion. *See, e.g., infra* note 64 and accompanying text (discussing the diminished inventive step standard in German law).

8. *See, e.g., infra* note 98 (discussing Japanese law). For a comparative analysis of existing regimes, *see infra* generally Part I.B.2.

9. *See, e.g.,* J.H. Reichman, *Universal Minimum Standards of Intellectual Property Protection Under the TRIPs Component of the WTO Agreement*, 29 INT'L LAW. 345 (1995).

10. *See, e.g.,* Uma Suthersanen, *A Brief Tour of "Utility Model" Law*, 20 EUR. INTELL. PROP. REV. 44, 45 (1998) (confirming this observation). *See also* TRIPs Agreement, *supra* note 6, at Art. 1(2) (stating that "the term 'intellectual property' refers to all categories of intellectual property that are the subject of Sections 1 to 7 of Part II," none of which deal expressly with second tier patent rights).

11. This may prove to be a significant omission from TRIPs given the increasing popularity of second tier regimes, especially among developing countries. *See infra* notes 219-221 and accompanying text.

12. Paris Convention for the Protection of Industrial Property, Mar. 20, 1883 as last revised at Stockholm, July 14, 1967, 21 U.S.T. 1583, 828 U.N.T.S. 305 [hereinafter Paris Convention].

second tier protection in its definition of the categories of industrial property,<sup>13</sup> but, apart from extending national treatment<sup>14</sup> and priority<sup>15</sup> to second tier patents, it establishes no important benchmarks for this form of protection.

Worldwide interest in second tier patent regimes appears to be substantial. More than sixty countries currently offer second tier patent protection, including key patenting jurisdictions such as Germany and Japan.<sup>16</sup> A dozen or more countries have created second tier regimes in their national patent laws since the mid-1980s.<sup>17</sup> In North America, Mexico introduced a second tier regime in the early 1990s,<sup>18</sup> and at least one scholar has recently urged that Canada consider second tier protection.<sup>19</sup>

Most importantly, the European Commission is moving to expand the role of second tier regimes at the pan-European level. A proposal to harmonize existing second tier regimes in EU member states has now reached an advanced stage of consideration.<sup>20</sup> A harmonized system of second tier patent protection is now spoken of in Europe as one of the

13. *Id.* at Art. 1(2) ("The protection of industrial property has as its object . . . utility models . . ."). See also *id.* at Art. 1(4) ("Patents shall include the various kinds of industrial patents recognized by the laws of the countries of the Union, such as patents of importation, patents of improvement, patents and certificates of addition, etc.").

This article, along with several others, has been effectively incorporated into the TRIPs Agreement. TRIPs Agreement, *supra* note 6, at Art. 2(1). Accordingly, commentators have generally assumed that TRIPs at least implicitly recognizes the existence of second tier protection, even though it does not lay out any minimum substantive standards for second tier protection. See, e.g., Suthersanen, *supra* note 10, at 45 note 10; J.H. Reichman, *From Free Riders to Fair Followers: Global Competition Under the TRIPs Agreement*, 29 N.Y.U. J. INT'L L. & POL. 11, 74 n.248 (1996-97).

14. *Id.* at Art. 2(1).

15. *Id.* at Art. 4(A)(1).

16. Suthersanen, *supra* note 10, at 44. For a country-by-country listing, see, e.g., Richards, *supra* note 6, at 47-15 (Table II).

17. See, e.g., Rudolf Krasser, *Developments in Utility Model Law*, 26 INT'L REV. INDUS. PROP. & COPYRIGHT. L. 950, 956-57 (1995) (listing countries which have adopted utility model legislation in the 1980s and 1990s and giving corresponding citations to the relevant legislation).

18. See, e.g., Gretchen A. Pemberton & Mariano Soni, Jr., *Mexico's 1991 Industrial Property Law*, 25 CORNELL INT'L L.J. 103, 123 (1992) (relating that Mexico introduced a utility model regime in 1991).

19. Michael Crinson, *Is Some Novel Protection of Invention Needed in Canada?*, 12 INTELL. PROP. J. 25 (Dec. 1997).

20. Proposal for a European Parliament and Council Directive Approximating the Legal Arrangements for the Protection of Inventions by Utility Model, COM(97)691 final; O.J. C 36 (Mar. 2, 1998) [White Paper], and the associated Opinion of the Economic and Social Committee on the Proposal for a European Parliament and Council Directive Approximating the Legal Arrangements for the Protection of Inventions by Utility Model, O.J. C 235, July 27, 1998 [hereinafter July 1998 Opinion]. These build on the Green Paper: The Protection of Utility Models in the Single Market, COM(95)370 final, and the associated Opinion of the Economic and Social Committee on the Green Paper: The Protection of Utility Models in the Single Market, O.J. C 174 (June 17, 1996) [hereinafter June 1996 Opinion]. While most of the current EU member states already have some form of second tier protection, the U.K., Sweden, and Luxembourg currently do not. See COM(97)691 final, at Part I-B ("Introducing Rules on Utility Model Protection in Those Countries Where There Are None").

four "Community pillars for protection of industrial property . . ."21 This trend to embrace second tier patent regimes may ultimately prove irresistible to the United States, which has never had second tier patent protection. Indeed, calls for the introduction of second tier protection in United States patent law, though rare, do exist currently.<sup>22</sup>

In this Article, I argue that proposals for expanding second tier patent protection are largely misguided. In Part I, I describe the features of classical utility model regimes and consider the quite recent transition from the classic regimes to modern second tier patent regimes. I argue, contrary to the position that appears to be expressed by policy-makers in Europe and elsewhere, that there are fundamental conceptual differences between the two regimes and that long experience with the former should not be mistaken as a justification for the latter.

In Part II, I critically examine second tier patent proposals from a policy perspective. I find fault with the rationale that second tier regimes can address the access problem, and I express doubts about whether the harmonization of second tier regimes can serve as a worthwhile prototype for regional or worldwide substantive harmonization of regular patent laws. In general, I conclude that second tier proposals appear to promise far more than they can reasonably deliver and are particularly deficient in their failure to consider enforcement costs.

21. See Opinion of the Economic and Social Committee on 'Promoting Innovation through patents: Green Paper on the Community patent and the patent system in Europe' (98/C 129/03), Official Journal of the European Communities C 129/8, C 129/11 (Apr. 27, 1998) (listing as the other "pillars" the Community patent, the Community trademark, and the Community design).

In this Article, I conceptualize second tier protection as a species of patent protection and construct a policy and theoretical analysis that is in keeping with that conceptualization. Other scholars have considered second tier or utility model protection from the very different perspective of design protection, identifying the utility model as one of several options for the protection of functional aspects of product configuration. See, e.g., Graeme B. Dinwoodie, *Federalized Functionalism: The Future of Design Protection in the European Union*, 24 AIPLA Q.J. 611 (1996) (touching on utility model protection in the context of an assessment of Community design proposals); J.H. Reichman, *Industrial Designs and Utility Models Under the European Communities' Proposed Initiatives: A Critical Appraisal*, in 2 INT'L INTELL. PROP. L. & POL'Y CH. 48, 48-10 to 48-11 (1996) (Hugh Hansen, ed.) (identifying utility model protection as the proposed fourth layer of intellectual property rights in functional designs, the other layers including design and copyright regimes); J.H. Reichman, *Design Protection in Domestic and Foreign Copyright Law: From the Berne Revision of 1948 to the Copyright Act of 1976*, 1983 DUKE L.J. 1143, 1215-20 (1983) (discussing the Italian Design Law of 1940, which encompassed both design and utility model protection).

22. See, e.g., *Prior Commercial Use and Patent Infringement: Hearings Before the House Committee on the Judiciary, Subcommittee on Courts, and Intellectual Property*, 104th Cong. 21 (1995) (statement of Professor Karl F. Jorda):

It is not possible and practicable to obtain patents on all patentable albeit marginal inventions and it would be much too costly. (In this context it would be a very good idea to establish a utility model or petty patent system or short-term patent system as have existed or are now being introduced in most foreign countries. Such a system would narrow the perceived gulf between patent and trade secrets and permit the patenting of marginal inventions at affordable costs.)

In Part III, I explore the theoretical ramifications of second tier patent protection. I first propose that second tier regimes may encourage the subdivision of patent rights into narrowly defined bundles spread among a large number of follow-on improvers. Applying recent scholarship in property theory, I assess whether second tier patent regimes may give rise to a “tragedy of the anticommons.”

I next consider the economic consequences of the diminished or “soft” obviousness standard featured in second tier proposals. I conclude that while Professor Kitch’s “prospect” theory of patent systems arguably supplies an alternative economic basis for the second tier regime’s soft obviousness standard, the many criticisms of that theory apply with particular force to second tier patent regimes.

Finally, I consider second tier regimes as raising the question of whether a property regime or a liability regime is better suited to achieving socially optimal levels of subpatentable innovation. Here I briefly note Professor Reichman’s warnings against the proliferation of intellectual property hybrids and his conclusion that the protection of subpatentable innovation is better left to liability regimes than to a new layer of patent rights.

## I. THE TRANSITION FROM UTILITY MODEL REGIMES TO SECOND TIER PATENT REGIMES

Utility model regimes have existed in some countries for over one hundred years.<sup>23</sup> It might be tempting to use this fact to subvert any extensive policy or theoretical discussion of utility model protection, on the basis that if utility models have not fomented disaster by now, they are unlikely to do so any time in the near future. Indeed, the debate over harmonizing second tier protection in Europe seems to lean heavily on this assumption of historical precedent.<sup>24</sup>

Closer examination, however, reveals that the historical experience with classical utility model regimes is manifestly less instructive for current debates than proponents might assume. The principal reason is that utility model protection, viewed over time, cannot properly be understood as a monolith. An analysis of utility model regimes existing in intellectual property systems over the past century reveals a critical conceptual transition, from classical utility model regimes originating in design protection concepts, to modern second tier patent proposals that represent the culmination of a dramatic transition towards patent concepts. Thus, the starting point for a proper analysis of second tier patent proposals is to set them against a more precise historical context. With the benefit of that context, modern second tier regimes dip

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23. The German utility model system is perhaps the best known. *See infra* Part I.A.

24. *See infra* Part I.C. for a discussion of current European proposals.

very deeply into patent concepts and implicate patent policy and theory concerns more powerfully than modern proposals may appreciate.

### A. Classical Utility Model Regimes

The concept of a utility model has been known overseas for at least 150 years. The earliest antecedent to classical utility model regimes appears to be the United Kingdom's Utility Designs Act of 1843.<sup>25</sup> Early in the nineteenth century, turmoil in the regular British patent system<sup>26</sup> and in the design protection laws spawned reform efforts which eventually yielded two new acts: the Ornamental Designs Act of 1842 and the Utility Designs Act of 1843.<sup>27</sup> Both regimes were administered by the Designs Registry.<sup>28</sup> The Ornamental Designs Act protected ornamental designs that had been applied to articles of manufacture.<sup>29</sup> The Utility Designs Act protected designs for the shape or configuration of useful articles of manufacture.<sup>30</sup>

Even though the Utility Designs Act of 1843 came into being in part as a result of perceived inadequacies in the regular patent system, the Act's approach to eligible subject matter was firmly rooted in principles of design protection that were conceptually remote from regular patent protection. Some commentators, at least, considered that the Act's limitations on eligible subject matter also qualified the scope of protection that should logically be accorded to a design registered under the Utility Designs Act: only external appearance or "form," not function or principle, was protected.<sup>31</sup> In practical terms, this meant that the scope of protection was limited to the form of the article as depicted in the drawing,<sup>32</sup> a dramatically narrower range of coverage

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25. 6 & 7 Vict. ch. 65. For an excellent recent discussion, see Lionel Bently & Brad Sherman, *The United Kingdom's Forgotten Utility Model: The Utility Designs Act of 1843*, 3 INTEL. PROP. Q. 265 (1997). See also STEPHEN P. LADAS, 2 PATENTS, TRADEMARKS, AND RELATED RIGHTS: NATIONAL AND INTERNATIONAL PROTECTION § 548 (1975) (describing the Utility Designs Act of 1843 as the probable first utility model regime).

26. Notably, detractors argued that the British patent system was too administratively complex, and the application procedure too costly and time consuming, Bently, *supra* note 25, at 267-68, demonstrating a remarkable historical continuity in complaints against patent offices extending from the early 19th century to the present day.

27. *Id.* at 268.

28. *Id.* at 269.

29. *Id.* at 268. This is reminiscent of the subject matter provision appearing in the current U.S. design patent statute. See 35 U.S.C. § 171 (1995) ("Whoever invents any new, original and ornamental design for an article of manufacture may obtain a patent therefor . . .").

30. Bently, *supra* note 25, at 268.

31. *Id.* at 270 (citing the views of Carpmael and Webster).

32. *Id.* at 271. In this respect, as well, the regime compares loosely to current U.S. design patent law. U.S. design patent documents feature a *pro forma* claim accompanied by drawings that constitute the reference point for establishing the scope of protection. 37 C.F.R. § 1.153(a) (1998). See also *Dobson v. Dornan*, 118 U.S. 10, 14-15 (1886) (accepting a claim for a design that referred to the accompanying drawings using the phrase "as shown"); *Dobson v. Hartford Carpet Co.*, 114 U.S. 439, 446 (1885) (same); *In re Mann*, 861 F.2d 1581, 1582 (Fed. Cir. 1988) ("The

than would be afforded by, for example, a modern utility patent system resting on peripheral claiming principles.<sup>33</sup> This view established the basic pattern for the classical utility model regime that emerged later in Germany<sup>34</sup> and which still exists today in selected countries.<sup>35</sup>

From the outset, however, other commentators insisted that the Utility Designs Act of 1843 had actually created a surrogate patent system. Seeming to substitute the Act's motivation for its actual language,<sup>36</sup> these commentators argued, for example, that the scope of a utility design could extend to functional equivalents of the embodiment illustrated in the drawing.<sup>37</sup> This pressure for dramatic expansion of the role of the utility model system seems to have resurfaced periodically throughout the history of utility model regimes and has manifested itself most recently in legislative proposals in Europe and Australia, as well as in recent scholarly literature.<sup>38</sup>

Interest in the U.K. utility designs regime flared briefly but then fell off sharply in the late nineteenth century, finally being reduced to insignificance by a series of judicial and legislative actions culminating in 1919.<sup>39</sup> However, the essential character of the classical utility model regime had been established. When Germany introduced its utility model regime in 1891,<sup>40</sup> it remained firmly and essentially a creature of design protection. The German system in turn became the prototype for numerous other utility model regimes.

While the U.K. Utility Designs system sprang from dissatisfaction with the cumbersome administrative procedures entailed in obtaining U.K. protection, it appears that the genesis of the German system de-

claim . . . is limited to what is shown in the application drawings.”)

33. For a concise explanation of peripheral claiming theory, *see, e.g.*, TOSHIKO TAKENAKA, *INTERPRETING PATENT CLAIMS: THE UNITED STATES, GERMANY AND JAPAN* CH. 1 (1995).

34. *See infra* Part I.B.

35. *See infra* Part I.C.

36. While there seems to have been abundant evidence that the infirmities of the patent system stimulated the efforts to create the Utility Designs Act, it is unclear if the Act, taken at face value, really created an all-purpose alternative to the patent system. It seems questionable that the Act really was, as some commentators put it, an “act for making patents cheap” and emancipating inventors from “that enormous load of oppression, which our wretched and monstrously expensive system of patent law has for ages imposed on them . . .” Bently, *supra* note 25, at 269 n.26 (citing sources for this view).

37. *Id.* at 272.

38. *See infra* Part I.C.

39. *Id.* at 276–77. Reforms to the regular patent system appear to have stimulated the trend away from the utility designs regime (referring to reforms to the complexity and cost structure of patent office administration). This exemplifies a dynamic between regular patent reform and the evolution of utility model regimes that should be recognized as relevant today. *See infra* note 235 and accompanying text.

The utility model as a formal legal regime has never reappeared in U.K. intellectual property law, although one scholar has argued that the unregistered design right may be analogous to the classical form of utility model. *See* WILLIAM CORNISH, *INTELLECTUAL PROPERTY* ¶ 3-32 (1996), *cited in* Suthersanen, *supra* note 10, at 48, note 42.

40. *See, e.g.*, Richards, *supra* note 6, at 47-2 (referring to the effective date).



rived in part from the traditionally stringent German patentability standards. German patent law at the time required that inventions represent a *technischer Fortschritt*, or "technical step forward in the art," a standard that reportedly was too elevated to be met by minor inventions.<sup>41</sup> Accordingly, Germany introduced the *Gebrauchsmuster*<sup>42</sup> system, which featured a lower standard of inventiveness,<sup>43</sup> no pre-grant examination,<sup>44</sup> and a very short term of protection (three years from the application date, renewable for an additional three-year term).<sup>45</sup>

Conceptually, the German system was not a supplemental patent regime.<sup>46</sup> The German system expressly limited utility model subject matter to movable articles having three dimensions.<sup>47</sup> Subject matter such as processes, which presumably would have fallen within the scope of eligible subject matter in the regular patent regime, were unequivocally excluded from the utility patent regime,<sup>48</sup> as were electrical circuitry and other articles whose external appearance were unrelated to their functionality.<sup>49</sup> In short, the German utility model re-

41. *Id.* See also LADAS, *supra* note 25, § 548, at 949.

42. Ladas reports that the term *Gebrauchsmuster* is "the German rendering of the Old English term 'Useful Design' or 'Useful Model.'" LADAS, *supra* note 25, § 554, at 950.

43. *Id.* § 552, at 953 (referring to the "milder approach to the requirements of technical advance or inventive activity" that characterizes the German *Gebrauchsmuster* system and its progeny); Roland Liesegang, *German Utility Models after the 1990 Reform Act*, 20 AIPLA Q.J. 1, 4-5 (1992) ("The inventive level required for utility models has always been lower than that for patents . . .").

44. LADAS, *supra* note 25, § 554, at 954; E. Hausser, *Utility Models: The Experience of the Federal Republic of Germany*, 26 INDUS. PROP. (No. 1) 314, 316 (July/August 1987) (explaining that the German system has not traditionally featured examination for compliance with novelty, inventive step, and industrial applicability; rather, there is simply an examination for formal requirements and for subject matter eligibility).

45. LADAS, *supra* note 25, § 555, at 954.

46. Krasser, *supra* note 17, at 953 (asserting that utility model protection was introduced as a supplement to 1876 legislation protecting copyrights and designs). Patent protection for functional designs was apparently available under the Patent Act of 1877, but only at great expense. *Id.*

47. Liesegang, *supra* note 43, at 2 (describing utility model protection under the traditional regime as being limited to "working tools and implements, articles of everyday use or parts thereof," that is, to three-dimensionally configured movables ('Raumform-Efordernis' — three-dimensional concrete shape requirement)). See also LADAS, *supra* note 25, § 551, at 952 (also emphasizing that the article must have "a definite shape"); COM(95)370, *supra* note 20, at 63 (citing German language sources on the historical rationale for the spatial form requirement).

The absence of any reference to "invention" in the subject matter provision of the utility model legislation provides further support for the view that the legislation was not originally conceptualized as creating a second tier patent regime. Krasser, *supra* note 17, at 953 (reporting that the provision called for the protection of "models of working equipment or utility articles or parts thereof . . . to the extent that a new design, arrangement or device is intended to serve the working or utility purpose.").

48. See also LADAS, *supra* note 25, § 551, at 952 (confirming the point).

49. Ladas reports a decision in which an electrical connection was held to fall outside the scope of eligible subject matter for a utility model because the external appearance of the connection was deemed not essential to the functionality. However, a different result followed where "the innovation inherent in the electrical connection [was] directly due to specific features of shape in regard to the mechanical construction . . ." *Id.* The latter decision seems to reflect similar pres-

gime was a classic utility model regime—that is, one that is characterized by a “pristine purpose” tied inextricably to design protection:

to prevent third parties from duplicating *the external configurations* of certain handtools and other everyday implements whose creative contribution fell chronically short of the inventive height that the mature patent paradigm required.<sup>50</sup>

Thus, the classic utility model regime, as exemplified by German legislation, was originally conceived as a form of design protection. Any claims that the long history of classical utility model regimes justifies the creation and expansion of second tier patent regimes throughout Europe and elsewhere must be viewed with some skepticism. In fact, there has been relatively little experience with actual second tier systems.

### *B. The Transition to Second Tier Patent Regimes*

Given the critical conceptual differences between classical utility model protection and second tier protection, one must look more judiciously to construct the appropriate historical context for modern second tier proposals. Such an approach reveals a pair of potential sources of experience on the operation of true second tier systems: (1) the regular patent systems in the United States and the U.K., which arguably lapsed into *de facto* second tier protection in the mid-twentieth century by default through desultory application of the obviousness/inventive step standard; and (2) recently enacted “utility model” and “petty patent” systems which have dispensed with a three-dimensional “spatial form” requirement (such as in the post-1990 German system, the Australian system, and selected others).

#### 1. *De Facto* Second Tier Patent Regimes

Neither the U.S. nor the U.K. regular patent systems sought to develop second tier patent systems in the twentieth century. It is reasonable to argue, however, that both jurisdictions allowed *de facto* second tier patent regimes to develop, albeit under somewhat different cir-

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sure for expanding the role of the utility model regime as seen in connection with commentary on the U.K. Utility Designs Act of 1843.

50. J.H. Reichman, *Electronic Information Tools—The Outer Edge of World Intellectual Property Law*, 17 U. DAYTON L. REV. 797, 808 (1992) (ascribing to utility model laws this “pristine purpose”).

Shortly after the introduction of the utility model regime in Germany, Japan introduced a utility model regime featuring substantive examination prior to grant. Richards, *supra* note 6, at 47-2. Like the German system, the Japanese regime employed a three-dimensional shape requirement. See Nobuo Monya, *Revision of the Japanese Patent and Utility Model System*, 3 PAC. RIM L. & POL'Y J. 227, 241-42 (1994).

cumstances. In the U.K., under the Patents Act of 1949, the patent office examined regular patent applications only for novelty, not for inventive step.<sup>51</sup> Inventive step only came into issue if a third party initiated an administrative opposition proceeding against the grant of patent protection (or a post-grant administrative cancellation proceeding),<sup>52</sup> or if a third party (e.g., a defendant in an infringement action) initiated a revocation action in court.<sup>53</sup> Even in these instances, the inventive step standard was considerably more relaxed than predominant standards today. For example, in an opposition, the opposer bore the burden of showing that the claimed invention was "clearly lacking in inventive step,"<sup>54</sup> and all doubts were resolved in favor of the patentee.<sup>55</sup> Similarly, in litigation, courts frequently formulated the inventive step requirement as entailing the need to show only a "scintilla of invention."<sup>56</sup> This collection of rules arguably gave rise to a *de facto* second tier patent system that became an unacknowledged adjunct to the regular patent system.<sup>57</sup>

51. Patents Act, 1949, § 7, reprinted in 2d JOHN P. SINNOTT & WILLIAM JOSEPH COTREAU, *WORLD PATENT LAW AND PRACTICE* at Great Britain-7-8 (1997).

52. Patents Act, 1949, § 14, reprinted in SINNOTT & COTREAU, *supra* note 51, at Great Britain-13-15 (concerning pre-grant opposition proceedings); Patents Act, 1949, § 33 reprinted in SINNOTT & COTREAU, *supra* note 51, at Great Britain-37 (specifying that the grounds for cancellation were the same as those for opposition).

53. Patents Act, 1949, § 32(f), reprinted in SINNOTT & COTREAU, *supra* note 51, at Great Britain-35. For additional commentary on the limited powers of the Patent Office to determine inventive step under the 1949 Patents Act, see CHARTERED INSTITUTE OF PATENT AGENTS, C.I.P.A. GUIDE TO THE PATENTS ACT pt. 1, § 3.09, at 72 (4th ed. 1995) (James Lahore, ed.).

54. Clifford Lees, *Do Design Problems Point to Second-Tier Protection*, 14 CAN. INTELL. PROP. REV. 213, 215 (1998) [hereinafter Lees, *Design Problems*]; Patents Act, 1949, § 14(1)(e), reprinted in SINNOTT & COTREAU, *supra* note 51, at Great Britain-14. See also C.I.P.A. GUIDE, *supra* note 53, app. § A014, at 1140.

55. See, e.g., *Re Canon Kabushiki Kaisha's Patent Application* (Chancery Div., Patents Ct. July 24, 1985) (LEXIS, Enggen Library, Cases File) (stating that in section 14 oppositions, "any doubt [was] resolved in favour of the patentee . . ."). See also C.I.P.A. GUIDE, *supra* note 53, app. § A014, at 1140 (citing *General Electric's (Cox's) Patent*, [1977] R.P.C. 421, 437 ("[S]ection 14 is designed to clear the register of patents which are manifestly untenable. It is not intended to provide a method of disposing of truly contentious cases.")).

56. See *Samuel Parkes & Co., Ltd. v. Cocker Bros. Ltd.*, [1929] 46 R.P.C. 241, 248 (articulating the "scintilla of invention" standard). Progeny of *Samuel Parkes & Co.* include *Technograph v. Mills & Rockley*, [1972] R.P.C. 346, 360 (1971) (reciting the "scintilla" standard); *Non-Drip Measure Co., Ltd. v. Strangers, Ltd.*, [1943] 60 R.P.C. 135, 142-43. The "scintilla" formulation proved so durable that modern courts, especially those applying the Patents Act, 1977, have frequently found it necessary to warn parties that it is no longer the applicable standard. See, e.g., *Mölnlycke AB v. Proctor & Gamble Ltd. (No. 5)*, [1994] R.P.C. 49, 112 (1993) (warning that in applying modern notions of inventive step, it is not useful "to extract from older judgments expressions such as 'that scintilla of invention necessary to support a patent'"). *But cf.* *Conoco Specialty Prods. v. Merpro Montassa*, [1994] F.S.R. 99, 117 (1990) (noting, en route to a determination on inventive step, that the claimed invention at issue "cannot properly be said to be devoid of a scintilla of invention . . .").

57. Lees, *supra* note 54, at 215 ("[D]e facto protection was effective in the twilight zone, where there was clear novelty but validity [in the form of compliance with the inventive step requirement] was dubious."); see also Clifford Lees, *Does the United Kingdom Need Second Tier Protection?*, *PATENT WORLD*, Sept. 1994, at 17-18 [hereinafter Lees, *Second Tier Protection*] (arguing that the

A similar pattern may be observed in mid-twentieth-century U.S. patent law. United States law at the time provided, first by judicial construction and later by statute,<sup>58</sup> that U.S. patent protection could be sustained against challenge only if the claimed subject matter demonstrated some level of inventiveness.<sup>59</sup> Nevertheless, there was a widespread perception, especially during the middle part of the century, that the Patent Office was applying the obviousness standard rather indifferently.<sup>60</sup> To the extent that this tendency went unchecked in the courts, the United States, at least at certain times, in certain art areas, had a *de facto* second tier patent regime. At the very least, the Patent Office's desultory application of the obviousness standard may have been a response to the lack of any formal utility model protection. Likewise, the well-documented judicial hostility to patent protection that dominated Supreme Court rhetoric in the mid-twentieth century may have been a reaction to the prospect of *de facto* second tier protection.<sup>61</sup>

Some interesting lessons can be drawn from the U.K. and U.S. experiences. First, as one U.K. commentator has observed, second tier patent protection "will always try to establish itself."<sup>62</sup> But this certainly does not mean that the only response to this inevitable pressure is to create a wholly separate regime of second tier property rights. Indeed, the U.K. and U.S. experiences counsel otherwise. If worthy "second tier" inventions are indeed going unprotected, then the problem might be redressed through reform of the regular patent system by lowering the obviousness standard.

1949 Patents Act was one of three possible routes by which an applicant might acquire the equivalent of second tier patent protection).

The 1977 Patents Act altered the conditions that gave rise to *de facto* second tier protection by placing inventive step within the scope of the Patent Office's pre-grant substantive examination duties. See Lees, *Design Problems*, *supra* note 54, at 218; Patents Act, 1977 §§ 1(1)(b), 3, reprinted in TERRELL ON THE LAW OF PATENTS app. 15, at 539 (14th ed. 1994) (David Young et al. eds.).

58. 35 U.S.C. § 103 (added to the patent statute in 1952).

59. Under the current statutory standard, the level of inventiveness is defined objectively, by use of the now-conventional obviousness criterion, requiring analysis of whether "the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains." 35 U.S.C. § 103(a) (1994 & Supp. I 1995).

60. As a result, many judges placed very little faith in the statutory presumption that issued patents are valid. See, e.g., Mark D. Janis, *Rethinking Reexamination: Toward a Viable Administrative Revocation System for U.S. Patent Law*, 11 HARV. J.L. & TECH. 1, 8-12 (1997) (discussing judicial hostility towards the presumption of validity and collecting sources).

61. See Jerome H. Reichman, *Legal Hybrids Between the Patent and Copyright Paradigms*, 94 COLUM. L. REV. 2432, 2459 n.117 (1994) (observing that "countries without utility model laws experience pressures on the patent law to protect minor technical inventions" and that "the antipatent attitude of the Supreme Court throughout most of the twentieth century may be viewed, in part, as expressing resistance to utility models in disguise.").

62. Lees, *Second Tier Protection*, *supra* note 57, at 17.

Second, while second tier advocates could reasonably point to the possible existence of *de facto* second tier regimes in the United Kingdom and the United States over some time period, the history of such regimes is subtle one. They do not adequately support claims that second tier patent protection is a matter of long experience.

## 2. Modern Second Tier Patent Regimes

### a. German Departure from the Classical Model

Perhaps due to its essential orientation towards design protection rather than patent protection, as manifested in the *Raumform* (spatial form) requirement, the German utility model system remained a relatively minor figure on the intellectual property landscape for most of the twentieth century. However, recent events seem to have stimulated a resurgence in interest in protection for "minor" inventions via a protection scheme that departs from the classical utility model regime and instead approaches a second tier patent regime.

Formal transition in the German utility model regime commenced with efforts to achieve Europe-wide harmonization of the regular patent system.<sup>63</sup> In order to comply with the European Patent Convention of 1978, Germany abolished its relatively strict "technical step forward" standard for inventiveness, replacing it with the less rigorous *erfinderische Tätigkeit* standard, intended to correspond with inventive

63. Some scholars have suggested that informal transition towards a second tier patent regime occurred earlier. The spatial form requirement, a central conceptual feature of the utility model system, imposed a significant restriction not only on the subject matter eligible for protection, but also on the scope of protection. If the scope of protection extended only to the external appearance of a functional design (as the spatial form requirement would seem to imply), then competitors in many cases might readily be able to design around it, thereby appropriating the functionality while varying the external appearance. Apparently some German courts found this intolerable and looked for ways effectively to confer protection for the functional advance itself. This was analogous to patent protection. As one scholar puts it:

With time, the view came to prevail that the subject matter of utility model protection was not by its very nature different from that of patent protection, but that both cases involved an invention in the sense of instructions for technical action. The requirement for spatial form was thus reduced to the function of limiting the scope of application of utility model protection to a sub-group of the types of invention for which patent protection is available. The design-law origins of the requirement were thereby lost to view.

Krasser, *supra* note 17, at 954. See also FRIEDRICH-KARL BEIER ET AL., GERMAN INDUSTRIAL PROPERTY, COPYRIGHT AND ANTITRUST LAWS I/A/7 (1996) (claiming that "[n]otwithstanding the term 'utility model' and the restriction to inventions in three-dimensional form, the utility model was in substance a 'petit' patent.'").

A similar transition reportedly was observed in Japanese utility model law. Monya, *supra* note 50, at 242 ("The practice under the Japanese utility model system has not been very strict with respect to the scope of subject matter. For example, electric circuits have been registered as utility models . . . and even buildings and innovations in materials have been registered. These registrations did not meet the subject requirement of being an article . . . Therefore, the utility model system has in practice been confused with the system for petit inventions.").

step standard. The inventiveness standard for utility models, in turn, was adjusted to *erfinderischer Schritt*, which was intended to correspond to an even lower standard.<sup>64</sup> In addition, Germany gave up its six-month grace period for regular patents,<sup>65</sup> but (because harmonization did not extend to utility models) retained it for utility models.

Reportedly, the net effect of these changes, incorporated into German utility model law in 1986, was to give the German utility model regime "a new lease on life."<sup>66</sup> Perhaps more significantly, the 1986 reform gave real momentum to proposals to abolish the spatial form limitation on eligible subject matter.<sup>67</sup> By 1989, a government-commissioned report recommended deletion of the spatial form requirement, in part as a recognition of probable judicial practices,<sup>68</sup> and perhaps, in part due to an apparent disconnection between the spatial

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64. See Liesegang, *supra* note 43, at 5 (explaining that while the *erfinderische Tätigkeit* standard for regular patents translates to "inventive activity" and the *erfinderischer Schritt* standard for utility models translates as "inventive step," this confusion traces to problems in the official translation of the European Patent Convention and it is accepted that the *erfinderischer Schritt* standard is in fact a lower standard than that which prevails across Europe for regular patents).

65. A "grace period" in this context is the time period following a public disclosure of an invention during which the inventor may file a patent application and avoid having the public disclosure qualify as a patent-defeating prior act against him. United States law, for example, currently allows a one-year "grace period." 35 U.S.C. § 102(b) (providing that "[a] person shall be entitled to a patent unless the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, *more than one year prior to the date of the application for patent in the United States . . .*") (emphasis added).

66. Richards, *supra* note 6, at 47-3. It is less than clear if the change in the inventiveness standard alone would have caused a resurgence in the German utility model system. Indeed, a significant lowering of the inventiveness standard for regular patents, along with more modest (if any) lowering of the inventiveness standard for utility models, might logically have been expected to channel more applicants towards the regular patent system. However, the retention of the grace period for utility models undoubtedly is perceived as a substantial advantage, and therefore it does seem plausible that the net effect of the changes was to intensify interest in utility model protection. See, e.g., Hausser, *supra* note 44, at 314 (asserting that the grace period makes the German utility model law particularly attractive to small enterprises, where pre-filing disclosure of inventions is more commonplace).

67. Proposals for dropping the spatial form limitation were apparently advanced in the course of the discussions leading to the 1986 reform but were not adopted. See, e.g., Friedrich Kretschmer, *Statutory Changes in German Industrial Property and Copyright Law—An Overview*, 18 INT'L REV. INDUS. PROP. & COPYRIGHT. L. 767, 770 (1987) (reporting that the government authorized a study of the matter with a report to be delivered within two years); Hausser, *supra* note 44, at 315 (noting that the spatial form requirement had generated excessive litigation and endorsing proposals to abolish it). However, while the spatial form requirement was temporarily maintained, the scope of eligible subject matter was expanded slightly to include electrical circuits so long as they could be shown to constitute part of another article meeting the spatial form requirement. *Id.*; see also Liesegang, *supra* note 43, at 3 (stating that electrical circuits would be eligible for utility model protection under the post-1986 law "if they form part of a physically concrete article and do not represent general circuit diagrams").

68. See, e.g., Krasser, *supra* note 17, at 956 (observing that the report "argued that the utility model, intended in 1891 as an industrial and technical protection right between patent and design protection for 'small inventions,' had developed over the years into a property right that supplemented patent protection. There were no obvious legal policy reasons for restricting this right to materially embodied inventions.").

form requirement as a subject matter limitation and the scope of protection.<sup>69</sup>

The proposal was adopted in 1990. Under the 1990 reform, the spatial form requirement was deleted, and the German utility model system was extended to include chemical and electrical inventions in addition to mechanical inventions, a scope of eligible subject matter essentially congruent to that of the regular patent regime.<sup>70</sup> Perhaps more importantly, any remaining uncertainty over whether the utility model's scope of protection extended only to the external appearance of the protected invention, or to the invention itself, was firmly resolved in favor of the latter.<sup>71</sup>

The 1990 changes represent the culmination of a dramatic conceptual shift in the German utility model system.<sup>72</sup> Utility model protection in Germany can no longer properly be characterized as a close cousin of design protection. It is, instead, a very different and potentially much broader protection that is only barely distinguishable from

69. The Green Paper refers to the "conundrum" under which spatial form is required as a subject matter condition, but the actual protected subject matter is really the invention itself. COM(95)370, *supra* note 20, at 55. Not surprisingly, in some national systems that continue using a spatial form requirement in their subject matter provisions, it is not easy to determine whether merely the spatial form or the actual invention is protected. *Id.*

70. See Utility Model Act § 1 (1993) ("As utility models shall be protected inventions that are new, are based on an inventive step and are susceptible to industrial application."). For an English translation of the Act, see BEIER, *supra* note 63, at I/B/201-215.

The congruency between the subject matter provisions in the Utility Model Act and the Patent Act is not perfect, because methods continue to be excluded from protection. Utility Model Act § 2(3) (English translation reprinted in BEIER, *supra* note 63, at I/B/201.). See also Liesegang, *supra* note 43, at 3-4, explaining that

The legislature's reason for continuing to exclude methods was to avoid protection scope uncertainty. Utility model disclosure requirements were not thought sufficient to provide a reasonably reliable guide to what methods the model would cover.

This sounds rather like a policy judgment thinly cloaked in analytic terms, and may reflect a latent sense of discomfort about the outer reaches of utility model protection.

71. See Utility Model Act § 12a (1993):

The extent of protection of the utility model shall be determined by the content of the claims. However, the description and the drawings shall be consulted for interpretation of the claims.

BEIER, *supra* note 63, at I/B/206.

72. Although it seems indisputable that the spatial form requirement is the central conceptual feature of a classical utility model regime, commentators discussing the fate of the spatial form requirement around the time of the 1990 amendments focused on the erosion of the requirement and the complex case law that it had generated. See *supra* note 63. By 1990, the requirement was being viewed as a means to ensure that the subject matter of utility models would be limited to technically simple inventions, for which assessments of protectability and scope of protection could, in theory, be easily carried out. See Krasser, *supra* note 17, at 954 (reporting this new justification). This justification could readily be attacked on a variety of grounds. *Id.* at 954-55 (observing that inventions having spatial form are not necessarily technically simple, and that the difficulty of assessing protectability and scope of protection would seem to have more to do with other factors, such as whether there are many similar inventions and whether the claims are drafted clearly, than with spatial form). These arguments, in addition to the complexity (and consequent cost) of applying the spatial form case law, made the demise of the spatial form requirement seem more a matter of inevitability than a significant conceptual reorientation.

patent protection.<sup>73</sup> Indeed, while Germany has retained the label “utility model,” it is, in view of the conceptual basis of the current system, a misnomer, and this unfortunate choice of terminology has persisted in current European proposals. The *Gebrauchsmuster* system is now a full-fledged second tier patent regime. Thus, to the extent that current second tier proponents look to the history of German utility model protection to justify harmonization, they must restrict themselves to the very recent history of the amended German system.

#### b. The Australian Experiment with “Petty Patents”

Current Australian patent law provides for a grant of second tier patent protection known as “petty patent” protection.<sup>74</sup> Petty patent protection first appeared in Australian patent law by way of the Patents Amendment Act of 1979,<sup>75</sup> and it provides a very short-term protection<sup>76</sup> period without substantive pre-grant examination.<sup>77</sup> The rationales for the creation of the Australian petty patent system generally echo the arguments made in Great Britain in the early nineteenth century to justify the creation of the Utility Designs system: to provide a form of intellectual property protection that could be obtained more quickly and more cheaply than regular patent protection.<sup>78</sup> To these general rationales was added the important, more specific observation that regular patent protection might prove to be of limited value

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73. Professor Reichman views this trend as a general phenomenon. See, e.g., J.H. Reichman, *Charting the Collapse of the Patent-Copyright Dichotomy: Premises for a Restructured International Intellectual Property System*, 13 CARDOZO ARTS & ENT. L.J. 475, 500 n.109 (1995) (“Over time, utility model laws tend to degenerate into longer and stronger petty patent regimes that provide patent-like protection of small inventions generally, for a relatively short period of time. In this form, they become less strictly tied to three-dimensional, functional shapes of tools and everyday implements.”).

74. The provisions pertaining to the petty patent are interspersed with provisions on regular patent protection in the Patents Act, 1990. For the full text of the Patents Act, 1990, see 1990 Aust. Act 83 (updated as of June 30, 1995). Currently, Australia is considering proposals to transform the petty patent system into an “innovation patent” system. See *infra* notes 109–122 and accompanying text.

75. See, e.g., SAM RICKETSON, *INTELLECTUAL PROPERTY: CASES, MATERIALS AND COMMENTARY* 796 (1994). For a brief note on the legislative origins of the Australian petty patent provisions, see JAMES LAHORE ET AL., *INTELLECTUAL PROPERTY IN AUSTRALIA* § 1.1.008–.009, at 515–16 (1990) (noting that the legislation originated from committee proposals that were prepared in response to a 1970 Attorney-General’s request to analyze the feasibility of introducing utility model protection in Australia).

76. Petty patents are granted for an initial term of one year from the date of filing. Patents Act, 1990, § 68(a). However, an owner who complies with specified formal requirements can extend the protection for a time period ending six years from the date of filing. Patents Act, 1990, § 68(b).

77. The relevant provisions confer discretion on the Commissioner as to whether to engage in substantive pre-grant examination. Patents Act, 1990, § 50(1). However, it appears that in the ordinary course, the Commissioner has issued petty patents without substantive examination. For a description of the examination procedure, see LAHORE, *supra* note 75, § 1.2012, at 550–51.

78. *Id.*



commercially for classes of goods having relatively short commercial lifetimes (e.g., products whose commercial lifetimes ended before a regular patent application was even granted).<sup>79</sup>

The principal innovation in the Australian approach to second tier patent protection lay in the scope of eligible subject matter. There was no effort to limit petty patent protection to external product configurations along the lines of the classical utility model regime. Instead, anticipating modern proposals, the Australian provisions drew no distinction between regular patents and petty patents concerning the scope of eligible subject matter.<sup>80</sup>

The creation of the Australian petty patent system is an important milestone in the trend away from the classical utility model regime and towards second tier patent regimes. Unfortunately, certain peculiarities of the petty patent system prevent it from serving as a particularly attractive historical antecedent against which to test the claims of current proponents of second tier protection. Most notably, the Australians apply the same standards for obviousness/inventive step to both regular patents and utility patents.<sup>81</sup> This curiosity, as much as any other feature of the petty patent system, probably accounts for its under-utilization.<sup>82</sup> It also places the Australian petty patent system on a different conceptual footing than current proposals.

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79. *Id.*, quoting speech of Honourable Ian McPhee, Minister of Productivity, Commonwealth Parliamentary Debates, vol. H of R 113, at 183, 21 February 1979 (petty patent provisions were directed towards products that "individually have a short commercially exploitable life, such as household or office accessories, gadgets, small appliances and so on . . . [and] which now go largely unexploited or unprotected or both due to deficiencies in existing patent protection.").

80. See Australian Patents Act, 1990, § 18; Richards, *supra* note 6, at 47-14. On the other hand, the petty patent provisions do provide that a petty patent can only include a single claim. Patents Act 1990, § 40(2)(c). Commentators have suggested that this limitation (as opposed to any limitation on the scope of eligible subject matter) "was intended to limit the field of protection . . .". LAHORE, *supra* note 75, at § 1.1.009, p. 515.

81. Australian Patents Act, 1990, § 7(2). For an example of a decision applying regular patent standards for inventive step to a petty patent, see *Elconnex Pty., Ltd. v. Gerard Industries Pty., Ltd.*, (1992) 25 I.P.R. 173 (Full Fed. Ct.) (concluding that the claimed subject matter would have been obvious).

Some important qualifications should be noted. First, the prior art base for regular patents is much more inclusive than that for petty patents. Australian Patents Act, 1990, Schedule 1 (defining "prior art base" to include only publicly accessible information that is available locally, but extending the definition for standard patents to include publicly accessible information even if not available locally); Richards, *supra* note 6, at 47-14. Second, pre-grant substantive examination for petty patent applications is discretionary. See *supra* note 6.

82. Popularity here is measured by the number of applications filed. Recent figures indicate that the number is extremely small: only 400 applications for petty patents were filed in 1994. See Introduction of the Innovation Patent: Government Response to the Recommendations of the Advisory Council on Industrial Property (ACIP) Report "Review of the Petty Patent System" (visited Apr. 24, 1998) <<http://www.ipaustralia.gov.au/news/gresp.htm>>.

### C. Current Initiatives to Expand Second Tier Patent Regimes

Currently, initiatives to expand second tier patent regimes have surfaced in both Europe and Australia. Both proposals feature bold promises for second tier patent protection and deserve close and careful scrutiny. Additionally, a variety of other proposals for second tier patent regimes, or close variations on those regimes, can be found in the scholarly literature, particularly the literature on the "direct" protection of innovation. These proposals are briefly surveyed in this section.

#### 1. Europe: Harmonized "Utility Model" Protection

The current European effort to legislate harmonized second tier patent protection is of relatively recent vintage, as European intellectual property legislation goes,<sup>83</sup> although at least one call for harmonization appears earlier in the scholarly literature.<sup>84</sup> Following the presentation of proposals by the Max Planck Institute<sup>85</sup> and other organizations,<sup>86</sup> the European Commission released a consultative document (Green Paper) in July, 1995, stressing the economic need for the expansion and harmonization of second tier patent regimes across Europe.<sup>87</sup>

83. See COM(95)370, *supra* note 20, at 3 (tracing the origins of the current European effort to a 1994 FICPI petition to the European parliament and subsequent written questions from the parliament to the Commission requesting that the Commission prepare proposals) (citing *Action Européenne pour l'Education, l'Invention et l'Innovation*, petition to the European Parliament, No. 1012/93; International Federation of Industrial Property Attorneys (FICPI), Resolution No. 6, September 1994; and Written Questions Nos. 1552/94 and 2536/94, Hearing on the Petition to the European Parliament, No. 1012/93).

84. A leading early proponent of utility model harmonization was Professor Beier. See Friedrich-Karl Beier, *The Future of Intellectual Property in Europe*, 22 INT'L REV. INDUS. PROP. & COPYRIGHT L. 157, 166 (1991) (concluding that "[t]he introduction of national protection for utility models to complement European patent protection . . . thus seems to me, at least for the moment, to be the most appropriate solution . . .").

85. *Proposal of the Max Planck Institute for a European Utility Model*, 25 INT'L REV. INDUS. PROP. & COPYRIGHT L. 700 (1994), reviewed by Michael Kern, *Towards a European Utility Model*, 25 INT'L REV. INDUS. PROP. & COPYRIGHT L. 627 (1994) (commenting on the Max Planck proposal).

86. The Association Internationale pour la Protection de la Propriété Industrielle (AIPPI) debated, but never adopted, proposals for harmonization from the mid-1980s through the mid-1990s. See Krasser, *supra* note 17, at 958-59.

Great Britain's Chartered Institute of Patents Agents [hereinafter CIPA] crafted proposals, although primarily in response to the threat that second tier protection might be imposed on the United Kingdom by the European Commission. See MARGARET LEWELYN, INTELLECTUAL PROPERTY INSTITUTE, UTILITY MODELS/SECOND TIER PROTECTION: A REPORT ON THE PROPOSALS OF THE EUROPEAN COMMISSION 62-63 (1996) (expressing doubt that the CIPA proposals were inspired by any independent enthusiasm in the United Kingdom for second tier protection); Lees, *Design Problems*, *supra* note 54, at 226-28 (summarizing CIPA proposals).

87. The Green Paper's authors averred that "[a]s the single market is consolidated we can expect an increase in demand for utility models and especially in cross-border applications." COM(95)370, *supra* note 20, at ii. To support the argument that empirical evidence counseled for harmonized utility model protection, the Green Paper relied heavily upon surveys conducted by the Ifo Institute (*Ifo-Institut für Wirtschaftsforschung*) to substantiate the proposition that the divergence in utility model regimes was sufficient to hinder economic progress. See *id.* at 4, nn.16-17.

European nations currently fall into one of four categories concerning second tier patent regimes. Some countries, including Germany, have moved away from classical utility model regimes by dropping the spatial form requirement and feature a "soft" obviousness standard.<sup>88</sup> A second group of countries likewise refrains from the spatial form requirement, but, unlike the first group, uses a full obviousness/inventive step criterion. These regimes thus differ from regular patent protection primarily in that they have a shorter term.<sup>89</sup> A third group has retained the classical utility model regime, using both a spatial form requirement and a soft obviousness standard.<sup>90</sup> Finally, in some jurisdictions, most notably the United Kingdom, second tier patent protection does not exist at all.

The Commission apparently perceived that consultation following the Green Paper revealed "a real economic interest" in expanded second tier protection.<sup>91</sup> The European Community Council reportedly took up the proposal for examination in February, 1998,<sup>92</sup> and a directive could be adopted as early as 1999.<sup>93</sup>

Harmonized utility model protection, as embodied in the White Paper, blends elements of the reformed *Gebrauchsmuster* system with selected innovations from the European Patent Convention<sup>94</sup> and the Community Patent Convention.<sup>95</sup> In its broadest outlines, the White

The surveys have been sharply criticized in the scholarly literature. See, e.g., LLEWELYN, *supra* note 86, at 13-18.

88. See *supra* Part I.B.1.a for a discussion of current German law.

89. See also Suthersanen, *supra* note 10, at 45-46 (identifying the French *certificat d'utilite*, the Dutch *zestjarig octrooi*, and the Belgian *brevet de courte duree* as representative of this "patent prototype" for utility model systems in Europe).

90. Examples include the Greek utility model certificate, the Portuguese *modelo de utilidade*, the Italian *brevetto per modelli di utilita*, and the Spanish *modelo de utilidad*. See COM(95)370, *supra* note 20, at 7-8. Spanish law contains a representative spatial form requirement. In Spanish law, the *modelo de utilidad* is defined as "an invention which consists of a form, structure or constitution which results in a practical and appreciable advantage for its use or manufacture and in particular utensils, instruments, tools, apparatus, devices or parts thereof." Suthersanen, *supra* note 10, at 46.

91. See Patrick Ravillard, *The Proposal for an EU Directive on Utility Models*, in Proceedings of the Sixth Annual Conference on International Intellectual Property Law & Policy, Program VB Part 1, pp. 5-6 (1998) (referring to the results of consultation with interested circles).

92. See *id.* at 9.

93. See *id.* at 10.

94. Convention on the Grant of European Patents, Oct. 5, 1973, 1065 U.N.T.S. 199 [hereinafter EPC], reprinted in GERALD PATERSON, *THE EUROPEAN PATENT SYSTEM* APP. I (1992).

95. Agreement Relating to Community Patents, Luxembourg, Dec. 15, 1989, Doc. 89/695/EEC; PATERSON, *supra* note 94, at App. 19 (providing full text of the Community Patent Convention [hereinafter CPC]). For scholarly commentary on the CPC, see, e.g., John R. Thomas, *Litigation Beyond the Technological Frontier: Comparative Approaches to Multinational Patent Enforcement*, 27 LAW & POL'Y INT'L BUS. 277, 298-99 (1996) (providing background on the CPC); AMIRAM BENYAMINI, *PATENT INFRINGEMENT IN THE EUROPEAN COMMUNITY* 5-19 (Max Planck Inst. for Foreign and Int'l Patent, Copyright & Competition Law ed., 1993) (providing a more extensive discussion of the background and issues surrounding creation of the CPC); STEPHEN P. LADAS, *1 PATENTS, TRADEMARKS, AND RELATED RIGHTS: NAT'L & INT'L PROTECTION* 684-701 (1975) (same).

Paper proposal features provisions that typically characterize full-fledged second tier patent proposals: a short term (six years plus a pair of two-year renewals),<sup>96</sup> a limitation on the number of claims,<sup>97</sup> and a lack of any pre-grant substantive examination.<sup>98</sup> Moreover, like the reformed *Gebrauchsmuster* system, the White Paper dispenses with the spatial form requirement.<sup>99</sup> The White Paper strikes out in new direc-

96. COM(97)691, *supra* note 20, at Art. 19; *see also id.* at Part Five (explaining Article 19). The proposed term tracks the prevailing German standard. *See* BEIER, ET AL., *supra* note 63, at I/B/209–210 (Sec. 23) (specifying that under current German law, the initial term of a utility model is three years beginning on the day after the application is filed, extendable for three years, and subsequently for two further terms of two years each). The term is generally consistent with terms presently available under national laws in Europe. *See* Richards, *supra* note 6, at 47–13, Table I (listing available terms). The White Paper term is, however, longer than the six-year term allowed under Japanese utility model law. *See* Monya, *supra* note 50, at 253 (citing Utility Model Law § 15 (1994)).

It is not, however, clear that the term proposed in the White Paper has any particularly sound economic basis. The Economic and Social Committee recently observed that the “proposed duration of the protection appears excessive given the data the Commission provides on the life-cycle of inventions . . .” July 1998 Opinion, *supra* note 20, at C235/29, Point 4.11 (commenting on Article 19). The Committee proposed the option of increasing the renewal fees starting after the six-year period. *See id.* at 4.11.1.

97. The limitation, however, is qualitative: the number of claims “shall be limited to that which is strictly necessary having regard to the nature of the invention.” COM(97)691, *supra* note 20, at Art. 13(2); *see also* explanatory text for Art. 13(2), *id.* at Pt. 5.

This seemingly innocuous proposal may well give rise to costly ancillary litigation. The White Paper leaves unclear whether Member States can implement the vague Article 13 standard by limiting applicants to a specific number of claims, or whether Member States are obliged to adopt the Article 13 standard word for word and tolerate the possibility that there will be extensive third party opposition activity based upon an “excessive claiming” argument. July 1998 Opinion, *supra* note 20, at C235/29, Point 4.8 (noting additionally that the White Paper does not provide for applicants to restrict voluntarily the number of claims).

98. COM(97)691, *supra* note 20, at Art. 15 (providing that pre-grant examination will be limited to questions of compliance with formalities such as the submission of the required components of the application and will not include questions of compliance with novelty, inventive step, and industrial application requirements). Article 15 appears to leave a gap regarding compliance with the limitations on eligible subject matter. It does not address whether the relevant granting agency is to examine close questions on eligible subject matter or defer those to litigation in the interest of rapid issuance.

The Green Paper was slightly more forthcoming, seeming to contemplate at least a rudimentary examination for compliance with subject matter eligibility provisions:

In the scheme outlined here there would be no examination for novelty and inventive step.

But a check should at least be made to ensure that the formal conditions for protectability are satisfied. This would also eliminate inventions which are excluded from protectability by the wording of the law.

COM(95)370, *supra* note 20, at 70. According to the Green Paper, current utility model systems in Europe (except for Belgium) all feature this level of limited pre-grant examination. *Id.* at 70, n.141; *id.* at 59 (observing that all of the utility model systems recently introduced in Europe, specifically in Ireland, Denmark, Greece, Austria, and the Netherlands, dispensed with pre-grant substantive examination). Post-1994 Japanese law employs the same approach. *See* Jun Nakajima, *Revisions to the Japanese Utility Model Law*, PATENT WORLD 16, 17–18 (May 1994) (explaining that the elimination of substantive pre-grant examination means that examination for compliance with the subject matter provisions, unity of invention requirements, and, at least minimally, disclosure/description requirements is still carried out).

99. COM(97)691, *supra* note 20, at Art. 3(1) (providing that utility models will be granted for “inventions”); *id.* at Arts. 3(2), 4 (including no language limiting the term “inventions” by any spatial form requirement). In this regard, current proposals follow the lead of the Green

tions, however, in its treatment of the scope of eligible subject matter and the standard for inventiveness.<sup>100</sup>

In Articles 3 and 4, the White Paper borrows heavily from the European Patent Convention's approach to eligible subject matter,<sup>101</sup> but also engrafts some new and important limitations. Article 4(b) expressly excludes inventions "relating to biological material,"<sup>102</sup> while Article 4(d) excludes inventions "involving computer programs,"<sup>103</sup>

Paper. COM(95)370, *supra* note 20, at 62-4 (arguing that the spatial form requirement is anachronistic); *id.* at 55 (concluding that due to the absence of other types of effective intellectual property protection for functional aspects of articles, the concept of "invention" implying protection irrespective of spatial form should be used for any Community-level utility model). *See also id.* at 56 ("The concept of invention is the only way of doing justice to this functional character.").

By way of justification, the White Paper merely advances the bald conclusion that "[t]he requirement that an invention must be embodied in three dimensional form . . . has not been included as it does not correspond to present needs." COM(97)691, *supra* note 20, at Pt. 4, Subpart A. Though the White Paper gives this issue little play, the fact is that many European jurisdictions still retain some form of the spatial form requirement, although it is not clear whether the requirement would be vigorously enforced or whether it has been eroded in the manner that arguably occurred in Germany and Japan. *See supra* note 20; *see also* Suthersanen, *supra* note 10, at 46 (listing European countries where utility model laws still include the spatial form requirement). Accordingly, on this basis alone, harmonization will cause a major change in several jurisdictions, converting their utility model laws into true second tier patent regimes.

By contrast, despite making major changes to other aspects of its utility model regime in 1994, Japan retained its spatial form requirement. *See* Nakajima, *supra* note 98, at 17. Article 1 of the Japanese Utility Model Law provides that the law is designed for "promoting the protection and utilisation of devices relating to the shape or construction of articles or a combination of articles . . ." *Id.* Accordingly, chemical structures and process inventions continue to fall outside the protection of the utility model regime by failing to meet the spatial form requirement. *See id.*

100. AIPPI identified these issues early on as the main obstacles to harmonization. *See, e.g.,* Krasser, *supra* note 20, at 960. *See also* Suthersanen, *supra* note 10, at 45 (identifying subject matter eligibility, especially regarding the spatial form requirement, and patentability as the key areas of disparity in European standards).

101. Specifically, Article 3 closely tracks the language of Articles 52(1) and (2) of EPC, which, among other things, exclude "discoveries" and mental steps from the definition of "invention." COM(97)691, *supra* note 20, at Art. 3. *See also* PATERSON, *supra* note 94, at 523. The utility model proposal omits EPC Article 52(2)'s exclusion of computer programs, and instead deals with computer programs in a separate exclusion. *See infra* note 103 and accompanying text.

EPC Article 52(4) excludes certain surgical methods from protection because they do not meet the industrial application requirement. *See* PATERSON, *supra* note 94, at 523 (text of EPC Article 52). The utility model proposal includes similar language in Article 7(2), which deals with the industrial application requirement. *See* COM(97)691, *supra* note 20, at Art. 7(2).

Finally, Article 4(a) of the utility model proposal includes a public policy limitation on eligible subject matter that is nearly identical to the language of EPC Article 53(a). PATERSON, *supra* note 94, at 523-24 (text of EPC Article 53); COM(97)691, *supra* note 20, at Art. 4(a).

102. COM(97)691, *supra* note 20, at Art. 4(b). *See infra* note 212 and accompanying text for commentary on this exclusion.

103. COM(97)691, *supra* note 20, at Art. 4(d). The language used is unfortunate; nearly any new electronic device probably "involves" a computer program. The exclusion seems a far cry from merely excluding computer programs "as such," the effect of EPC Articles 52(2)(c) and 52(3). PATERSON, *supra* note 94, at 523. Interestingly, the EC's Economic and Social Committee has recently opined that the Article 4(d) exclusion is "too broad" and should instead "be limited to computer programs as such" in line with current European patent practice. July 1998 Opinion, O.J. C 235, *supra* note 20, at point 4.2.

both potentially wide-ranging exclusions.<sup>104</sup> Article 4(c) takes an intermediate approach to the protectability of process inventions: chemical and pharmaceutical processes would be excluded,<sup>105</sup> implying that other types of processes would constitute eligible subject matter.<sup>106</sup>

Regarding the standard for inventiveness, the White Paper proposes a two-track inventive step standard under which the claimed subject matter survives scrutiny if it exhibits either

- (a) particular effectiveness in terms of, for example, ease of application or use; or
- (b) a practical or industrial advantage.<sup>107</sup>

This provision seems destined to cause more litigation than any other aspect of harmonized utility model protection.<sup>108</sup>

## 2. Australia: The Innovation Patent System

Australian efforts to transform the existing petty patent system into an "innovation" patent system provide another example of the renewed drive to expand second tier patent protection.<sup>109</sup> The proposed Australian system also deserves close attention because of its theoretical implications.<sup>110</sup>

In February 1997, the Australian Minister for Science and Technology announced the creation of an "Innovation Patent System," a second-tier patent system aimed at "encouraging individuals and small to medium-sized businesses to realise their good ideas."<sup>111</sup> The system

104. See *infra* Part II.A.3 for an analysis of the proposed limitations on subject matter eligibility.

105. COM(97)691, *supra* note 20, at Art. 4(c). Utility model proponents, by contrast, had advocated that protection be extended to processes of all varieties. See Beier, *supra* note 84, at 166 (arguing for the elimination of the proscription against utility model protection for processes "[t]his final relic of the last century" so that the utility model regime can "offer the European inventor a comprehensive alternative to patent protection").

106. Commentary in the White Paper confirms this implication. See COM(97)691, *supra* note 20, at Part Four, Subpart A (explaining that the elimination of the spatial form requirement "makes it possible to bring processes within the scope of the proposal"). By contrast, second tier regimes in Germany, Italy, and Spain all exclude processes from eligibility. See Kern, *supra* note 85, at 632. The same is true of Japan where the spatial form requirement remains. See Nakajima, *supra* note 98, at 17 (explaining that due to the spatial form requirement "utility model applications directed towards methods and processes or invisible articles (e.g., crystal structure of metals, chemical structures) cannot be registered").

107. COM(97)691, *supra* note 20, Art. 6.

108. I supply some reasons for this prediction *infra* Part III.B.

109. The proposed Australian Innovation Patent system is not entirely without precedent. Current Malaysian law on "utility innovations" appears to take an approach quite similar to the proposed Australian system. See Suthersanen, *supra* note 10, at 49 (describing Malaysian law).

110. I discuss theoretical implications in greater depth *infra* Part III.

111. <<http://www.dist.gov.au/media/archive/feb97/41-97.html>> (visited Apr. 27, 1998).

resulted from a review of Australia's existing petty patent system by an Advisory Council on Industrial Property (ACIP).<sup>112</sup>

The innovation patent would, in some respects, constitute a more vigorous form of petty patent: it would run for an eight-year term,<sup>113</sup> issue without any substantive examination,<sup>114</sup> and be allowed to contain up to five claims without restriction on type.<sup>115</sup> While the legal scope of eligible subject matter will remain the same as for petty patents,<sup>116</sup> the government intends to undertake a renewed effort to promote the innovation patent as a vehicle for protecting all varieties of technologies.<sup>117</sup> Indeed, the use of the new, politically attractive label "innovation patent" also reflects this ambition.<sup>118</sup>

The provision that perhaps most clearly differentiates the new Innovation Patent System from the existing petty patent system is the inventiveness provision.<sup>119</sup> While the prior art base would be expanded to be the same as for regular patents,<sup>120</sup> the standard for inventiveness

112. *Id.* The government's proposal is named "Government Response to the Recommendations of the Advisory Council on Industrial Property (ACIP) Report 'Review of the Petty Patent System'". For the full text of the response, see <<http://www.ipaustralia.gov.au/news/gresp.htm>> (visited Apr. 24, 1998) [hereinafter "Government Response"].

113. Government Response, *supra* note 112, at Recommendation 4 (calling for a term of eight years from the application date, but with a renewal fee due at the third anniversary of filing, consistent with existing law for regular Australian patents). Accordingly, the innovation patent offers a longer term than the existing petty patent regime. *See supra* note 76 (citing term provisions which govern the current petty patent system).

114. Government Response, *supra* note 112, at Recommendation 7. The Recommendation provides that a "formal examination" will be undertaken for all innovation patent applications, and that substantive examination will occur only upon request by either the applicant or a third party. ACIP recommended that either the applicant or a third party could request substantive examination any time within three years after filing, including examination prior to grant. The government accepted the three year deadline for requests, but concluded that no substantive examination would be available prior to grant, to avoid any delays. *Id.* at Comment to Recommendation 7.

115. *Id.* at Recommendation 5 (explaining that there are no restrictions on whether the claims are in independent or dependent form). The existing petty patent system permits no more than three dependent claims. *Id.* at Comment to Recommendation 5.

116. The scope of eligible subject matter for innovation patents will be coextensive with the scope of eligible subject matter for regular patents. *See id.* at Recommendation 9.

117. The government's report comments that although the government expects that innovation patent applications will mostly relate to "simple tools, utensils, machinery or equipment," the government does not propose to limit the scope of eligible subject matter because "limiting the type or extent of technology coverage might preclude the innovation patent system from covering new and emerging technologies." *Id.* at Comment to Recommendation 9.

118. *See id.* at Comment to Recommendation 1 (explaining that the government sought to avoid the inherent negative connotations associated with the term "petty" patent). The report also explains that using the term "utility model" for the new system was considered confusing "as this term generally refers to mechanical and electrical inventions and excludes process and chemical/biochemical inventions." *Id.*

119. *See* Crinson, *supra* note 19, at 40-41 (suggesting that the main impetus for the proposed Innovation Patent System derives from a desire to soften the inventiveness standard).

120. Government Response, *supra* note 112 at Comment to Recommendation 6 (elaborating that the prior art base for innovation patents would, accordingly, include publications published anywhere in the world). This differs quite dramatically from the existing petty patent system, founded on archaic notions of the unavailability of foreign publications, under which only locally

would be more favorable to applicants. In particular, the system would rely upon a "modified form of the expanded novelty test,"<sup>121</sup> under which protection would be withheld if the claimed invention varies from previously publicly available articles, products or processes "only in ways which make no substantial contribution to the effect of the product or working of the article or process."<sup>122</sup>

### 3. Scholarly Proposals

Scholars have periodically taken up the task of fashioning appropriate regimes for protecting subpatentable innovation<sup>123</sup> through what may loosely be called "second tier" patent regimes. The proposals range from radical suggestions to achieve "direct" protection of innovation, to more traditional formulations.

Some scholars have advocated the "direct" protection of innovation, usually as a supplement to the regular patent system.<sup>124</sup> One proposal would create an "innovation patent,"<sup>125</sup> guided by the principle that patent-like protection should be tied more closely to tangible manifestations of innovative activity.<sup>126</sup> As one proponent puts it, "[p]rotection would be granted only to the combination of a tangible object and the initial act of actually commercialising it."<sup>127</sup>

The concern for actual commercialization (actually achieving the "innovation object") dominates the substantive standards that characterize direct protection schemes. For example, the novelty standard

published information can qualify as prior art. *See id.* Prior use evidence would continue to be limited to prior uses occurring in Australia. *See id.*

121. *Id.* at Comment to Recommendation 2. The expanded novelty test reportedly derives from *Griffin v. Isaacs*, 12 A.L.J. 169 (1938). For a contemporary discussion of the substantial novelty approach in *Griffin v. Isaacs* and the general difficulty of maintaining sharp distinctions between novelty and nonobviousness as exemplified by evolving Australian regular patent jurisprudence, *see, e.g.*, *R. D. Werner & Co., Inc. v. Bailey Aluminum Prods. Pty. Ltd.*, 85 A.L.R. 679 (Fed. Ct. 1989).

122. Government Response, *supra* note 112, at Recommendation 2.

123. The issue of innovation protection sometimes manifests itself in unexpected ways. *See, e.g.*, Rebecca S. Eisenberg, *Public Research and Private Development: Patents and Technology Transfer in Government-Sponsored Research*, 85 VA. L. REV. 1663, 1669-70 (1996) (suggesting that further study of the role that patents play in inventions developed with the support of public funding might be of broader theoretical interest if it reveals that patents stimulate downstream innovation rather than simply providing incentives for the initial creation of inventions).

124. The arguments are pursued most completely in WILLIAM KINGSTON, *DIRECT PROTECTION OF INNOVATION* (1987) (see especially the "Thesis Chapters," at 35-86).

125. The proposal originated in Hermann Kronz, *Patent Protection for Innovations: A Model—Part I*, 7 EUR. INTEL. PROP. REV. 178, 182 (1983). The label should not be confused with the "innovation patent" of recent Australian proposals.

126. *See id.* at 181 (proposing that "innovation," for purposes of an innovation patent scheme, be defined as "the factual combination of the applicable embodiment of the innovation object and the first act of commercial use").

127. William Kingston, *Innovation Patents and Warrants*, in *PATENTS IN PERSPECTIVE* 68, 70 (Jeremy Phillips, ed., 1985) ("Anything new can be protected by an innovation patent, *in the form in which it actually enters into commercial activity.*").



would be narrowed dramatically; only a prior public *use* could anticipate.<sup>128</sup> Additionally, the disclosure would not be considered adequate until it described a fully achieved innovation object.<sup>129</sup> Finally, in keeping with the goal of protecting incremental innovation, the proposed innovation patent scheme would discard the inventive step/obviousness criterion entirely,<sup>130</sup> thus going further than mainstream second tier patent proposals.

Another proposed form of "direct" protection of innovation, the "innovation warrant," is similar to the innovation patent, but less obsessed with the actual existence of a commercial embodiment of the invention. The innovation warrant is intended to protect investments in innovative activity.<sup>131</sup> That is, while the innovation patent offers protection for anything new in the form in which it is actually commercialized, the innovation warrant supposedly would protect anything new "as long as it can be the subject of investment."<sup>132</sup>

Perhaps the most extraordinary features of the proposed direct protection schemes concern the term of protection, the enforcement of rights, and the opportunities for third party challenges. Both the innovation patent and the innovation warrant would be granted for variable terms of protection.<sup>133</sup> The proposals contemplate a complicated arrangement under which the term would be calculated as an inverse

128. The same considerations lead proponents to demand that the proposed novelty standard would rest on local novelty: "Known prior use must necessarily relate to domestic use because the public interest in innovation in the respective geographical area is not served by prior use effected in the area outside. Innovation protection is not concerned with the dissemination of technology by words (information) but by action (innovation acts)." Kronz, *supra* note 125, at 181.

129. See Kingston, *Innovation Patents and Warrants*, *supra* note 127, at 71-72. Kingston seems to assume that by requiring an applicant to file "any appropriate piece of information, which would then be progressively augmented by other items throughout the development stage," the quality of the disclosure would far exceed that of regular patents. See *id.* at 72 (claiming that "there would be no escape from disclosing 'know-how,' the absence of which from traditional patent specifications is notorious"). Yet the apparent standard for adequacy of disclosure would be no different from the enablement standard for regular patents. See *id.* at 71-72 (the disclosure would have to be "so complete as really to permit the innovation to be copied as soon as its protection has expired"). This, coupled with the administratively complex notion of a successively growing disclosure, raises considerable doubt as to whether the disclosures of innovation patents would outdo their predecessors in the regular patent system.

130. See Kingston, *Innovation Patents and Warrants*, *supra* note 127, at 70; Kronz, *supra* note 125, at 182.

131. See Kingston, *Innovation Patents and Warrants*, *supra* note 127, at 73. Kingston points out that while such a scheme seems radical in many ways, the general principle already has been incorporated into at least one existing intellectual property regime, the European initiative for protecting the contents of databases. See William Kingston, *Patent Protection for Modern Technologies*, 1997 INTELL. PROP. Q. 350, 366, n.31 (citing the EC Directive on Databases, 1996 O.J. (L. 77)).

132. *Id.*

133. One scholar has similarly suggested that second tier protection is, in fact, a crude way to approximate the ideal of customizing the term based upon the degree of inventiveness, by giving incremental advances a shorter term and patentable inventions a relatively longer term. See Crinson, *supra* note 19, at 45.

measure of the applicant's "innovative capacity" (for the innovation patent)<sup>134</sup> or as a measure of the risk undertaken by applicant (for the innovation warrant).<sup>135</sup> As to enforcement, the innovation warrant proposal goes so far as to advocate state enforcement of rights through a specialized arbitration proceeding.<sup>136</sup> Finally, as to third party challenges, the proposals would diverge radically from long experience with regular patent systems. In essence, the proposals would turn conventional wisdom on its head by allowing an opportunity for third-party oppositions prior to grant,<sup>137</sup> and by providing that granted innovation patents or warrants would immediately become incontestable.<sup>138</sup>

Other proposals would stop considerably short of a novelty-only protection scheme coupled with an incontestable grant. John Richards, for example, has suggested the possibility of establishing a novelty-only scheme, but limited by a requirement that the owner grant compulsory licenses after the expiration of a specified period.<sup>139</sup> Richards has alternatively proposed relying upon copyright models, creating liability only for "direct copying."<sup>140</sup>

Other proposals are more focused on stimulating technological development under specialized circumstances. For example, Professor Reichman has identified other varieties of second tier regimes that

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134. Kingston, *Innovation Patents and Warrants*, *supra* note 127, at 71.

135. *See id.* at 74-76 (describing how risk would be calculated). The system would use "categories" of risk, which would supposedly limit administrative discretion, although this seems a highly dubious proposition given the sheer complexity of the calculation and the concomitant multiple opportunities for variations in judgment. *Id.* at 69. *See also* Louis Kaplow, *The Patent-Antitrust Intersection: A Reappraisal*, 97 HARV. L. REV. 1813, 1825, n.29 (1984) (describing an economic calculus of optimal patent life including considerations of risk).

More radical yet are suggestions that the term could be used as a public policy instrument, lengthened for areas of state interest (e.g., sectors in which unemployment is high) and presumably shortened for others. *See id.* at 76. Quite apart from the array of legal and policy objections that might be raised in connection with such a proposal, a mere glance at the existing U.S. provisions concerning term extension for pharmaceuticals should suffice to demonstrate that the administrative costs alone of such a scheme could be staggering. *See* 35 U.S.C. § 156 (1998). *But see* Kingston, *Innovation Patents and Warrants*, *supra* note 127, at 76 (claiming that such a system would be "costless to administer").

136. *See* Kingston, *Innovation Patents and Warrants*, *supra* note 127, at 74.

137. Pre-grant oppositions were known in a variety of patent systems but have generally proven unwieldy for all involved, especially applicants, and have largely been abandoned. *See, e.g.,* Janis, *supra* note 60, at 28-33 (discussing the use of pre-grant oppositions in various European national patent systems and objections to adopting pre-grant opposition procedures in the United States).

138. *See* Kingston, *Innovation Patents and Warrants*, *supra* note 127, at 74. The proposal does provide, at least, that grants could be challenged for procurement by fraud, notwithstanding incontestability.

139. The specified period could encompass a predetermined time period, designed to represent an appropriate "head start" time. Richards, *supra* note 6, at 47-11 to 47-12. Alternatively, the specified period could be tied to a specified level of sales of the protected device. *See id.*

140. *Id.* Richards questions whether a registration system would be needed if this were the standard.

have, at one time or another, been recommended as of interest for developing nations, including "patents of importation" and "industrial development patents."<sup>141</sup> While patents are customarily granted to the first inventor, or the first inventor to file a patent application, patents of "introduction" or "importation" are granted to the first actor to introduce technology into a country.<sup>142</sup> The opportunity to secure such protection might typically arise where a technology has been patented in a foreign country, but is neither patented nor being exploited in the country in question.<sup>143</sup> Conceptually, this mechanism differs quite substantially from standard second tier patent regimes in that the patentee of a patent of importation need not even be (and usually is not) the true inventor of the patented technology. The TRIPS Agreement, through its limitations on a country's authority to impose compulsory licenses,<sup>144</sup> restricts a country's ability to grant patents of importation, but does not eliminate it entirely.<sup>145</sup> Industrial development patents are quite similar.<sup>146</sup>

Yet other proposals would direct efforts at achieving technological progress in specific technological sectors. One author, for example, has proposed that Congress introduce an "environmental patent" that would eliminate the obviousness requirement for product and process inventions relating to environmental technologies, but would provide only a ten-year term of protection.<sup>147</sup> The environmental patent would be similar in its broad outlines to proposed second tier regimes, except that all process inventions would constitute eligible subject matter,

141. Reichman, *TRIPS Component*, *supra* note 9, at 251–54.

142. *Id.* at 251, n.316 (collecting sources of scholarship on patents of importation).

143. *Id.* at 251.

144. A "working requirement" is a provision that provides for the loss of patent protection, or the possibility that patent protection will be subject to compulsory licenses, where the patented technology is not exploited ("worked") within the subject country.

145. As a result of the TRIPS provisions

[A] threat by government authorities to issue patents of introduction in the absence of local working would no longer dissuade foreign patentees who had properly filed and obtained domestic utility patents from supplying the market by imports alone, although such patentees would remain subject to compulsory licenses if they charged excessive prices for their imports.

*Id.* at 252.

146. As Professor Reichman describes them:

Such patents can be granted to any persons or firms, whether foreigners or nationals, who agree to establish operations in a developing country for the purpose of producing goods that are neither patented nor manufactured there already or of employing technological processes that are neither patented nor already used in the country concerned.

*Id.* at 253 (proceeding to observe that an industrial development patent system dispenses with traditional protectability requirements and looks instead to evidence that the applicant will make a substantial investment in the local development of a given technology).

147. Natalie M. Derzko, *Using Intellectual Property Law and Regulatory Processes to Foster the Innovation and Diffusion of Environmental Technologies*, 20 HARV. ENVTL. L. REV. 3, 14 (1996) (cited in Crinson, *supra* note 19, at 48).

regardless of technical discipline.<sup>148</sup> Moreover, a number of scholars have proposed second tier regimes or other intellectual property schemes that aspire to provide adequate protection for computer software.<sup>149</sup> It takes little imagination to extend this reasoning to justify the creation of a multitude of additional second tier patent regimes having specialized subject matter requirements.<sup>150</sup> This squarely raises the "legal hybrids" concerns that Professor Reichman has articulated in several scholarly works.<sup>151</sup>

## II. SECOND TIER PATENT REGIMES AND GLOBAL PATENT POLICY: A CRITICAL APPRAISAL

The drive to strengthen and harmonize second tier patent protection in Europe has generated a spirited policy debate both within Europe<sup>152</sup> and elsewhere.<sup>153</sup> Two general rationales are of particular interest. First, second tier patent protection is said to advance the interest in enhancing access to the patent system. Leaving aside for the moment the critical normative question of whether enhanced access of the variety promised by second tier protection makes any sense whatsoever,<sup>154</sup> thoughtful analysis reveals considerable doubts about whether second tier protection can really hope to offer the enhanced access that its proponents promise. Second, the European initiative to harmonize second tier patent protection might serve as a prototype for regular patent

148. *See id.* at 15–16.

149. *See, e.g.,* Pamela Samuelson, Randall Davis, Mitchell D. Kapor, & J.H. Reichman, *A Manifesto Concerning the Legal Protection of Computer Programs*, 94 COLUM. L. REV. 2308, 2413 (1994) (discussing a variety of approaches, including a "market-preservation legal regime" that would "provide a short period of blockage against cloning, and a system by which developers of incrementally innovative software designs . . . could register their innovations and make them available for licensing"). *See also infra* note 205 (citing scholarly proposals for second tier regimes especially designed for computer software).

150. To offer but a single example, scholars have recently discussed the possibility that the requirements in the Americans with Disabilities Act may have spurred the development of assistive technologies. *See* Heidi M. Berven & Peter D. Blanck, *The Economics of the Americans with Disabilities Act: Part II: Patents, Innovations and Assistive Technology*, forthcoming, 12 NOTRE DAME J.L. ETHICS & PUB. POL'Y (1999) (citing evidence of increased patenting activities). If this is true, then by the same argument that supports creation of an environmental patent, one could call for the introduction of a regime for "assistive technology patents."

151. *See, e.g.,* Reichman, *Legal Hybrids*, *supra* note 61, at 2503 (arguing that current legal hybrids such as utility models are "improvised responses to sectoral protectionist demands," which "lack coherent theoretical foundations and reflect different economic premises."). *See also infra* Part III.C.

152. In addition to the policy analysis provided in the Green Paper, COM(95)370, *supra* note 20, at 1–42, and the White Paper, COM(97)691, *supra* note 20, at Parts 1–3, recent scholarship offering a policy discussion on various second tier patent proposals includes Kern, *supra* note 85 (supporting the Max Planck proposal), and LEWELYN, *supra* note 86, at 32–49 (criticizing the Green Paper).

153. *See, e.g.,* Crinson, *supra* note 19, at 46–50 (focusing on the possible introduction of second tier protection in Canada).

154. I take up that question in Part III.

harmonization in Europe, which might in turn give impetus to global harmonization. While the feasibility<sup>155</sup> of second tier harmonization as a harmonization prototype cannot immediately be discounted, second tier harmonization presents a real danger that resources will actually be diverted away from regular patent harmonization.

### A. Second Tier Patent Protection and the Access Rationale

Classical utility model regimes came into being due in no small part to concerns over access to the regular patent system.<sup>156</sup> Access continues as a dominant rationale underlying proposals for expanded second tier patent protection.<sup>157</sup> Indeed, the dimensions of the access rationale are probably much broader today, encompassing promises of enhanced access to small and medium-sized business enterprises ("SMEs"), access to products having short life cycles, and access for non-traditional subject matters such as computer software and biotechnology products.

#### 1. Access for Small Enterprises

Second tier patent protection, as envisioned in the EU's White Paper and in the proposed Australian Innovation Patent System, promises enhanced access to the patent system for small and medium-sized enterprises.<sup>158</sup> This is to be achieved by eliminating pre-grant substantive examination (which is supposed to reduce costs to a level that fits within the budgets of typical SMEs) and by relaxing the inventive step standard (on the proposition that SMEs often do not innovate "to the same level" as larger companies).<sup>159</sup>

155. As with the access question, this analysis is restricted to feasibility, excluding from consideration the larger question of whether harmonization of substantive patent standards is desirable in the first instance.

156. See *supra* notes 25-30 and accompanying text (describing rationales motivating creation of the U.K. Utility Designs Act of 1843).

157. Michael Crinson employs a similar label, "accessibility," to summarize a number of the policy rationales that have been advanced to justify expanded second tier patent protection. Crinson, *supra* note 19, at 51.

158. See White Paper, COM(97)691, *supra* note 20, at Part Two (A)(1) (stating that the proposed second tier system will benefit SMEs in Europe); Government Response, *supra* note 112 at introductory text preceding recommendations (stating that the proposed Australian Innovation Patent System will benefit SMEs in Australia). See also July 1998 Opinion, *supra* note 20, at C235/30, Point 5.3 ("Utility models are the ideal mechanism to protect inventions which cannot be patented. As such they represent a legal instrument particularly well-suited to SMEs."); Richards, *supra* note 6, at 47-4 to 47-5 (observing that one of the principal "philosophical" reasons for adopting utility model protection generally is that it supposedly benefits the small scale innovator).

159. Philip Leith, *Harmonisation of Intellectual Property in Europe: A Case Study of Patent Procedure*, in 3 PERSPECTIVES ON INTELLECTUAL PROPERTY 117-18 (Adrian Chandler, ed., 1998) (reciting these strategies). The argument that the existing inventive step/obviousness standard favors large entities (and that therefore the relaxation of the standard would benefit SMEs) rests on assumptions about market power and about the level of innovation common to large entities.

At bottom, these strategies raise broad theoretical concerns that are best dealt with separately.<sup>160</sup> But even assuming for the moment that the protection of subpatentable innovation has a normative and economic basis, the proposition that second tier patent protection in fact provides enhanced access for SMEs should be evaluated critically. The claim could turn out to be of signal political importance in the United States, particularly if pending patent reform legislation<sup>161</sup> passes, given that SMEs claim to be unfairly disadvantaged under the reforms and may be quick to embrace second tier patent protection with its stated pro-SME emphasis. The availability of harmonized second tier protection across the EU would give even further impetus to efforts to bring second tier protection to the United States.

The question of whether second tier protection in fact offers enhanced access for SMEs may ultimately turn on empirical proofs. No such proofs are necessary, however, to demonstrate the fundamental flaws in typical claims of enhanced access appearing in the current literature.

Cost is no doubt the major obstacle impeding SMEs access to patent systems worldwide. In addressing this concern, however, second tier patent proposals focus strictly on the reduction of *acquisition* costs. It seems quite safe to assume that second tier protection would certainly be characterized by lower fees (filing fees, issuance fees, and post-issuance maintenance fees).<sup>162</sup> In addition, by avoiding the creation of a

Kingston, for example, argues in representative fashion that the inventive step standard for regular patents forces incremental advances out of the patent system (because the advancements invariably do not rise to the level of an inventive step) and relegates them to "protection" purely by market forces, like market power. William Kingston, *Patent Protection for Modern Technologies*, 1997 INTELL. PROP. Q. 350, 360. Because larger firms are assumed to have superior market power, incremental innovation will be dominated by large firms. *See id.* This presages a lower overall level of innovation, because large firms are assumed to carry out a lower level of innovation. *See id.*

The argument that direct protection schemes such as the "innovation patent" would benefit SMEs draws in part from these arguments, because such schemes feature the abolition of the inventive step/obviousness standard. *See supra* note 130 and accompanying text. In the main, however, the argument that direct protection of innovation benefits SMEs follows a much different course. The innovation patent only offers protection where commercialization has been realized, a capacity often lacking in independent inventors. Proponents of direct protection suggest that independent inventors and SMEs nonetheless could enter into contractual arrangements with larger firms, and that the granting authority, in recognition of such arrangements, would grant the innovation patent jointly. *See* Kingston, *Innovation Patents and Warrants*, *supra* note 127, at 71. The term would be calculated as the average of what the large firm and the SME would each receive on its own, a benefit to the large firm because the SME, possessing minimal "innovative capacity," would qualify for an extensive term.

160. *See infra* Part III for an analysis of the theoretical implications of second tier patent regimes.

161. Omnibus Patent Act of 1997, S. 507, 105th Cong.; 21st Century Patent System Improvement Act, H.R. 400, 105th Cong. (1997).

162. *See, e.g.,* Crinson, *supra* note 19, at 37 (offering the same prediction). These fees presumably could be manipulated in such a way that the promise of low-cost protection becomes a self-fulfilling prophecy.

Community level right, the EU neatly avoids questions about the costs of translations, another major component of costs for would-be patent applicants.<sup>163</sup>

A number of questions should be raised about the proposition that second tier protection brings reduced costs. First, looking strictly to government fees, one should question the likely magnitude of the cost reduction. National patent offices in Europe and the United States, as well as the EPO, are embarking on cost reductions for the regular patent system even as the second tier proposals are being considered.<sup>164</sup> Claims that second tier protection offers generous reductions in fees may prove to be seriously inflated.<sup>165</sup>

Perhaps more importantly, one may wonder why the problem of burdensome costs for SMEs is best addressed via the indirect route of creating an entirely new regime of rights which may or may not prove more affordable to SMEs. Attacking costs of the regular patent system directly might seem to be effort better spent. Indeed, U.S. law already contains innovations which at least attempt to address the problem of high acquisition costs. For example, "small entities" qualify for a fifty percent reduction in regular patent fees.<sup>166</sup> While few would argue that provisions such as this amount to a panacea for SMEs wishing to participate in the patent system, they at least raise hope that acquisition costs can be made reasonable through direct means rather than through the creation of an entirely new layer of intellectual property rights.

Second, attorneys fees represent a substantial acquisition cost for regular patents which dwarfs government fees in the ordinary case.<sup>167</sup> Given the substantive demands of the proposed second tier regimes for adequate disclosure<sup>168</sup> and limitations on opportunities for post-grant

163. See LLEWELYN, *supra* note 86, at 37 (pointing out that the Green Paper, which envisioned the possibility of creating a Community-level utility model right, nonetheless sidestepped the question of translation costs).

164. See *supra* note 4 (collecting reports on recent fee reductions in a number of key patent offices).

165. See LLEWELYN, *supra* note 86, at 35-36 (comparing fees at the U.K. Patent Office to those at the European Patent Office). One EC official has acknowledged that second tier protection may be less attractive in the United States because the fee structure in the regular patent system is less onerous for SMEs. See Patrick Ravillard, *The Proposal for an EU Directive on Utility Models*, in Proceedings of the Sixth Annual Conference on International Intellectual Property Law & Policy, Program VB Part 1, p. 4 n.2 (1998) (observing that the utility model might not be as attractive in the United States because the United States features a "unitary patent system, no translation costs (only one language), quick grant, special fees for SMEs (50 percent lower), etc.").

166. See 37 C.F.R. § 1.9 (1998) (setting out relevant definitions); 37 C.F.R. § 1.16-.17 (1998) (setting out the fee structure); 37 C.F.R. § 1.27 (1998) (setting out procedures for claiming small entity status).

167. Attorney fees may consume more than 50% of acquisition costs. See Crinson, *supra* note 19, at 37 (citing surveys).

168. Second tier patents would require a disclosure complying with the traditional requirements applicable to patent applications. See, e.g., White Paper, COM(97)691, *supra* note 20, at

amendments,<sup>169</sup> there is every reason to believe that attorneys fees will also represent a substantial acquisition cost in those regimes. Indeed, there may be even a greater need for attorney expertise in the drafting of second tier patent applications because, in the absence of substantive examination, applicants may believe that only by placing a premium on skillful drafting can they demonstrate reasonably to potential licensees that the second tier patent secures enforceable rights.<sup>170</sup>

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Arts. 8(1)(b) (requiring a description of the invention), 12 (requiring that the invention be disclosed "in a manner [that is] sufficiently clear and complete for it to be carried out by a person skilled in the art"), 13(1) (requiring claims to be "clear and concise" and "supported by the description."). Under U.S. regular patent law, the requirements are contained in the first paragraph of 35 U.S.C. § 112 (1994), which imposes three supposedly distinct requirements: the submission of an "enabling" disclosure, the disclosure of the "best mode" of carrying out the invention, and the submission of a "written description" of the invention. *See Vas-Cath, Inc. v. Mahurkar*, 935 F.2d 1555, 1563-64 (Fed. Cir. 1991) (declaring that "35 U.S.C. § 112, first paragraph, requires a 'written description of the invention' which is separate and distinct from the enablement requirement" and whose purpose is "to convey with reasonable clarity to those skilled in the art that, as of the filing date sought, [the inventor] was in possession of the invention." [italics omitted]); *Glaxo Inc. v. Novopharm Ltd.*, 52 F.3d 1043, 1050 (Fed. Cir. 1995) (contrasting the enablement requirement, which "looks to the objective knowledge of one of ordinary skill in the art," with the best mode requirement, which "looks to whether specific instrumentalities and techniques have been developed by the inventor and known to him at the time of filing as the best way of carrying out the invention.").

Recent litigation suggests that U.S. courts are scrutinizing the written description and enablement requirements more rigorously. *Gentry Gallery, Inc. v. Berkline Corp.*, 134 F.3d 1473, 1478-80 (Fed. Cir. 1998) (holding that disclosure of a species of a mechanical invention does not necessarily support a claim drawn to a genus under the written description requirement); *Regents of the Univ. of Cal. v. Eli Lilly & Co.*, 119 F.3d 1559, 1568 (Fed. Cir. 1997) (holding that disclosure of a species of a biotechnology invention does not necessarily support a claim drawn to a genus under the written description requirement because nothing compels the conclusion "that a description of a species always constitutes a description of a genus of which it is a part"); *Genentech, Inc. v. Novo Nordisk*, 108 F.3d 1361, 1366 (Fed. Cir. 1997) (holding that a disclosure providing detail as to a species of a biotechnology invention does not necessarily support a claim drawn to a genus under the enablement requirement; patent protection is not granted for "vague intimations of general ideas that may or may not be workable . . . Tossing out the mere germ of an idea does not constitute enabling disclosure.").

169. Rules limiting the second tier patent owner's right to amend the disclosure or claims post-grant present a dilemma for second tier patent regimes. On the one hand, to preserve some limited level of notice to the public, it would seem appropriate to place strict limitations on post-grant amendments. On the other hand, doing so places a premium on foresight in drafting, imposing up-front costs on applicants. Existing schemes show considerable disparity in their approaches to the problem of post-grant amendments. *See, e.g., Nakajima*, *supra* note 98 at 18-19 (reporting that Japanese utility models can be amended at any time prior to the reaching of a final verdict in an invalidity trial, but the only allowable amendments after the utility model is registered are amendments deleting claims); *cf. Australian Patents Act 1990*, § 108 (offering a relatively liberal opportunity to amend petty patents post-grant to remove grounds on which the petty patent would otherwise be invalid). Australian courts analyzing the validity of petty patent claims often refer to the applicant's opportunity to amend. *See, e.g., High Tech Auto Tools Pty. Ltd. v. Ferochem Pty. Ltd.*, (1994) 29 I.P.R. 337 (referring to possibility of amending petty patent to overcome a general validity challenge based upon § 28(1)); *Murray Joseph Wright v. Ajax Davey Pty. Ltd.*, (1987) 9 I.P.R. 77 (referring to possibility of amending petty patent to overcome a challenge for lack of clarity and fair basis under § 40); *Re Application by Guertler*, (1984) 4 I.P.R. 208 (giving applicant opportunity to amend petty patent claim "to encompass the features which [patentee] has argued as being the features of his invention.").

170. *See Crinson*, *supra* note 19, at 38; *Nakajima*, *supra* note 98, at 20 (advising that Japanese



Third, and most crucially for second tier patents as viewed from the U.S. perspective, second tier patent regimes simply do not address the most significant obstacle to SMEs access to the patent system: the cost and complexity of enforcement of rights.<sup>171</sup> It is commonly accepted that enforcement cost is a major patent policy problem<sup>172</sup> that is especially acute for SMEs.<sup>173</sup> Yet the proposed second tier patent regimes, if anything, place the second tier patent owner in a far worse position with regard to the cost of enforcing rights.

Fundamentally, because a second tier patent regime shifts responsibility for the determination of "soft" obviousness to the judicial process, each trial of a second tier patent, invariably involving an exhaustive validity attack, is potentially more complicated than a corresponding trial of a regular patent.<sup>174</sup> It also seems unlikely that any responsible second tier regime would confer a statutory presumption of validity on second tier patent owners, or impose an elevated standard of proof for overcoming any such presumption.<sup>175</sup>

utility models be drafted more carefully after the 1994 amendments limiting the opportunity to amend the utility model post-grant).

171. Perhaps this is because utility model proponents have persisted in arguing that utility models offer the promise of rapid enforcement. *See, e.g.*, BEIER, *supra* note 63, at I/A/8 (arguing that "[t]he quick enforceability of utility models is one of the great advantages of the German utility model system . . ."). For a variety of reasons enumerated herein, the promise of rapid (and, concomitantly, low-cost) enforceability of second tier patent rights should be evaluated critically, especially when considered in the context of U.S.-style litigation.

172. For a U.S. perspective, *see, e.g.*, ADVISORY COMMISSION ON PATENT LAW REFORM, A REPORT TO THE SECRETARY OF COMMERCE 75-110 (1992) (noting that "one of the most significant problems facing the United States patent system is the spiraling cost and complexity associated with the enforcement of patent rights" and offering reform proposals).

173. For statistics on the cost of patent litigation in Europe generally, the United Kingdom particularly, and the United States, *see, e.g.*, Kingston, *Patent Protection, supra* note 159, at 359 (collecting authorities). For a frank, anecdotal account of the costs of patent litigation for small enterprises, *see* Mary Baechler, *Learning to Live with Patent Copycats*, WALL ST. J., July 18, 1994, at A12 (describing the "Patent Game" as being "like a game of chicken, where the winner is the one who can spend the most without blinking, and even if you've won, you've spent months of your life in boring depositions"). For a British perspective, *see, e.g.*, *An Exercise in Patents*, ENGINEER 24 (June 5, 1998) (asserting that "[f]or the small, innovative engineering firm, protection of intellectual property is a costly nightmare," and proceeding to report on the utility model directive as potentially "a more practical aid to small firms").

174. *See, e.g.*, Crinson, *supra* note 19, at 38 (suggesting that second tier patents may be more frequently attacked by competitors than would be the case with regular patents). Infringement trials of regular patents, at least in the United States, also routinely involve some challenge to validity, but several factors ordinarily limit the scope of the challenge. The existence of pre-grant examination suggests that at least some validity issues will be aired fully before the PTO. Moreover, in the face of the statutory presumption of validity, patent challengers may choose to forego marginal validity challenges. On the statutory presumption of validity, *See generally* 35 U.S.C. § 282 (1997) (statutory presumption of validity for patents); *Hybritech Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 1375 (Fed. Cir. 1986) (noting that "the presumption remains intact and on the challenger throughout the litigation . . .").

175. By contrast, challengers must present "clear and convincing" evidence as to underlying facts to overcome the statutory presumption of validity of a regular patent. *See, e.g.*, *Monarch Knitting Mach. Corp. v. Sulzer Morat*, 139 F.3d 877, 881 (Fed. Cir. 1998).

Worse yet, it seems improbable that a court operating under established principles of equity jurisprudence would be willing to grant preliminary injunctive relief on a claim of alleged infringement of a second tier patent. Federal Circuit jurisprudence requires a regular patent owner to establish a likelihood of success on the merits on validity as part of the showing for preliminary injunctive relief, notwithstanding the presumption of validity.<sup>176</sup> Making such a showing for a second tier patent would be extraordinarily difficult.<sup>177</sup> The virtual elimination of temporary relief may be devastating to SMEs, who might otherwise have turned to the preliminary injunction as a low-cost source of leverage in eventual settlement negotiations.

Second tier patent regimes generate inherently insecure rights,<sup>178</sup> and many of the difficulties that would plague owners of second tier

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176. See, e.g., *New England Braiding Co. v. A.W. Chesterton Co.*, 970 F.2d 878, 882–83 (Fed. Cir. 1992) (preliminary injunction movant must show, in light of the presumptions and burdens that will inhere at trial on the merits, that movant's claim will survive nonmovant's validity challenge). See also *Genentech, Inc. v. Novo Nordisk*, 108 F.3d 1361, 1364 (Fed. Cir. 1997) (if the nonmovant raises "a 'substantial question' concerning validity . . . the preliminary injunction should not issue.").

177. Experience with petty patents in Australia may demonstrate as much. For example, in *Peter Pan Electrics Pty. Ltd. v. Newton Grace Pty. Ltd.* (1985) 70 A.L.R. 731 (Austl.), the owner of a petty patent sought an interlocutory injunction against alleged infringement of the petty patent. Analyzing the balance of convenience, the court pointed out that "petty patent applications are not necessarily subject to a rigorous search before grant and to that extent the public interest and the interest of potential infringers have not been safeguarded to the same extent as they are in the case of standard patents." *Peter Pan* (1985) 70 A.L.R. at 742. This observation weighed heavily in the court's decision that the balance of convenience cut against the grant of interlocutory relief.

178. See, e.g., Richards, *supra* note 6, at 47–8 (noting that second tier protection implicates the tensions between fairness and certainty, in that fairness considerations might counsel in favor of extending second tier patent protection to "small innovators," but the inherent uncertainties of second tier protection for marketplace participants may counsel against creating such a regime). See also *id.* at 47–4 (acknowledging the argument that the softened inventive step standard, coupled with the lack of pre-grant substantive examination, yields insecure rights and leads to uncertainty and economic inefficiency).

The Green Paper turns this argument on its head by offering uncertainty as a positive justification for adopting such second tier regimes. The Green Paper acknowledges the argument that a second tier patent system "might leave firms unsure of their legal position, since it would produce large numbers of registered but untested rights which conferred no definitive entitlement on the holder or anyone else." COM(95)370, *supra* note 20, at 56 (reporting on a U.K. study which laid out the uncertainty argument). But, according to the Green Paper authors, "there is no reason to expect a flood of untested rights in a system of registration" because "[i]n Member States which already possess such a system there is an equilibrium between utility models and patents: the absence of prior examination means that the legal certainty conferred by a utility model is limited, so that a patent will often provide more effective protection." This is a convoluted and ironic argument for justifying the introduction of broader second tier protection. It also ignores the fact that until recently, national systems took the form of classical utility model regimes, not full-fledged second tier patent regimes as offered in present proposals. See *supra* Part I (analyzing the differences). For a similar argument that ignores conceptual distinctions in the types of second tier systems, see COM(95)370, *supra* note 20, at 58 (arguing that dispensing with pre-grant substantive examination is preferred, because "[t]he many years of positive experience built up in the countries which possess this form of protection show that the lower degree of legal certainty has no great practical repercussions.") (Citing 21 INDUS. PROP. 9

patents in attempting to enforce their rights can be attributed to the inherent uncertainties of second tier protection.<sup>179</sup> There are legislative fixes, but they run squarely contrary to the goal of enhancing access for SMEs that have limited litigation budgets. For example, the proposed Australian Innovation Patent System would require the owner of an innovation patent to request substantive examination from the Australian patent office, and await its completion, prior to initiating or even threatening an infringement action.<sup>180</sup> This requirement places

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(1992)).

179. Such problems would be particularly acute in enforcement of "innovation warrants." The scope of warrants would be determined by a so-called "whole information contents" approach, in which the warrant-holder would apparently have free rein to redefine the scope of protection to encompass any "new information contained in the product," apparently even if undisclosed in the warrant document. Kingston, *Innovation Patents and Warrants*, *supra* note 127, at 76. It is difficult to imagine how such a system could be rationally administered in enforcement proceedings, or how competitors in the marketplace could possibly be expected to plan their behavior to avoid infringement.

180. Government Response, *supra* note 112, at text accompanying Recommendation 7; *see also* Suthersanen, *supra* note 10, at 49 (confirming this observation). The French *certificat d'utilité* system, a short-term patent system providing no pre-grant substantive examination, has featured a similar provision for some time. *See* Krasser, *supra* note 17, at 951; Patent Law of France, Art. 93 (*translated in* SINNOTT, *supra* note 51, at FRANCE 90.39-40).

Japanese utility model law, as amended in 1994 to eliminate pre-grant substantive examination, also contains a compulsory report provision. *See* Nakajima, *supra* note 98, at 18-19 (relating that under the 1994 amendments, a utility model owner must provide notification to the alleged infringer in the form of a warning letter and a technical evaluation report procured from the JPO, where the evaluation report entails a substantive examination carried out by the examiner extending to documentary sources of prior art). Interestingly, Mr. Nakajima advises applicants to request a technical evaluation report immediately upon the filing of any important utility model, but warns that the results of such a report may not be available very rapidly. *See id.* at 20. This starkly illustrates the point that promise of quick, low-cost issuance beneficial to SMEs is illusory if applicants will request substantive examination as a practical matter before a patent is granted for subject matter that they deem important.

The proposed harmonized European regime would leave to member states the critical decision as to whether to require the second tier patent owner to request substantive examination prior to initiating infringement proceedings. COM(97)691, *supra* note 20, at Art. 16(4) ("In the provisions they adopted in order to comply with this Directive, Member States may provide that a search report is compulsory in the event of legal proceedings being brought to enforce the rights conferred by the utility model."). The Economic and Social Committee has recommended that Member States implement such compulsory provisions. *See* July 1998 Opinion, *supra* note 20, at C235/29, Point 4.9.1. *But cf.* COM(95)370, *supra* note 20, at 74-5 (proposing that the issue of securing a search report in an enforcement proceeding be left to the court's discretion in each case).

In certain circumstances, second tier patent owners may wish to initiate substantive examination themselves, possibly even prior to grant. The European proposal would allow applicants to request a prior art search report. *See* COM(97)691, *supra* note 20, at Art. 16(1). *But see* July 1998 Opinion, *supra* note 20, at C235/29, Point 4.9 (recommending that the applicant's ability to request a search report be limited to exceptional circumstances to preserve the viability of the second tier system, and expressing concern that search report requests will be used "only by the most economically powerful applicants"). *See also* COM(95)370, *supra* note 20, at 71 (reporting survey results that supposedly suggested a "largely positive assessment" in response to questions about whether utility model applicants should have the option to request prior art searches).

It does not appear that the Australian system will allow applicants to initiate substantive examination prior to grant. *See* Government Response, *supra* note 112, at text accompanying Recommendation 7 (explaining government's rejection-in-part of the recommendation that appli-

the second tier patent owner in a worse position than a regular patent owner in seeking a rapid judicial intervention.<sup>181</sup> Likewise, second tier proposals envision subjecting second tier patents to administrative revocation.<sup>182</sup> Because third parties can participate fully in such proceedings, they are generally much more costly and complex than *ex parte* examination, again suggesting that the second tier patent owner is actually in a worse position than the corresponding applicant for a regular patent.<sup>183</sup>

Proposals for second tier patent regimes simply fail to address the crucial problems concerning enforcement of rights. For example, the Australian government's report on the Innovation Patent System proposal observes that

There are clear indications that for the innovation patent system to be attractive to users it must encompass provisions for a less costly and more timely means for enforcing innovation patent rights. However, because the channels for enforcement of innovation patent rights form part of the existing adversarial system there are inherent difficulties in proposing discrete and workable solutions.<sup>184</sup>

The government goes on to raise the possibility of alternative dispute resolution mechanisms being used ("low cost non judicial alternatives"), in a manner that seems more akin to vague hope than a concrete, workable proposal.<sup>185</sup>

cants be allowed to initiate substantive examination any time within three years of filing).

181. On the other hand, it arguably presents efficiency benefits from a societal perspective in that the market decides which applications are eventually subjected to thorough examination and which are not.

182. See, e.g., COM(97)691, *supra* note 20, at Art. 24 (and accompanying commentary, relating that the revocation provision is modeled after Article 56 of the Community Patent Convention). For an overview of administrative revocation proceedings, see Janis, *supra* note 60, at 99–111.

From the U.S. perspective, this presents yet another implementation problem, because the United States currently lacks the administrative apparatus to conduct administrative revocation proceedings.

183. See, e.g., Liesegang, *supra* note 43, at 7 (describing administrative "cancellation" procedures under the German utility model system). In most such jurisdictions, a regular patent owner could eventually be subjected to a post-grant cancellation proceeding.

184. Government Response, *supra* note 112, at text accompanying Recommendation 13 (asserting that "[t]he problem of providing an avenue for enforcement of innovation patent rights at a level lower than that of the Federal Court and the Supreme Courts be acknowledged as requiring serious and urgent attention"). Moreover, the proposition that a cost-effective patent ADR mechanism could actually be created is certainly not free from controversy.

185. There may be a silver lining. If, indeed, a second tier patent regime generates innovative proposals for alternative dispute resolution (ADR) mechanisms that would satisfactorily handle complex patent disputes, the benefits would be substantial, assuming that the lessons learned thereby could be applied to the litigation of regular patents. Again, however, directly addressing the problem by encouraging usage of new ADR approaches in regular patent disputes seems likely to be more fruitful. Moreover, the proposition that a cost-effective patent ADR mechanism

A fourth major failing endemic to second tier proposals is the characteristic omission of any consideration of another category of downstream costs that might be labeled "clearance" costs. By clearance costs I refer to all the costs of doing business in an environment in which others own second tier patent rights. It would be easy, perhaps, for an SME seduced by the promise of a new form of intellectual property rights to forget that others will also be eligible to own such rights and to enforce them.

In a regular patent system, all users partially subsidize the cost of clearance by paying fees to the examining agency and receiving a substantive examination prior to the grant of patent protection. By contrast, in a second tier patent regime without pre-grant substantive examination, the responsibility for applying the substantive standards of patentability is shifted to the judiciary, and the costs are correspondingly borne by the litigants. In practical terms, the result is that private actors will more frequently face the need to procure clearance opinions to ensure that their proposed activities do not infringe valid second tier patent rights. Those clearance opinions will unquestionably be highly complex, given the elusive nature of the relaxed inventive step standard. This could translate to greatly increased costs of doing business for all enterprises in a given area of technology, and SMEs are presumably least well-positioned to handle such costs.<sup>186</sup> Another possibility is that private actors will routinely find it necessary to initiate administrative revocation proceedings. Experience with post-grant opposition in Europe may indicate that the costs of such procedures will be significant.<sup>187</sup>

Finally, nothing in the existing second tier proposals, or in current utility model systems precludes large entities from securing second tier patent rights as an independent form of protection as a means for establishing priority and gaining temporary protection during pendency of a regular patent application,<sup>188</sup> or as a second line of protection in

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could actually be created in any event is not free from controversy.

186. See, e.g., Leith, *supra* note 159, at 119 (asserting that in the absence of substantive examination, manufacturers will have to analyze validity themselves, making their task more difficult).

187. Provisions compelling second tier patent owners to initiate substantive examination prior to enforcing second tier patent rights would not alleviate the problem. An actor in the marketplace routinely would have to assess the validity and scope of second tier patent protection before the commencement or threat of any enforcement action, and hence, before the second tier patent owner was compelled to procure a technical evaluation report or initiate substantive examination.

188. For example, large firms might use the second tier patent as temporary protection during pendency of a regular patent application directed to the same invention. See, e.g., Kern, *supra* note 85, at 629 (adverting to the possibility that large firms would employ the second tier patent as "makeshift protection" or a "quick weapon" while regular patent prosecution was ongoing); Hausser, *supra* note 44, at 316-17 (noting that utility model applications are frequently used as "place-holders" for regular patent applications). The White Paper includes provisions confirming Paris Convention priority and establishing internal priority. See COM(97)691, *supra* note 20, at Art. 17 (providing that a utility model can serve as a Paris Convention priority filing for a regular

addition to regular patent protection.<sup>189</sup> Here again, there is vast potential for SMEs to come out on the short end.<sup>190</sup> Large entities, if so inclined, might well possess the wherewithal to “flood” a promising area of technology with an array of second tier patent applications, presenting a significant impediment to SMEs attempting to enter the market,<sup>191</sup> and may rely on superior resources to control enforcement

patent application, and vice versa); *See id.* at Art. 18 (providing that a patent application can serve as a priority filing for a utility model application filed within twelve months and directed to the same invention). Similar requirements exist in current German utility model law. *See* Utility Model Act §§ 5–6 (translated in BEIER, *supra* note 63, at I/B/203); *see also* Liesegang, *supra* note 43, at 5–9 (discussing the benefits of “branching off” a utility model from a patent application). For the proposed Australian approach, *see* Government Response, *supra* note 112, at Recommendation 10 (proposing rules on priority, divisionals, and convertibility of an innovation patent application to a standard patent application).

189. The White Paper seems to leave open the possibility of dual protection of the same subject matter by both regular and second tier patents. COM(97)691, *supra* note 20, at Art. 22(1) (“The same invention may form the subject matter, simultaneously or successively, of a patent application and a utility model application.”); *id.* at commentary on Art. 22 (“Such dual protection is worthwhile where the user wishes to obtain temporary protection pending the grant of a patent, where he is not sure that the inventive step is sufficient for a patent, or where he wishes to be particularly well protected by two different systems for the same invention.”). The White Paper does provide that Member States can legislate that a granted utility model is “deemed ineffective” where a patent is granted to the same invention, *see id.* at Art. 22(2), or, in the alternative, should take “appropriate measures” to ensure that rights holders do not institute “successive proceedings under both sets of protection arrangements.” *Id.* at Art. 22(3).

The Economic and Social Committee takes a dim view of proposed Article 22. *See* July 1998 Opinion, *supra* note 20, at C235/30, Point 4.14 (arguing that Member States should be compelled to deem utility model protection “ineffective” where a patent has been granted for the same invention). Even under this proposal, the relevant decisionmaker would be required to undertake a claim-to-claim comparison, an analysis that has proven particularly trying in double patenting disputes in the United States. *See, e.g.,* General Foods Corp. v. Studiengesellschaft Kohle MbH, 972 F.2d 1272, 1279 (Fed. Cir. 1992) (discussing the law of double patenting).

The Australian Government has rejected the recommendation that dual protection be allowed under the proposed Innovation Patent System. Government Response, *supra* note 112, at Recommendation 11. The Government reasoned that

allowing applicants to hold standard and *innovation patent* rights would be a form of double-dipping that would not be in the national interest. This is because an *innovation patent* can have a wider scope than a standard patent, as its inventive threshold is lower. Having simultaneous protection under both systems would allow firms with inventions meeting the standard patent threshold to have a 20 year protection period that would be enhanced during the first 8 years by the innovation patent . . . . This would serve to limit the options for inventing around the invention and would provide a stronger form of protection than either individually . . . . [T]his is against the national interest, especially as dual protection is likely to be sought mainly by large foreign companies.

*Id.* at text accompanying Recommendation 11. Japanese law also currently disallows dual protection. *See* Crinson, *supra* note 19, at 28.

190. *See, e.g.,* LLEWELYN, *supra* note 86, at 24-5 (asserting that large entities may be more adept at securing intellectual property rights and may react more quickly than SMEs if second tier patent rights become available); *see id.* at 108 (arguing that experience with the Australian petty patent system demonstrates that large companies will be quick to secure second tier rights).

191. *See id.* at 108 (arguing that second tier patent rights held by large entities could present a barrier to entry by SMEs). *See also* Joanna Schmidt, *EC Considers Protections for Utility Models*, IP WORLDWIDE (May/June 1996) (visited Mar. 20, 1997) <<http://www.ipww.com/may96/p20ec.html>> (commenting critically on the Green Paper proposals and predicting that as a result of the lowered inventive step standard, “the technical domain will be jammed with monopolies based on unexamined claims relating to minor technology. It is doubtful whether this would be a posi-

proceedings.<sup>192</sup> Indeed, the prospect of vigorous participation across the board in the acquisition of rights in subpatentable innovation also raises very serious concerns from a social utility perspective.<sup>193</sup> Property theory predicts the possibility that, rather than promoting technological progress, a second tier patent regime might actually retard technological progress by creating "anticommons" property.<sup>194</sup>

## 2. Access for Inventions Having Short Life Cycles

Second tier patent proposals also routinely promise to provide "quick" protection that is effective in securing intellectual property rights for products having life cycles shorter than the average pendency of a regular patent application.<sup>195</sup> This is a particularly important justification for second tier patent protection because, if it is true that products across the board are experiencing steadily diminishing life cycles,<sup>196</sup> it is possible that second tier protection may be viewed as the dominant regime for the protection of technology.<sup>197</sup> Additionally, the possibility of quickly acquiring protection may be especially critical to small technology companies whose major assets comprise intellectual property rights. One commentator, for example, points out that second tier patents may provide small companies with the security necessary

tive development for European IP law.").

192. See LLEWELYN, *supra* note 86, at 110 (asserting that second tier patents, by their nature, are likely to generate more litigation than regular patents, and that large entities are likely to possess advantages in any such litigation by virtue of their superior resources and expertise).

193. Some commentators have acknowledged the argument, although without exploring fully the theoretical basis in property theory and economics. See, e.g., Leith, *supra* note 159, at 118 (reporting the argument that utility models "would simply make the task of the manufacturer more difficult: there would be a 'minefield' of utility models which might explode at any point in a manufacturer's operation."). *But cf.* Kronz, *supra* note 125, at 182 (claiming that in the context of direct protection schemes such as the "innovation patent," the abolition of the inventive step requirement will not lead to a "flood of inferior patents" because the requirement of actual commercial activity would significantly limit the number of potential grants).

194. See *infra* Part III.A for an analysis.

195. See, e.g., COM(97)691, *supra* note 20, at Part Two (A)(1). The Australian government has established the same goal for the Innovation Patent System. See, e.g., Government Response, *supra* note 112, at text accompanying Recommendation 7 ("Applicants will be granted an *innovation patent* after IP Australia has completed the formality examination of their application and the applicants have paid the appropriate fees. A grant under these conditions will provide the patentee with a right that is quick and cheap to obtain . . ."). The Australian recommendation on publication of the application three months after filing gives another indication of the speed with which innovation patents are expected to issue. See *id.* at text accompanying Recommendation 8 (stating that "innovation patents should be published as soon as IP Australia has completed the formality examination. This will occur as soon as possible and not later than three months after filing.").

196. See COM(95)370, *supra* note 20, at 24–28 (offering empirical evidence in support of the claim that product life cycles are growing shorter, and arguing that the need for expanded opportunities for second tier patent protection corresponds with this trend).

197. See LLEWELYN, *supra* note 86, at 49 (offering this prediction).

to obtain intermediate financing necessary to move a research program ahead to the next benchmark.<sup>198</sup>

Ultimately, however, many of the same considerations that undermine the goal of providing low cost protection through second tier regimes likewise undermine the goal of providing quick protection. Regimes which have sought to offer rapid issuance by abolishing pre-grant substantive examination, routinely provide that substantive examination, with its inevitable delays, must be requested prior to enforcement.<sup>199</sup> Post-grant administrative revocation procedures are likely to be available, and parties charged with infringement of second tier patent rights could presumably initiate a revocation proceeding and demand suspension of the infringement proceeding pending the outcome of the revocation.<sup>200</sup> Serious questions may be raised as to whether second tier patent regimes, as currently formulated in existing proposals, would be capable of providing "quick" protection in any commercially meaningful sense of the word.<sup>201</sup>

Here again, directly addressing the problem of improving the speed of issuance of patents from the regular patent system seems immeasurably more attractive than creating an entirely new system of intellectual property rights. Recent initiatives along these lines are showing promise. The U.K. Patent Office, for example, has implemented a "fast-track" procedure for regular patents which reportedly is facilitating the issuance of regular patents, after full examination, in less than twelve months.<sup>202</sup> United States patent regulations currently pro-

198. Crinson, *supra* note 19, at 51, argues that:

While the cost advantage of protecting one's innovation may be marginal under second tier protection rather than patent, there is a significant advantage to second tier protection in terms of the cost of invention. An enterprise with a research goal can make incremental advances, and a reward after each incremental advance may be critical for financing the next step. Second tier protection provides this opportunity for this intermediate financing that under a patent system may be lacking.

This presumes a regime that is sufficiently certain that markets are able and willing to assign value to second tier patent rights. For reasons already enumerated and to be explored in Part III, second tier rights may be so uncertain that the extent to which the rights would enhance the security of a company's intellectual property portfolio may be questioned.

199. See *supra* note 180 and accompanying text.

200. See, e.g., Nakajima, *supra* note 98, at 19 (describing the Japanese practice under which an infringement proceeding will be suspended pending the outcome of a validity "trial"). See also Monya, *supra* note 50, at 230, note 10 (noting that "trial" in this context refers to an administrative proceeding before the Japan Patent Office). Stays of enforcement proceedings, pending the outcome of administrative proceedings concerning patent validity, are already well-known in United States patent law. See Janis, *supra* note 60, at 78-81 (describing the practice of staying infringement suits pending the outcome of reexamination proceedings).

201. It could be argued that an early indication of rights (via issuance of a second tier patent) is better than no indication of rights, even if the early indication is, highly speculative. Considered in isolation, this may or may not be the case. Considered in connection with the multiplicity of additional costs that second tier patent protection imposes, it seems unlikely that the attenuated benefits that might flow from an early, tentative indication of rights would be worthwhile.

202. See Lees, *Design Problems*, *supra* note 54, at 225 ("As to speed and costs, it would be hard for any system to beat the fast-track procedure now available in the U.K. Patent Office with full



vide that applicants can obtain accelerated examination under specified circumstances by making the requisite showing in a "petition to make special."<sup>203</sup> In addition, applicants can now obtain a filing date in relatively rapid order by filing provisional applications, followed within a year by full-fledged applications.<sup>204</sup> The conceptual simplicity of these solutions as compared to second tier patent regimes suggest that even moderately effective direct solutions should be favored over second tier rights for securing meaningful patent protection for products with very short life cycles.

### 3. Access for Nontraditional Subject Matter

Another intriguing rationale for second tier patent protection is that it may provide a conceptual framework for the creation of intellectual property regimes devoted specifically to the protection of nontraditional technological subject matter. For example, commentators have suggested that a second tier patent regime be created expressly for the protection of computer software,<sup>205</sup> avoiding the extensive debates about the outer parameters of traditional subject matter eligibility provisions in the regular patent systems. Others have observed that second tier patent protection might be viewed as an attractive mecha-

examination for inventive step, whereby a patent can be obtained in under 12 months."); Crinson, *supra* note 19, at 38-39 (questioning whether the time savings afforded by second tier protection is really very significant as compared to fast-track patent issuance as currently being practiced in the U.K. Patent Office). See also Richards, *supra* note 6, at 47-8 (noting the argument that most patent offices, including the EPO, have mechanisms for expediting prosecution).

Additionally, in connection with its advanced notice of proposed rulemaking in support of a series of "Patent Business Goals," the United States Patent and Trademark Office has recently announced that it will seek to reduce patent application "processing" time (defined as the time that the PTO spends processing an application, not including time periods in which the PTO is awaiting action by applicant) to twelve months by the year 2003. See *Advanced Notice of Rulemaking Is Issued for Patent Business Goals*, 56 PAT. TRADEMARK & COPYRIGHT. J. (BNA), 647 (Oct. 8, 1998).

203. See 37 C.F.R. § 1.102(c)-(d) (1998) (authorizing petitions to make an application special); U.S. PATENT & TRADEMARK OFFICE, *MANUAL OF PATENT EXAMINING PROCEDURE* (6th ed., rev. 3) § 708.02 (1998) (describing a variety of grounds for petitions to make special).

204. See 35 U.S.C. § 111(b) (1995) (authorizing the filing of provisional applications). This may be especially attractive to applicants dealing in rapidly evolving areas of technology, or applicants who, for a variety of reasons, need to file rapidly. Charles A. Eldering, John P. Blasko, & Abbe E.L. Brown, *Comparative Analysis of Provisional Patent Applications Under U.S. and U.K. Law*, 79 J. PAT. TM. OFF. SOC'Y 791, 793 (1997) ("A key advantage of the provisional patent application in industries with rapidly changing technologies and short product cycles is the ability to obtain a filing date, and thus a constructive reduction to practice, of the invention described in the application.").

205. See, e.g., Mark Aaron Paley, *A Model Software Petite Patent Act*, 12 SANTA CLARA COMP. & HIGH TECH. L.J. 301 (1996); Richard H. Stern, *A Sui Generis Utility Model Law as an Alternative Legal Model for Protecting Software*, 1 U. BALT. INTEL. PROP. L.J. 108 (1993); Takahuru Higashima & Kenji Ushiku, *A New Means of International Protection of Computer Programs Through the Paris Convention—A New Concept of Utility Model*, 7 COMPUTER L.J. 1 (1986); Robert P. Sabath, Note, *Petty Patents in the Federal Republic of Germany: A Solution to the Problem of Computer Software Protection?*, 8 SW. U. L. REV. 888 (1976).

nism for protecting biotechnological inventions that lie at the margins of traditional utility/industrial applicability requirements, such as the results of genomic mapping endeavors, including the Human Genome Project.<sup>206</sup>

In a sense, these proposals are less radical than they seem at first glance. Certainly the conceptualization of second tier regimes as gap-fillers has precedent, given that classical utility model regimes were perceived as gap-fillers.<sup>207</sup> In addition, U.S. law already has experimented with *sui generis* intellectual property rights for semiconductor chip masks,<sup>208</sup> although experience with the Semiconductor Chip Protection Act (SCPA) is so limited that few conclusions can yet be drawn from it.<sup>209</sup>

The current European proposal for second tier patent protection, however, makes no real effort to embrace non-traditional subject matters or to spur the development of creative provisions for handling

206. See LLEWELYN, *supra* note 86, at 83–104 (extensively discussing the prospect of extending second tier protection to biotechnological inventions). For a scholarly exchange on the application of the utility requirement under U.S. patent law to claims to expressed sequence tags (ESTs) arising from the Human Genome Project, see Rebecca S. Eisenberg & Robert P. Merges, *Opinion Letter as to the Patentability of Certain Inventions Associated with the Identification of Partial cDNA Sequences*, 23 AIPLA Q.J. 1 (1995); Scott A. Chambers, *Comments on the Patentability of Certain Inventions Associated with the Identification of Partial cDNA Sequences*, 23 AIPLA Q.J. 53 (1995); Rebecca S. Eisenberg & Robert P. Merges, *Reply to Comments on the Patentability of Certain Inventions Associated with the Identification of Partial cDNA Sequences*, 23 AIPLA Q.J. 61 (1995). The United States Patent and Trademark Office's position on the utility requirement, especially as applied to biotechnology inventions, can be found in *PTO Utility Examination Guidelines*, 60 Fed. Reg. 36, 263 (1995).

207. See *supra* notes 26–30 and 78–79 and accompanying text.

208. At least one commentator has pointed out that chip design protection might be viewed as a "new type of utility model protection." Charles R. McManis, *Taking Trips on the Information Superhighway: International Intellectual Property Protection and Emerging Computer Technology*, 41 VILL. L. REV. 207, 259 (1996) (pointing out that a consequence of such an argument would be to subject chip design protection to the Paris Convention's national treatment requirements). For general background on the SCPA, see, e.g., RICHARD H. STERN, SEMICONDUCTOR CHIP PROTECTION (1986); DAVID LADD, DAVID B. LEIBOWITZ, & BRUCE G. JOSEPH, PROTECTION FOR SEMICONDUCTOR CHIP MASKS IN THE UNITED STATES: ANALYSIS OF THE SEMICONDUCTOR CHIP PROTECTION ACT OF 1984 (1986); THE SEMICONDUCTOR CHIP PROTECTION ACT OF 1984 (Gary Rinkerman ed., 1985); Robert W. Kastenmeier & Michael J. Remington, *The Semiconductor Chip Protection Act of 1984: Swamp or Firm Ground?*, 70 MINN. L. REV. 417 (1985). The legislative history has been collected in BERNARD REAMS, THE SEMICONDUCTOR CHIP AND THE LAW: A LEGISLATIVE HISTORY OF THE SEMICONDUCTOR CHIP PROTECTION ACT OF 1984 (1986).

Professor Stern views the SCPA as a possible "model for future systems of protection of new technology." STERN at 448. Stern's list of salient characteristics of such a model coincides roughly with the features of typical second tier patent regimes. See *id.* (identifying characteristics such as "[a] low standard of novelty or creativity, relative to patent law, but a higher standard than that of copyright law . . . [a] registration, rather than examination, system; a faster, less formal, cheaper system than patents [and] . . . Novelty tested in the courts, not by the agency doing the registration.").

209. For example, there is currently only a single appellate level decision on the SCPA. See *Brooktree Corp. v. Advanced Micro Devices, Inc.*, 977 F.2d 1555 (Fed. Cir. 1992). The apparently modest level of use might itself raise questions about the benefits of the SCPA.

those subject matters. For example, the European White Paper expressly excludes "inventions involving computer programs" from the scope of eligible subject matter,<sup>210</sup> no doubt in an effort to avoid the uncertainties of European regular patent law concerning the patent eligibility of computer software.<sup>211</sup> The White Paper takes a similar approach for biotechnology inventions.<sup>212</sup> The Australian proposal, in

210. See COM(97)691, *supra* note 20, at Art. 4(d). In this respect, the White Paper proposal is arguably a step backwards from some existing national regimes. For example, the 1994 Austrian Utility Model Law provides that the range of eligible subject matter includes "[p]rogram logic that is the basis of programs for data processing systems . . ." Austrian Utility Model Law § 1(2) (1994); Jurgen Betten, *Patentability of Software in Europe: The German Perspective (Part II)*, 13 COMPUTER LAW, 16, 20 (No. 9) (Sept. 1996). Betten asserts that this provision would countenance claims directed to the "solution embodied in the program logic." *Id.* at 20, note 32 (referring to the Austrian Patent Office's "Merkblatt für Gebrauchsmusteranmelder" (Pamphlet for Applicants of Utility Models), which provides example claims).

211. The White Paper's commentary simply states that computer programs are omitted because "such inventions are currently protected either by patent (inventions relating to software) or by copyright (computer programs as such)." COM(97)691, *supra* note 20, at Part Five (explanatory commentary on Article 4). However, sidestepping the problems that have arisen under European patent law concerning the protection of computer software might not prove so simple. The proposed exclusion for inventions "involving" computer programs may be subject to widely varying interpretations that may ultimately resemble the variable interpretations given to the computer program exclusion in the Convention on the Grant of European Patents, Oct. 5, 1973, Art. 52, 1160 U.N.T.S. 231. See, e.g., Robert J. Hart, *Patentability of Software at the European Patent Office*, 2 INT'L INTEL. PROP. LAW & POLICY CH. 49 (1996) (Hugh C. Hansen, ed.) (providing an overview of cases interpreting Article 52 as applied to software-related inventions); Peter Weissman, *Computer Software as Patentable Subject Matter: Contrasting United States, Japanese, and European Laws*, 23 AIPLA Q.J. 525 (1995) (providing a short discussion of Article 52).

It appears that efforts to adapt regular patent regimes to computer software-related inventions are proceeding through direct reform of regular patent laws. For example, there is evidence that the EC may soon prepare a consultative document on computer software patent eligibility. Paul Waterschoot, *An Overview of Recent Developments in Intellectual Property in the European Union*, in PROCEEDINGS OF THE SIXTH ANNUAL FORDHAM CONFERENCE ON INTERNATIONAL INTELLECTUAL PROPERTY LAW & POLICY, PROGRAM I 8 (1998). Similarly, in the United States, the regular patent law has currently stabilized around an extraordinarily broad notion of eligibility, as embodied in administrative guidelines and recent case law. It remains to be seen whether this equilibrium will prove durable. See, e.g., *State Street Bank & Trust Co. v. Signature Financial Group, Inc.*, 149 F.3d 1368 (Fed. Cir. 1998) (claim directed to a transformation of data in accordance with a mathematical algorithm recites patent eligible subject matter so long as it constitutes a "practical application" of the algorithm, meaning that it "produces 'a useful, concrete and tangible result'").

212. See COM(97)691, *supra* note 20, at Art. 4(b) (excluding "inventions relating to biological material"). Cf. European Patent Convention, Art. 53(b) (excepting from patent eligibility "plant or animal varieties or essentially biological processes for the production of plants or animals," but saving from the exception "microbiological processes or the products thereof") (text in PATTERSON, *supra* note 95, at 524). One commentator has argued forcefully that a second tier patent regime that extended protection to biotechnology products would be plagued with the same problems that have surrounded the protection of biotechnology in Europe via the regular patent system. See LLEWELYN, *supra* note 86, at 91. Whether these problems will subside with the recent approval of the Biotechnology Directive is currently a matter of speculation. See *Biotechnology: MEPs Give Formal Approval for Patenting Inventions*, EURO. RPT. (May 16, 1998) (reporting the European Parliament's approval, at second reading, of the Proposal for a Directive on the Legal Protection of Biotechnology Inventions). Cf. Kern, *supra* note 85, at 633 (relating that drafters of the Max Planck proposal considered novel approaches to subject matter eligibility that departed from the language of EPC Article 52, but ultimately concluded that the second tier regime should await direct reform of the EPC. Further ruling out the possibility that second tier regimes could serve

contrast, sets up no exclusions for nontraditional subject matter, relying merely on existing eligibility standards from regular patent law.<sup>213</sup> To the extent that the existing standards are problematic, those problems are transferred directly into the second tier system. Under neither the European nor the Australian approach can the creation of the second tier system be justified as a creative new approach to the protection of non-traditional subject matter.

The European second tier proposal demonstrates yet further timidity in excluding from eligibility "inventions relating to chemical or pharmaceutical substances or processes,"<sup>214</sup> which also might be designated loosely as non-traditional subject matters in light of the history of utility model systems.<sup>215</sup> Moreover, the White Paper's rationale for this exclusion seems wholly contrived, when viewed from a conceptual perspective.<sup>216</sup> The apparent influence of special interest politics is hardly masked here. The effect of such influences should give rise to serious concern in Europe that second tier protection will become a vessel for special protections, or serve as a precedent for additional new

as a stimulus for reform).

213. Government Response, *supra* note 112, at Recommendation 9 ("The same subject matter protectable under a standard patent should be protectable under the innovation patent."). See also *id.* at text accompanying Recommendation 9 (commenting that "limiting the type or extent of technology coverage might preclude the innovation patent system from covering new and emerging technologies").

214. COM(97)691, *supra* note 20, at Art. 4(c).

215. Numerous existing utility model systems exclude chemical and pharmaceutical inventions from eligibility. See, e.g., LEWELYN, *supra* note 86, at 88–89, n.200 (listing numerous national systems and noting subject matter exclusions relating to chemical and pharmaceutical inventions).

216. The commentary asserts that chemical and pharmaceutical inventions "call for lengthy preparation before being placed on the market and should therefore be given patent protection, which lasts longer than utility model protection." COM(97)691, *supra* note 20, at Part Five (explanatory commentary on Art. 4). But this argument only explains why regular patent protection should be available for such inventions, not why second tier patent protection should be withheld. More telling is the White Paper's subsequent comment that chemical and pharmaceutical inventions are "complex" and that "property rights involving no examination for novelty or inventive step are out of place" for such inventions. *Id.*; see also Kingston, *Patent Protection*, *supra* note 159, at 355 (asserting that the electrical and mechanical industries are characterized by incremental advancement, unlike the chemical industries). But not all chemical and pharmaceutical inventions are complex nor are they the results of dramatic breakthroughs. Moreover, not all mechanical and electrical inventions are simple. If complexity is the real criterion, then some classes of electronic and mechanical devices certainly would fall outside the scope of eligibility for second tier protection, a concept that none of the existing proposals contemplate.

The Green Paper advocated the inclusion of chemical inventions within the scope of eligibility for utility model protection. See COM(95)370, *supra* note 20, at 66. While acknowledging that utility model protection might not be attractive for some types of chemical inventions (i.e., presumably those for which a long preparation period is required and for which the inventors therefore aggressively seek out longer term protection), this does not justify excluding protection for such inventions. See *id.* (arguing that "[a] measure which allows protection of substances may serve no purpose in some cases; but that does not mean that protection should be refused in other cases where it would be necessary and reasonable.").

However, the Green Paper vacillated on the eligibility of process inventions. See *id.* at 66–67 (ultimately declining to take a position on the issue).

regimes of rights according to political whims.<sup>217</sup> It is also possible to read into the "sculpted" eligibility provision of the White Paper proposal a sense of ambivalence as to the efficacy of second tier rights in general, which should also serve as a warning sign.

#### 4. Access for Indigenous Enterprises in Developing Economies

Experience with classical utility model regimes reveals that local inventors comprise the vast majority of utility model applicants.<sup>218</sup> Based in large part on these statistics, a number of scholars have observed that utility model regimes might be of interest to developing countries seeking to spur local growth in technological enterprises.<sup>219</sup> A characteristic scholarly assertion is that "utility model protection assumes particular importance for the domestic economy at the beginning of a country's industrialization,"<sup>220</sup> and there is already evidence

217. Professor Reichman's scholarship argues forcefully against the proliferation of new "hybrid" intellectual property regimes. See Part III.C *infra* for a further discussion of this scholarship and its theoretical ramifications.

An important recent example from the United States is the "Vessel Hull Design Protection Act," which is to appear as a new Chapter 13 of the Copyright Act (17 U.S.C.). The Act offers protection to "original" designs of "useful articles," and proceeds to define "useful articles" for the purpose of the chapter as being limited to "a vessel hull, including a plug or mold, which in normal use has an intrinsic utilitarian function that is not merely to portray the appearance of the article or to convey information." For the statutory text, see *Conference Report on Digital Millennium Copyright Act* (H.R. 2281), H. Rept. 105-796 (1998), reprinted in 56 PAT. TRADEMARK & COPYRIGHT J. (BNA), 705 (Oct. 15, 1998) (defining "useful article" in § 1301(b)(2)). See also *Copyright Reform Legislation Is Cleared for White House*, 56 PAT. TRADEMARK & COPYRIGHT J. (BNA), 694 (Oct. 15, 1998) (reporting Senate and House approval of the conference report).

218. See Richards, *supra* note 6, at 47-3 (referring to 1992 WIPO statistics); COM(95)370, *supra* note 20, at 36-38 (collecting statistics). This fact may have important implications for any future debate over second tier patent protection in the United States. The European proposal is being portrayed as extending some benefit, particularly to *local* SMEs. It seems only logical that small enterprises in the United States would adopt this idea in order to argue that the United States government should extend similar benefits to U.S. small enterprises.

219. See, e.g., J.H. Reichman, *Electronic Information Tools*, *supra* note 50, at 811 n.72 (1992) (observing that in addition to being of interest to SMEs, utility models seem to be of great interest to developing countries); Hanns Ullrich, *GATT: Industrial Property Protection, Fair Trade and Development, in GATT or WIPO? NEW WAYS IN THE INTERNATIONAL PROTECTION OF INTELLECTUAL PROPERTY* 127, 153 (1989) (Friedrich-Karl Beier & Gerhard Schrickler, eds., 1989) ("[Utility models] are important for the development of indigenous technology by developing countries in terms of the lower prerequisites to the grant of protection, the lower cost and their shorter terms.") (citing, *inter alia*, Chen Ruifang, *The Utility Model System and its Benefits for China—Some Deliberations Based on German and Japanese Legislation*, 14 INT'L REV. INDUS. PROP. & COPYRIGHT L. 493 (1983)).

For a report of an apparently contrary view, see Dick van Engelen, *The Misappropriation Doctrine in the Netherlands*, 22 INT'L REV. INDUS. PROP. & COPYRIGHT L. 11, 21 (1991) (reporting the concern in Europe that an expanded utility model regime would inure largely to the benefit of foreign interests).

220. Hausser, *supra* note 44, at 319. Generally, these assertions are based upon historical experience with the German and Japanese systems. See also Reichman, *Legal Hybrids*, *supra* note 61, at 2455 (observing that utility model regimes were adopted in Germany, Italy, and Japan at early stages in those countries' industrial development and proved to be of interest in rewarding local innovation); *id.* at note 101 (collecting additional sources). Some scholars have also seized upon

that this advice is being taken seriously in some quarters.<sup>221</sup> One commentator has gone so far as to argue that the success of Japanese firms in developing "incremental changes in technology" might be attributable to Japan's utility model regime.<sup>222</sup> In some ways, all of these arguments are merely variations on the basic argument that second tier protection will benefit ill-funded SMEs.<sup>223</sup>

One should not be too quick to accept the premise that utility models have an established record of benefiting nascent indigenous technological enterprises. First, there is little, if any, causal evidence that would demonstrate that the existence of a utility model regime in Japan should be given even a share of the credit for Japan's rise to economic prominence.

Second, statistics showing predominantly local use of utility model regimes may prove only that multinational firms largely ignore classical utility model protection,<sup>224</sup> rather than demonstrating any unique benefit to small enterprise. Indeed, there could be multiple reasons for multinational companies to ignore utility model protection of the clas-

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the negative implication that utility model systems would *not* be of interest in developed economies. See Hausser, *id.* (observing a decline in filings for utility models in Germany and Japan).

221. Latin American nations, for example, have recently embraced utility model protection. See, e.g., Carlos M. Correa, *Harmonization of Intellectual Property Rights in Latin America: Is there Still Room for Differentiation?*, 29 N.Y.U. J. INT'L L. & POL. 109, 131 (1996-97) (suggesting that utility models "may be an important tool to encourage innovation in Latin American countries, many of which (Brazil, Costa Rica, Uruguay and, more recently, the Andean Group and Argentina) have already introduced this type of legislation"). For the relevant legislative texts, see Andean Group Decisions on Industrial Property (Decision 344) (1993), 34 I.L.M. 1635, 1641 (1995); Argentine Patent Law No. 24.481 (1995)). However, it must be noted that these regimes follow along the lines of the classic utility model regime in that they tend to impose a spatial form limitation on eligible subject matter. See Suthersanen, *supra* note 10, at 48-9 (noting that harmonized provisions applicable to the Andean group nations, as well as national provisions in various other South American countries, include a spatial form requirement).

222. See, e.g., Derzko, *supra* note 147, at 17 (arguing that Japan's utility model regime may be responsible for Japan's heavy involvement in developing "incremental changes in technology").

223. See, e.g., Kern, *supra* note 85, at 630 (arguing that second tier protection will benefit less developed European nations, such as East European states, because (1) inventors in such states may lack funds to pursue full scale patent protection; and (2) such states include many SMEs). See also Kingston, *Patent Protection*, *supra* note 159, at 360. Kingston expands to a global scale the argument that large entities dominate the market in incremental innovation because they can effectively "protect" their incremental developments through market power, and that this state of affairs requires a remedy because large entities innovate at a lower level than would be socially desirable. The global version of the argument holds that economically powerful countries likewise dominate the market for incremental innovation over economically less powerful countries, implying that a remedy in the form of incremental innovation protection among economically less powerful countries is also socially desirable. This, however, seems to assume a high level of innovation among less economically powerful countries, a point at which analogy to SMEs surely breaks down.

224. Some scholars have made similar claims. Ullrich, *supra* note 219, at 153 (asserting that second tier protection warranted no mention in the GATT discussions because such regimes "have no importance for internationally operating enterprises of industrialized countries"). The Green Paper presents statistics suggesting that large firms perceive utility model protection as being less important than other forms of protection, but unfortunately seems to leap to the conclusion that the protection actually benefits SMEs. COM(95)370, *supra* note 20, at 14-15.

sical variety. They may perceive the protection to be illusory, given the possibility that the scope of protection will extend only to the external appearance of the protected device by extension of the spatial form requirement. Relatedly, predominantly local use of utility model regimes might stem from the fact that utility model protection relies so heavily on adjudication through the court system, and multinationals may believe that many developing countries lack the infrastructure that would be required for reliable adjudication of utility model claims. Negative connotations associated with certain labels such as "petty patent" may also play a role.<sup>225</sup> Finally, the statistical evidence available in the current literature only makes the case for utility model regimes designed along classical lines, not for new second tier proposals.

Another argument for the introduction of second tier patent regimes in developing countries, and one that may best explain why such countries are adopting regimes currently, is tied to the perception that developing countries gain little or nothing by compliance with the patent provisions of the TRIPs agreement. According to this argument, a developing country might be well served by creating both a regular patent system and a second tier patent system, establishing such strict patentability standards for regular patent protection that most inventions would be relegated to the relatively limited protection offered under the second tier system. In such a case, a second tier patent protection regime is not being created for its own merits, but rather as a hedge against regular patent protection.

Whether this amounts to a sensible justification for creating a second tier regime depends on the accuracy of the underlying assumption that regular patent protection disadvantages developing countries. A full evaluation of this assumption would go well beyond the scope of this paper. Scholars are divided on this fundamental issue.<sup>226</sup> It does seem that, given the inherent flaws of second tier regimes, it would require a particularly strong showing of adverse consequences flowing from the regular patent system to justify erecting a second tier system as a hedge.

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225. Nakajima, *supra* note 98, at 16 (suggesting that the small percentage of foreign applications for Japanese utility models might be explained by a general lack of credibility of the system, or perhaps because the name itself connotes a lesser right).

226. See, e.g., A. Samuel Oddi, *TRIPs—Natural Rights and a "Polite Form of Economic Imperialism,"* 29 VAND. J. TRANSNAT'L L. 415 (1996) (arguing that the patent provisions in TRIPs stand to benefit primarily large economies at the expense of developing nations); J.H. Reichman, *Compliance with the TRIPs Agreement: Introduction to a Scholarly Debate*, 29 VAND. J. TRANSNAT'L L. 363, 371–72 (1996) (same); cf. Edmund W. Kitch, *The Patent Policy of Developing Countries*, 13 UCLA PAC. BASIN L. J. 166 (1994) (arguing that the introduction of Western-style patent regimes would benefit developing economies).

### B. Second Tier Harmonization as a Prototype for Regular Patent Harmonization

The harmonization agenda is relevant to the proposals for expanded second tier patent protection in a number of ways, some obvious and some more subtle. Most straightforwardly, the drive to harmonize second tier patent protection in Europe stands comfortably as one component of a multi-pronged effort to harmonize European intellectual property standards.<sup>227</sup> The White Paper indulges this rationale liberally, speaking in typically laudatory terms of the benefits of pan-European harmonization.<sup>228</sup> The elaboration of a pan-European second tier patent regime could, in theory, serve as a prototype for Europe-wide, and ultimately worldwide, substantive patent harmonization.<sup>229</sup>

Whatever may be the prospects in theory for the use of second tier proposals as harmonization prototypes, it appears that second tier proposals will be capable of advancing only marginally the agenda for substantive patent law harmonization. The current European proposal has abandoned the idea of creating a Community-level right, pursuing instead the option of harmonized national standards.<sup>230</sup> Beyond the

227. See, e.g., Thomas C. Vinje, *Harmonising Intellectual Property Laws in the European Union: Past, Present, and Future*, 17 EUR. INTELL. PROP. REV. 361, 371 (1995) (placing the second tier proposal into the context of European intellectual property harmonization generally); Beier, *supra* note 84 (same).

228. COM(97)691, *supra* note 20, at 6 ("Harmonisation will make it possible for equivalent national systems of utility model protection to coexist . . .") *But cf.* COM(95)370, *supra* note 20, at vii–viii (asserting that "harmonization of national systems would go some way towards improving the situation, but would not solve all the problems which arise," and proposing as alternatives a mutual recognition of rights system, or a Community-level right).

The White Paper asserts that harmonization is necessary because the differences in existing national standards for second tier patent protection obstruct the free movement of goods and distort competition. See COM(97)691, *supra* note 20, at 6–8 (concerning free movement of goods); *id.* at 8–9 (concerning distortions to competition); COM(95)370, *supra* note 20, at 33–35 (arguing that differences in national utility model systems can result in obstacles to the free movement of goods within the European Union); *id.* at 35–36 (arguing that the differences in national utility model systems can result in the distortion of competition in the European Union by, for example, allowing imitators in states having weak protection to establish a larger market share than originators and establishing a base for export of the imitation goods to states having stronger protection). See also Krasser, *supra* note 17, at 951 (observing that initial discussions on European regular patent harmonization in the early 1960s failed to consider the possibility that disparities in utility model protection could obstruct free trade across Europe, which may partially explain why utility models were not made a part of harmonization efforts).

Commentators seem unanimous in the opinion that existing standards in national second tier patent regimes are, in fact, materially different. See, e.g., Suthersanen, *supra* note 10, at 45 (surveying second tier regimes and finding limited consensus among national regimes in Europe).

229. For background on efforts to achieve worldwide substantive harmonization of regular patent systems, see generally HAROLD C. WEGNER, PATENT HARMONIZATION (1993); Symposium, *The Harmonization of International Patent Law*, 26 J. MARSHALL L. REV. 437 (1993).

230. See COM(97)691, *supra* note 20, at 9–10 (reporting that the creation of a Community-level right, or, alternatively, a "mutual recognition" system in which a single national second tier patent would automatically be recognized regionally, would not be pursued in the current legislative effort because these proposals "aroused only limited interest on the part of the sectors of business and industry concerned in the course of the consultation exercise set in train by the



question of whether meaningful harmonization of standards can be achieved through such an approach,<sup>231</sup> the abandonment of any effort to create a Community utility model guarantees that European policymakers will have no occasion to grapple with the difficult issues that have stalled substantive patent law harmonization in Europe, such as the issues of translations<sup>232</sup> and pan-European judicial arrangements.<sup>233</sup> The second tier harmonization proposal does not even contemplate a grace period provision,<sup>234</sup> which would have been instructive in dem-

Commission with the Green Paper"). Ravillard, *supra* note 165, at 5–6 (reporting that a "large majority" favored a directive that would harmonize national laws).

The Green Paper, by contrast, advocated the creation of a Community-level right. COM(95)370, *supra* note 20, at 54 (proposing that legislation creating a Community-level utility model scheme contemplate a two-tiered regime "consisting of an array of national utility model rights and a Community utility model right"). Similarly, the Max Planck draft proposed an "à la carte" system, meaning that the protection would be granted in a Community instrument, but applicants would be entitled to designate selected member states in which the protection would be effective. *See* Kern, *supra* note 85, at 631 (explaining distinctions between this model and the EPC approach to regular patents). The Max Planck proposal envisioned a Community Utility Model Office connected to the EPO. *See id.* at 631–32.

231. The extent to which a system of separate national regimes, even ones having harmonized standards, can ever really become "transparent" to users may be questioned. In the context of the second tier patent proposals specifically, the Economic and Social Committee has recently pointed out that the goal of providing truly equivalent national systems cannot realistically be achieved without mutual recognition of national protection by the various Member States. July 1998 Opinion, *supra* note 20, at O.J. (C235) 27, Point 3.3 (insisting that the goal of providing equivalent protection across Member States "cannot be met unless a system of mutual recognition of national protection by the Member States is consolidated at the same time . . . [I]t is essential that the plan to harmonize national legislation should, 'following effective harmonization, provide for a later stage of mutual recognition of national rights.'") (citing June 1996 Opinion, *supra* note 20, at O.J. (C174) 11, Point 6.11).

For an infamous example of the European patent system's resistance to transparency, one need look no further than the dramatic inconsistencies in national enforcement proceedings involving the Epilady hair remover patent. *See, e.g.,* Sanford T. Colb, *The Epilady Hair Remover Litigation*, in *Global Intellectual Property Series 1993: Successful Multi-Country Patent Litigation Strategies*, 366 PLI/PAT 107 (1993).

232. Likewise, the Max Planck proposal appears not to have come to grips with the translation controversy. Kern, *supra* note 85, at 640–41.

233. The recent Green Paper on the Community Patent identifies the translation problem and problems with judicial arrangements as two key problems with the existing regular patent system in Europe. *See* Green Paper on the Community Patent and the Patent System in Europe—Promoting Innovation through Patents, COM(97)314 final at 8 (translations problem); *id.* at 10 (judicial arrangements).

On the other hand, the Green Paper does mention the possibility of utility model harmonization as one of several contemplated measures to make the patent system more attractive to small enterprises. *Id.* at 20.

European second tier proposals also will not address some major issues standing in the way of worldwide substantive patent harmonization, most notably the first-to-invent vs. first-to-file controversy.

234. COM(97)691, *supra* note 20, at 34 (defining the state of the art to include "everything made available to the public by means of a written or oral description, by use, or in any other way, before the date of filing of the utility model application") (emphasis added).

In contrast, the Max Planck proposal would have offered a 12-month grace period. *See* Kern, *supra* note 85, at 634 (discussing Article 6 of the proposal); Max Planck Proposal, *supra* note 85, at 712 (providing the text of proposed Article 6). The proposed grace period would have been even more generous than current U.S. standards in regards to its treatment of third-party activity.

onstrating how a grace period could fit into European regular patent law.

The European effort to harmonize second tier patent protection appears destined to do little more than create an institutional history which could later be drawn upon to facilitate harmonization of regular patent standards both at the European level and worldwide. Indeed, it seems equally probable that the effort might actually divert resources away from the enterprise of harmonizing regular patent law. This is a serious problem considering that the harmonization of substantive patent law seems to require vast reserves of political willpower and intellectual capital. Hence, rather than stimulating regular patent harmonization and reform, second tier protection could well distract significantly from it.<sup>235</sup>

### III. THE UNCERTAIN THEORETICAL FOUNDATIONS OF SECOND TIER PATENT REGIMES

I have argued that history provides a far more limited record on the efficacy of second tier protection than some have supposed, and that policy considerations such as the access and harmonization rationales likewise offer but flimsy support for the extension of second tier patent regimes. In fact, I have suggested that when underlying policies are properly considered, second tier patent regimes might well do more harm than good by actually retarding the progress of technological advancement.<sup>236</sup> Having evaluated second tier protection from the

*Id.* (providing that information disclosed by a third party, but based upon information received from the applicant, would not be included in the state of the art). *Cf. Evans Cooling Sys., Inc. v. General Motors Corp.*, 125 F3d 1448, 1451-54 (Fed. Cir. 1997) (third-party disclosures constitute prior art even when they are based on information misappropriated from applicant) (interpreting 35 U.S.C. § 102(b) (1995)).

Debate over the grace period provision in the Max Planck proposal centered around whether the proposal should act as a "harbinger" for the amendment of European regular patent law to include a grace period. Kern, *supra* note 85, at 634. A similar issue arose in connection with the WIPO Patent Law Treaty. See Article 12, Disclosures Not Affecting Novelty and Inventive Step (Grace Period), Basic Proposal, PLT/DC/3, pp. 22-23, corresponding to the Draft Treaty, HL/CE/VIII/3 (English) (Feb. 15, 1990), 75, 77; see generally WEGNER, *supra* note 229, at 88-97 (discussing Article 12).

235. See, e.g., Edward Armitage, *EU Industrial Property Policy: Priority for Patents?*, 18 EUR. INTEL. PROP. REV. 555 (1996). Armitage argues that "[a]ll industrial property efforts" at the EU level should be concentrated on developing the Community patent regime; by focusing on the second tier patent proposal, EC policymakers have "got their priorities wrong." *Id.* at 558. To Armitage, the utility models initiative "has neither the intrinsic merits nor the urgency to justify its standing in the way of action on the Community patent. The utility model system stands only on the fringes of the patent system. The [utility models initiative] aims at perfect order on this fringe while the centre is in some disarray." *Id.* See also Christopher Tootal, *The European Patent System: Time for a Review?*, 17 EUR. INTEL. PROP. REV. 415 (1995) (portraying the utility models proposal as a distraction from higher priority reform needs respecting the regular patent system, such as the reform of opposition proceedings).

236. See *supra* note 186 and accompanying text (referring to the increased "clearance" costs imposed on competitors in a marketplace dominated by second tier patents).

standpoints of history and policy, I next consider the place of such protection in intellectual property theory, focusing especially on the implications of second tier protection in light of economic theories of the patent system.<sup>237</sup>

At least three topics warrant consideration. First, second tier patent protection regimes squarely raise the classic conundrum of allocating rights between basic inventors and improvers. A theory of anticommons property can be applied to reveal a potentially troublesome theoretical flaw in the approach that second tier protection takes toward this allocation of rights. Second, such regimes center on a soft obviousness/inventive step standard. Because the inventive step standard is generally considered central to the economically efficient operation of a patent system, second tier regimes may fundamentally challenge economic theories of the patent system. Third, second tier protection can be viewed, at least from a U.S. perspective, as a decision to replace an existing trade secrets regime for subpatentable innovation with a property rights regime, a matter of fruitful theoretical inquiry. The following three sections take up each of these questions to elaborate on the theoretical ramifications of introducing second tier patent protection.

#### *A. Second Tier Protection and Follow-On Improvers: A Theory of Anticommons Property*

In a provocative recent article, a scholar of property theory concludes that “[g]overnments must take care to avoid creating anticommons property accidentally when they define new property rights.”<sup>238</sup> Considered analysis suggests that second tier patent regimes pose a substantial threat of generating anticommons property, creating the potential for unfortunate economic consequences that would be played out in the form of a “tragedy of the anticommons.”

In the Western tradition, property is routinely conceptualized as an aggregation of rights in a tangible or intangible object. Three classes of property can be distinguished by reference to the aggregation of rights: private, commons, and anticommons. Private property, for example, can be understood to exist where an identifiable owner holds all or most of a specified core bundle of rights.<sup>239</sup> Commons and anti-

237. Only a few scholars have taken up the task. See, e.g., FRANCOIS PERRÉ, *L'AUTONOMIE DU RÉGIME DE PROTECTION DES DESSINS ET MODÈLES* 188–95, 231–33 (1974); Marie-Angèle Pérot-Morel, *L'Ambiguïté du concept de modèle d'utilité*, in *ÉTUDES EN L'HONNEUR DE R. FRANCESCHELLI* 425 (1983), cited in Reichman, *Free Riders*, *supra* note 13, at 71, n.237. Professor Reichman's work is also highly relevant. See *infra* Part III.C.

238. Michael A. Heller, *The Tragedy of the Anticommons: Property in the Transition from Marx and Markets*, 111 HARV. L. REV. 622, 688 (1998).

239. *Id.* at 663. As an example of a well-accepted conceptualization of the core bundle of rights that characterizes private property, Heller turns to Honoré's “standard incidents” of private

commons property, by contrast, exist where no individual, identifiable owner holds all or most of a core bundle. In particular, a commons is said to exist where no individual holds a right to exclude others from an object or resource, such that multiple individuals enjoy the privilege of using the resource.<sup>240</sup> An anticommons, as Heller defines it, exists where multiple individuals own rights to exclude others from an object or resource, such that no one has an effective privilege of using the resource.<sup>241</sup>

Professors Heller and Eisenberg have argued that patent rules and practices in the field of biomedical research may generate anticommons property.<sup>242</sup> Heller and Eisenberg point, for example, to current efforts to secure patent protection for “upstream” biomedical research, such as gene fragments. If various owners hold a multiplicity of patents covering numerous gene fragments, each of the owners would enjoy the right to exclude others as to an individual gene fragment. A possible result may be that no one has a commercially significant privilege of use, especially where the commercially significant use entails the use of multiple gene fragments for the “downstream” development of commercial products.<sup>243</sup>

This is a particularly important insight because patent law is, in fact, inherently prone to the generation of “concurrent fragment” anticommons property. The prototypical manifestation is the so-called

property, including such familiar candidates as “the right to exclusive possession,” “the power of transmissibility by gift, devise, or descent,” and so forth. *Id.* at 663, n.187, citing A.M. Honoré, *Ownership*, in OXFORD ESSAYS IN JURISPRUDENCE 107, 112–28 (A.G. Guest ed., 1961).

The qualification in the characterization of private property—that it may be characterized by ownership of *most* of the standard incidents—is especially important in considering how the patent right fits with Honoré’s taxonomy. Honoré includes, for example, the “right to personal use and enjoyment” as a component of the core bundle of rights of private property. The patent right does not confer a positive right of use on the patent owner, but only a right to exclude. *See, e.g.*, *Bloomer v. McQuewan*, 55 U.S. 539, 548 (1852) (“The franchise, which the patent grants, consists altogether in the right to exclude every one from making, using, or vending the thing patented, without the permission of the patentee. This is all that he obtains by the patent.”). Similarly, Honoré includes the “lack of any term on these rights,” whereas the patent right is subject to a limited term. *See, e.g.*, 35 U.S.C. §154(a)(2) (1995) (the term of a United States patent extends twenty years from the date of application, subject to extension in limited circumstances).

Heller also identifies two other critical, distinguishing features of private property: full decision-making authority vested in an identifiable owner, Heller, *supra* note 238, at 662 (“[p]rivate property requires that one owner have full decisionmaking authority over an object, subject to some common law and regulatory limits”), and restrictions against decomposing the core bundle of rights in ways that impair the alienability of the object to which the property rights attach. *Id.* at 664.

240. Heller, *supra* note 238, at 623–24.

241. *Id.* at 624.

242. Michael A. Heller & Rebecca S. Eisenberg, *Can Patents Deter Innovation? The Anticommons in Biomedical Research*, 280 SCIENCE 698 (May 1, 1998).

243. *See id.* at 699 (referring to this phenomenon as a “concurrent fragment” anticommons and asserting that “defining property rights around isolated gene fragments seems at the outset unlikely to track socially useful bundles of property rights in future commercial products”).

“blocking” patent, commonly arising when one patent holder owns rights to a pioneering invention, and another owner owns rights to a commercially necessary improvement. The improver may be precluded from practicing the improvement because doing so may well infringe claims in the pioneer patent. Likewise, the pioneer may be precluded by the improver’s patent from marketing the pioneering invention fitted with the commercially needed improvement.<sup>244</sup>

Under circumstances such as these, the conditions for the creation of anticommons property are met. Both the pioneer and the improver own rights to exclude, but the rights are overlapping, such that neither can alone aggregate the bundle of rights that would be necessary to proceed with the marketing of a commercial product. Effectively, neither of the owners has a commercially meaningful privilege of use; the bundle of commercially meaningful rights has been fragmented. The question then becomes whether the parties can bargain to achieve a cross-licensing arrangement.<sup>245</sup>

Second tier patent protection magnifies substantially the potential for the creation of concurrent fragment anticommons property.<sup>246</sup> Under second tier regimes, obvious improvements on basic technology, which would have remained in the public domain under the rules governing regular patent regimes,<sup>247</sup> will now potentially be subject to second tier patent protection. Multiple owners may now enjoy property rights in a multiplicity of obvious improvements, as the rights to the technology are carved up into tinier and tinier fragments.<sup>248</sup> The relative ease with which second tier patent protection can be obtained only compounds this problem because it opens the door to greater numbers of improvers who may fragment rights more quickly. In one sense, this is the mirror image of the scenario that Heller and Eisen-

244. See, e.g., Mark A. Lemley, *The Economics of Improvement in Intellectual Property Law*, 75 *TEX. L. REV.* 989, 1009–10 (1997) (discussing the phenomenon of blocking patents); Robert Merges, *Intellectual Property Rights and Bargaining Breakdown: The Case of Blocking Patents*, 62 *TENN. L. REV.* 75 (1994) (providing a detailed treatment).

245. See *infra* notes 253–259 and accompanying text.

246. I am speaking here of current second tier patent proposals, not necessarily of classic utility model laws in which the spatial form requirement may have kept the system in check. Although I am not convinced that even classic utility model regimes appropriately allocated rights between initial inventors and improvers, others have offered a more generous assessment. See Reichman, *Legal Hybrids supra* note 61, at 2459 (arguing that “[utility models] represent a form of industrial property protection that did not unduly discourage competitors from building on an innovator’s contributions and that usually permitted an improver to capture the economic value of his improvement.”).

247. That is, assuming that the improvement could not, as a practical matter, be protected by trade secret protection.

248. Chemical and pharmaceutical manufacturers in Europe apparently have foreseen this. See Kern, *supra* note 85, at 630 (speculating, apparently correctly, that large chemical and pharmaceutical manufacturers would be expected to lobby against model protection, particularly because they would fear multiple applications, characteristically from SMEs, on new uses for protected compounds).

berg describe for biotechnology patenting.<sup>249</sup> While they are concerned about the possibility that multiple owners of patent rights in upstream research results will thwart a downstream improver, I am concerned about multiple downstream improvers thwarting each other.<sup>250</sup>

If a second tier patent regime would, in theory, tend to generate anticommons property, the next question is whether this is really problematic from the standpoint of social utility. It is well-established that commons property in a resource may lead to overuse of that resource, referred to as the "tragedy of the commons."<sup>251</sup> Whether the creation of anticommons property in a resource leads to underuse of that resource, i.e., whether there exists a "tragedy of the anticommons," has only recently been elucidated.<sup>252</sup> However, the problem can be analyzed in familiar Coasian terms: if the legal regime has awarded rights inefficiently, market participants will bargain among themselves to reallocate those rights efficiently, and the consequences of the economically inefficient legal regime, in terms of social costs, will be erased.

Whether Coasian-style bargaining really occurs in the wake of the deployment of second tier patent rights is ultimately an empirical question worthy of close attention.<sup>253</sup> However, even in the absence of

249. Additionally, though unlikely, second tier protection could also give rise to anticommons property in the same fashion that Heller and Eisenberg describe for biomedical research. Researchers might attempt to secure second tier patent rights in relatively raw technological information, just as biomedical researchers are attempting to secure regular patent protection for basic research tools. In the case of the second tier rights, the potential for researchers to secure second tier protection on basic information would seem to be limited substantially by disclosure and utility requirements, which are carried over from regular patent law. On the other hand, if disclosure and utility requirements are eroded, this protection against the potential generation of anticommons property may well disappear.

250. Professor Heller offers a separate example of the emergence of an anticommons which seems very closely analogous to the anticommons that might appear as a result of a second tier patent regime. Japanese real property law apparently has allowed the extreme fragmentation of rights in real property, such that owners, renters, and so forth may well have multiple, overlapping rights in extremely small land parcels. Heller, *supra* note 238, at 684. The difficulty in aggregating commercially meaningful packages of rights has apparently hampered major construction efforts, such as the reconstruction of Kobe, Japan, following the 1994 earthquake. *Id.* at 684–85.

251. See Garrett Hardin, *The Tragedy of the Commons*, 162 *SCIENCE* 1243 (1968) (credited with introducing the "tragedy of the commons" label to characterize the concept). As Heller summarizes the concept:

A *tragedy of the commons* can occur when too many individuals have privileges of use in a scarce resource. The tragedy is that rational individuals, acting separately, may collectively overconsume scarce resources. Each individual finds that she benefits by consumption, even though she imposes larger costs on the community.

Heller, *supra* note 238, at 677.

252. This is Professor Heller's principal task. As Heller puts it:

A *tragedy of the anticommons* can occur when too many individuals have rights of exclusion in a scarce resource. The tragedy is that rational individuals, acting separately, may collectively waste the resource by underconsuming it compared with a social optimum.

*Id.* at 677.

253. Professor Merges has considered whether such bargaining occurs in the context of the

empirical evidence, it seems safe to predict that many second tier patent holders will encounter steep transaction costs that may thwart efforts to bargain to an efficient re-aggregation of patent rights. There are many potential sources of transaction costs that would hinder the market amelioration of a second tier patent anticommons. First, given the complexities of claim construction, it will undoubtedly require expertise even to identify the various second tier patent rights that must be assembled in order to clear the way for the marketing of a given commercial product. Second, given the nature of the second tier grant, it seems probable that, in any given area of technical endeavor, there may well be a plethora of stakeholders with whom to deal.<sup>254</sup> Indeed, large enterprises might be expected to saturate selected areas by the prodigious acquisition of essentially defensive second tier patent rights.<sup>255</sup> Third, the inherently insecure nature of the second tier patent right can be expected to lead to excessive transaction costs in many cases. Even in the regular patent system, it is well appreciated that uncertainty over both the value of the invention and the scope of claims may represent an insurmountable obstacle to efficient bargaining.<sup>256</sup> Without any substantive pre-grant examination, crucial matters

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pioneer/improver situation, in reference to regular patent regimes. See Merges, *supra* note 244, at 82–84 (analyzing the obstacles to Coasian bargaining and presenting the judicially derived “reverse doctrine of equivalents” as an example of a judicial response to bargaining breakdown between a pioneer and improver).

254. In this regard, the anticommons that may be created by the prototypical single pioneer/single improver scenario may be less durable. The pioneer and the improver may be more likely to be able to bargain with low transaction costs. *But cf. id.* at 89–90 (suggesting that uncertainty and valuation problems may preclude successful bargaining between the pioneer and improver).

The probable presence of numerous bargainers in the second tier anticommons may support Professor Reichman’s view that second tier patent subject matter (*i.e.*, obvious improvements on patented technology) should be subjected to a liability regime, rather than a property regime. See *infra* notes 313–324 and accompanying text. For the classic argument that the presence of multiple parties is one of the factors pointing away from a property rule and towards a liability rule, see Guido Calabresi & A. Douglas Melamed, *Property Rules, Liability Rules, and Inalienability: One View of the Cathedral*, 85 HARV. L. REV. 1089, 1107–10 (1972).

255. This is another manifestation of the patent flooding problem. See *supra* note 191 and accompanying text (discussing the potential for parties to flood the system with second tier patents). For a discussion of the perceived patent flooding problems encountered in the Japanese patent system prior to recent amendments, see, e.g., Jeffrey Wolfson, Note, *Patent Flooding in the Japanese Patent Office: Methods for Reducing Patent Flooding and Obtaining Effective Patent Protection*, 27 GEO. WASH. J. INT’L L. & ECON. 531 (1993–94).

256. See, e.g., Lemley, *supra* note 244, at 1055. See also Heller and Eisenberg, *supra* note 242, at 700 (arguing that the long pendency time of regular patent applications in the biotechnology patenting area is a source of uncertainty spawning transaction costs because, when applications are pending, the scope of the ultimate claims remains unclear, complicating any contemporaneous licensing negotiations). Second tier patent rights would enjoy a short pendency time, but this is illusory since no definitive notion of the scope of the claims in a second tier patent can be developed until litigation.

such as the scope<sup>257</sup> and validity<sup>258</sup> of a second tier patent will remain highly unsettled until litigation.<sup>259</sup> This poses a seemingly intractable dilemma for second tier patent rights which are premised on the notion of trading away certainty for quick, low-cost issuance. The cost of uncertainty, especially at the enforcement stage, seems chronically underappreciated in second tier patent proposals and represents one of the most serious flaws in those proposals.

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257. For example, in a second tier regime there would be no examination for compliance with the enablement requirement, which is emerging as a critical tool in adjudicating claim scope for regular patents in emerging areas of technology. *See, e.g.*, John W. Barton, *Patent Scope in Biotechnology*, 26 INT'L REV. INDUS. PROP. & COPYRIGHT. L. 605 (1995); Ellen P. Winner, *Enablement in the Rapidly Developing Arts—Biotechnology*, 70 J. PAT. TM. OFF. SOC'Y 608 (1988). Additionally, the prosecution history developed in the course of pendency of a second tier patent would be minimal, thus eliminating the use of the prosecution history to furnish information as to the meaning of claim terms. *See, e.g.*, Vitronics Corp. v. Conceptor, Inc., 90 F.3d 1576, 1583 (Fed. Cir. 1996) (identifying the prosecution history as a source of intrinsic evidence on claim interpretation).

Some second tier proposals approach claim construction in a manner that seems to invoke the linkage between the thresholds for protection and the scope of protection. *See, e.g.*, Dinwoodie, *Federalized Functionalism*, *supra* note 21, at 655 (recognizing the existence of a linkage).<sup>258</sup> These second tier proposals have provided that courts should construe the claims in a second tier patent "narrowly." Apparently, CIPA proposals would have included such a provision. *Lees, Design Problems*, *supra* note 54, at 226–28 (reporting that the proposed CIPA system would have avoided EPC Article 69, and the protocol on its interpretation, by providing that claims would be "strictly and literally" construed); LLEWELYN, *supra* note 86, at 68; Kern, *supra* note 85, at 636 (reporting on a provision discussed in connection with the Max Planck proposal, and later dropped, providing that where inventiveness was established other than by inventive step, a strict and purely literal approach to claim construction would be employed, in contrast to purposive construction). These sentiments do not appear to have found their way into the most current proposals in Europe and Australia. *See* COM(97)691, *supra* note 20, at Art. 13 ("The claims shall define the matter for which protection is sought."); Government Response, *supra* note 112, at Recommendation 3 (providing that in the Australian innovation patent system, "[t]he existing rules for determining the scope and interpretation of standard patent claims should apply for the innovation patent").

A deliberate effort to give "narrow" construction, whatever that really might mean, creates the potential for larger numbers of increasingly fragmented second tier rights. Moreover, if second tier patent rights inhere predominantly in improvement inventions, then imposing an overarching narrowing doctrine runs exactly opposite the result that some modern economic theories of patent protection would urge. *See* Robert P. Merges & Richard R. Nelson, *On the Complex Economics of Patent Scope*, 90 COLUM. L. REV. 839 (1990) (questioning the broad scope of protection that may be accorded to some pioneering inventions and urging greater incentives for follow-on improvers). It is not clear whether Merges' views on giving incentives to improvers would extend to the point of actually supporting broad second tier patent rights, or whether Merges would consider this to be going too far in the direction of rivalrous races to invent.

258. The utterly opaque nature of the soft obviousness standard is likely to impose substantial costs on litigants. *See infra* Part III.B.

259. The validity of regular United States patents, by contrast, is at least presumptively settled at the time the regular patent issues. *See* 35 U.S.C. 282 *supra* note 60 (explaining the presumption of validity). As for the scope of protection, early indication of the scope of claims has been an ongoing concern even for regular patents. *Markman v. Westview Instruments, Inc.*, 116 S.Ct. 1384 (1996); John B. Pegram, *Markman and its Implications*, 78 J. PAT. TM. OFF. SOC'Y 560 (1996) (commenting on pre-trial "Markman hearings" on claim interpretation and considering whether they will provide an early indication of claim meaning). These problems are likely to be even acute for second tier patents. *See supra* notes 171–187 and accompanying text (discussing the costs of enforcing second tier rights).



Whether a second tier patent anticommons would persist, in general or in specific areas of technical endeavor, would depend upon the extent of these transaction costs and on other factors such as the extent to which second tier patent rights would need to be bundled together to allow the marketing of particular commercial products. But while final conclusions must await empirical evidence, the great potential for the creation of a second tier patent anticommons should occasion serious concern. There is some evidence that an anticommons, once created, proves remarkably difficult to overcome.<sup>260</sup> Moreover, none of this bodes very well for small enterprises and independent inventors, the supposed beneficiaries of the second tier patent regime. Such parties may well lack the resources and/or sophistication to participate in the complex bargaining that would be necessary to re-aggregate patent rights in an economically sensible fashion.<sup>261</sup>

Alternative bargaining models exist and might prove more successful.<sup>262</sup> As Professor Merges has explained in some detail, patent rights-holders may collaborate by way of patent pooling arrangements.<sup>263</sup> Collective licensing arrangements have also developed in the copyright arena for similar purposes. Second tier proposals, however, are characteristically oblivious to this downstream consequence of second tier patent protection. At the very least, second tier patent proposals should take cognizance of the probable need to facilitate the evolution of pooling or collective rights arrangements in second tier patent rights to attempt to avoid a persistent second tier anticommons.<sup>264</sup>

*B. Second Tier Protection and the Prospect Theory:  
The Economic Consequences of "Soft" Obviousness*

The treatment of the inventiveness standard in modern second tier proposals raises serious theoretical questions. Numerous second tier regimes have long featured a standard of inventiveness that might be

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260. Heller, *supra* note 238, at 685–87 (offering the example of the fractionation of Native American lands as an illustration of the stubborn persistence of anticommons property once established).

261. Similarly, Heller and Eisenberg raise concerns that holders of regular patent rights covering upstream biomedical research may be public institutions that are ill-equipped to cope with high transaction costs. Heller & Eisenberg, *supra* note 242, at 700.

262. Indeed, Professor Merges argues that “the presence of high transaction costs does not halt exchanges but encourages both producers and users to invest in institutions that lower the cost of certain types of exchanges.” Robert P. Merges, *Of Property Rules, Coase, and Intellectual Property*, 94 COLUM. L. REV. 2655, 2662 (1994).

263. Robert P. Merges, *Contracting into Liability Rules: Intellectual Property Rights and Collective Rights Organizations*, 84 CAL. L. REV. 1293 (1996).

264. Indeed, if second tier regimes take hold and mature, it will be instructive to observe whether pooling arrangements emerge. Second tier regimes might well provide an interesting empirical platform against which Professor Merges’ theories might be tested. It would be particularly interesting to note whether SMEs have any realistic opportunities to become participants in pools.

referred to as “soft” obviousness.<sup>265</sup> Verbal formulations for the soft obviousness standard, founded on hairsplitting distinctions, have always been suspect.<sup>266</sup> In theory, the negative consequences of soft obviousness for doctrinal stability in a classic utility model regime can be mitigated. By employing the spatial form limitation, courts could use the subject matter eligibility provision as the major discriminator between inventions deemed worthy of utility model protection and those deemed unworthy.<sup>267</sup>

Current proposals for second tier protection would upset the dynamic between the eligibility and obviousness provisions. Without the spatial form requirement in the eligibility provision, the obviousness provision will assume chief responsibility for maintaining an appropriate balance between the public domain material and protectable invention, just as it does in the regular patent system.<sup>268</sup> The prospect of this new important role for soft obviousness raises two critical issues. First, from a doctrinal perspective, consideration needs to be given to whether soft obviousness is sufficiently durable to withstand the stress of performing the main discriminating function for second tier regimes. Second, from an economic standpoint, critical evaluation is warranted as to whether the coupling of a liberal eligibility provision with a soft obviousness standard appropriately implements the economic premises underlying patent protection. My principal task in this section is to address the second point, although I also briefly consider the first.

In the interests of fostering doctrinal stability, current second tier proposals might at least be expected to elaborate on the soft obviousness standard in a way that gives it greater substance. This need is particularly acute given that in most major patent systems the dividing line between novelty and nonobviousness has never been perfectly

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265. See *supra* note 43 and accompanying text (discussing German utility model law).

266. For example, under Japanese law, utility model law is directed to the protection of a “device,” which is defined as the “creation of technical ideas by which a law of nature is utilized.” Utility Model Law, Art. 2 (1994) (*cited in* Nakajima, *supra* note 98, at 17). Regular patent law in Japan, by contrast, protects an “invention,” which is “the *highly advanced* creation of technical ideas by which a law of nature is utilized.” Patent Law, Art. 2 (1994) (emphasis added) (*cited in* Nakajima, *supra* note 98, at 17). Correspondingly, the inventiveness standard for utility models requires that the subject device could not *very easily* have been made from the prior art, while the inventiveness standard for regular patents requires that the claimed invention could not have *easily* been made from the prior art. See Utility Model Law, Art. 3(2) (1994); Patent Law, Art. 29 (1994) (emphasis added) (*cited in* Nakajima, *supra* note 98, at 17). See also Richards, *supra* note 6, at 47-9, note 16 (describing similarly futile standards in the utility model regimes of China, Korea, Spain, and a handful of other countries).

267. The presence of the spatial form limitation mitigated, but did not eliminate, the problems associated with the soft obviousness standard, because soft obviousness still applied to that range of subject matter which satisfied the spatial form limitation.

268. Doctrines governing scope of protection play a similar role. See *supra* note 257 and accompanying text (referring to the importance of proposals for affording second tier patents a narrow claim scope).

sharp,<sup>269</sup> so that the task of establishing intermediate distinctions between novelty and soft obviousness, and between soft obviousness and obviousness, is likely to be extraordinarily difficult. Yet, despite the apparently widely held understanding that the inventiveness standard will stand as a principle issue in future discussions on expanded second tier protection,<sup>270</sup> second tier proponents have yet to articulate a workable soft obviousness standard. In Europe, the Green Paper ducked the issue entirely,<sup>271</sup> and the White Paper, while expressing a standard, offers an entirely unfathomable explanation for it.<sup>272</sup> The Committee's review of the soft obviousness standard is particularly disappointing, and only seems to reinforce the point that no one really has come to grips with the standard. The Committee merely points out that the standard should be directed towards identifying "major practical applications, chiefly in the fields of mechanical engineering, the electrical industry, precision engineering, optics, and car manufacturing."<sup>273</sup> But

269. See, e.g., Crinson, *supra* note 19, at 44–45 (referring to the difficulty of distinguishing between novelty and nonobviousness in Canadian regular patent law).

270. See, e.g., Ravillard, *supra* note 165, at 7 (acknowledging that the inventiveness standard is likely to be the subject of considerable discussion in the EC Council and the European Parliament).

271. The Green Paper merely concluded that

Community-level measures regarding utility models ought to allow a smaller inventive step than is required for patents. The demarcation line between patent and utility model would have to be formulated in a way which meets the needs of users, competitors and the law-courts in equal measure.

COM(95)370, *supra* note 20, at 62.

Proposals generated by the CIPA and the Max Planck Institute do not offer any substantial additional insight into soft obviousness. CIPA reportedly considered three possible inventiveness standards ("not clearly lacking in inventive step," "scintilla of invention," and "going beyond the average craftsmanship in the field concerned"), in addition to the proposed Max Planck standard. LLEWELYN, *supra* note 86, at 66 (reporting that CIPA expressed a preference for the first standard, assuming that it would be interpreted in the same way as it had in British opposition practice under the Patents Act of 1949); Lees, *Design Problems*, *supra* note 54, at 226–28 (discussing the "not clearly lacking in inventive step standard"). See also *supra* notes 51–57 and accompanying text (discussing the argument that British practice under the Patents Act of 1949 created a *de facto* second tier system).

The Max Planck proposal borrowed the inventive step standard from EPC Article 56, see Max Planck Proposal, *supra* note 85, at 712 (Article 7), but engrafted an alternative, lower standard under which a claimed invention would pass muster if it offered "an advantage of practical significance." *Id.* at Art. 7(2). The accompanying explanation of the standard is not particularly illuminating. See Kern, *supra* note 85, at 635–36.

272. The White Paper standard is founded on either "ease of use" or "practical advantage" as evidence of the required level of inventiveness. See *supra* note 107 (quoting the standard). Unfortunately, the White Paper's commentary on the inventiveness provision is a classic example of the bureaucratic idiom:

Examples [of subject matter that would meet the standard] are an invention making it possible to solve a technical problem and an invention relating to the effectiveness or ease of use of a product in that it increases the product's usefulness by making it more effective and easier to use.

COM(97)691, *supra* note 20, at Part Five (explanatory commentary on Article 6). It seems unlikely that practitioners and jurists grappling with the meaning of this unique inventive step standard will find much illumination in such comments.

273. July 1998 Opinion, *supra* note 20, at C235/28–29, point 4.4.

the Committee passes on the opportunity to actually articulate a more meaningful overarching standard: "The Commission should work out a way of formulating this requirement which could provide the best guarantee of legal certainty both for the applicant and for the third parties concerned."<sup>274</sup> The Australian proposal to use a modified "substantial novelty" test seems likely to fare no better.<sup>275</sup>

The soft obviousness standard may also affect the interpretation of the regular obviousness standard in regular patent law. If, as I suspect, it turns out to be practically impossible to arrive at an actual soft obviousness standard, courts will presumably tend towards one of two extremes: either they will soften the soft obviousness standard to the point at which it is utterly indistinguishable from novelty, or they will go in the opposite direction, applying a standard that is essentially the regular obviousness standard currently employed by courts. The latter scenario involves a potentially troublesome ripple effect, for if courts understand intuitively that they are to apply a more rigorous obviousness standard in regular patent law than in second tier patent law, courts might ratchet up the regular obviousness standard to achieve the required separation between regular and second tier patent standards.<sup>276</sup> Ironically, the introduction of second tier patent protection may have the unintended effect of raising the obviousness standard for regular patent protection and imposing additional acquisition costs on applicants. This would presumably fall hardest on marginally financed SMEs.

Whether the soft obviousness standard makes sense economically is also a highly contentious matter. To begin with, modern proposals for expanded second tier patent protection respond, at least in part, to the so-called "prospect" theory of the patent system introduced by Professor Edmund Kitch in a widely debated 1977 article.<sup>277</sup> While classical

274. *Id.*

275. One commentator offers a stinging appraisal of the proposed inventiveness standard. Glenn McGowan, *Petty Patents to be replaced with "Innovation Patent System,"* 29 INTELLECTUAL PROPERTY FORUM, 35–36 (May 1997). McGowan finds the proposed standard "imponderable," *Id.* at 36 (arguing that to the extent that the "scintilla of invention" standard holds for regular patents, the standard for innovation patents would have to be something less than a "scintilla"), and suggests that the departure from conventional standards for inventiveness might render the innovation patent scheme unconstitutional. *Id.* (arguing that the Australian Constitution, in empowering the Federal Parliament to enact legislation regarding "patents of inventions," necessarily incorporates the inventiveness standard).

276. See LEITH, *supra* note 159, at 120 (detailing this argument). This raises a broader concern that the interaction between regular and second tier patent systems has not carefully been considered and is not well understood. Professor Llewelyn seems to tap into similar concerns in questioning the appropriateness of second tier protection. LLEWELYN, *supra* note 86, at 47–48 (arguing that in countries where a lower threshold of inventive step has already been set, it is possible that creating a further underlying system of second tier protection will result in stifling of innovative activity because there will be almost no innovation that will be wholly unprotectable).

277. Edmund W. Kitch, *The Nature and Function of the Patent System*, 20 J. L. & ECON. 265 (1977).

economic theories of the patent system emphasized offering incentives to induce the creation of inventions, thereby focusing on the inventor's activities prior to conceiving the invention, the prospect theory offers a radically different perspective.<sup>278</sup> The prospect theory views the patent grant as security for the future expenditure of development funds necessary to "innovate", i.e., to transform an invention into a commercial product.<sup>279</sup> Thus, the prospect theory focuses on the inventor's activities between conception of the invention and its ultimate commercialization.<sup>280</sup> Kitch's reference to a "prospect" in this context connotes "a particular opportunity to develop a known technological possibility."<sup>281</sup> The reference is intended to bring to mind the legal regime governing mining prospects,<sup>282</sup> reflecting the property rights lineage of the prospect theory.<sup>283</sup>

The grant of patent protection to technological "prospects" is asserted to encourage innovative activity by giving the patentee the ability to coordinate downstream innovation. For example, with the security of patent protection for a technological prospect, the patentee can proceed to "delegate aspects of the development to different firms and coordinate the exchange of information among the firms," enhancing the efficiency of the innovation process by reducing duplication of efforts.<sup>284</sup> Similarly, having acquired intellectual property

278. Indeed, Professor Oddi identifies the prospect theory as marking the beginning of a post-classical period of economic theories of the patent system in which scholars have moved away from traditional notions of reward and incentives to invent. A. Samuel Oddi, *Un-unified Economic Theories of Patents—The Not-Quite-Holy Grail*, 71 NOTRE DAME L. REV. 267, 281 (1996).

279. See, e.g., Rebecca S. Eisenberg, *Patents and the Progress of Science: Exclusive Rights and Experimental Use*, 56 U. CHI. L. REV. 1017, 1037 (1989) (defining "innovation" as "putting existing inventions to practice use"); Kitch, *supra* note 277, at 276–80 (outlining the advantages of a patent system designed to facilitate innovation).

280. See Eisenberg, *supra* note 279, at 1037–38 (observing that the prospect theory differs from incentive to invent and incentive to disclose theories "with respect to the time frame in which the incentive matters"; while incentive to invent and incentive to disclose theories "are concerned with incentives that operate before a patent issues," the prospect theory "gives existing patents an ongoing role in preserving the incentives of patent holders to invest in development during the patent term.").

281. Kitch, *supra* note 277, at 266.

282. See, e.g., Mark F. Grady & Jay I. Alexander, *Patent Law and Rent Dissipation*, 78 VA. L. REV. 305, 313–16 (1992) (summarizing the connections between the prospect theory and the legal regime governing mining claims).

283. See Lemley, *supra* note 244, at 1044–45 (emphasizing the property rights orientation of Kitch's theory).

284. Kevin Rhodes, Comment, *The Federal Circuit's Patent Nonobviousness Standards: Theoretical Perspectives on Recent Doctrinal Changes*, 85 NW. U. L. REV. 1051, 1086–87 (1991). As Professor Eisenberg puts it:

In the absence of a patent, different investigators might try independently to develop the same invention in secrecy, each working without the benefit of the knowledge gained through the efforts of the others. Exclusive rights in technological prospects thus promote efficiency in research after the patent issues by putting the patent holder in a position to monitor and control such research.

Eisenberg, *supra* note 279, at 1042.

rights in a prospect, the patentee assertedly can more readily “marshal complementary resources” or engage in other transactions concerning the invention without expending resources on the preservation of confidentiality.<sup>285</sup>

The prospect theory calls for a soft obviousness standard, and therein lies the quite powerful connection between the prospect theory and current second tier patent proposals. Professor Kitch argued that “substantial novelty is an economically rational test of patentability,”<sup>286</sup> a standard which seemed to call for elimination of the obviousness criterion, or at least for a substantial reduction in its influence.<sup>287</sup> One commentator has adeptly summarized the economic arguments underlying a substantial novelty standard for patentability under the prospect theory:

[T]he prospect theory posits that patent rights over inventions increase innovative output. Therefore, no need exists for high patentability standards to offset the monopoly costs of patents. Accordingly, the standard of patentability should be much lower under the prospect theory than under the reward theory. In addition, from a positive perspective, the prospect theory predicts that patentability rules will serve two primary functions: (1) providing security for the innovative process; and (2) reducing the amount of wasteful competition for patent rights. The patent statutes will accomplish both of these goals by allowing the liberal patenting of inventions in the very early stages of development.<sup>288</sup>

In part, the approach to patentability articulated by the above commentary resembles the approach to soft obviousness with which second tier patent proposals struggle.<sup>289</sup> Advocates of second tier patent protection certainly would assert that the soft obviousness standard in second tier patent protection, like the standard which derives from the prospect theory, emphasizes the need for rights to attach to subpatentable advances achieved in the course of bringing an invention to the stage of commercial viability.

On the other hand, second tier patent proposals seem to assume that the subject matter of second tier applications will inevitably constitute modest variations on existing technologies. This diverges from the

285. Rhodes, *supra* note 284, at 1086–88. By contrast, without any rights in the prospect, the inventor might be obliged to spend resources attempting to negotiate a confidentiality agreement in order to preserve the opportunity to file for regular patent protection.

286. Kitch, *supra* note 277, at 284.

287. See, e.g., Oddi, *supra* note 278, at 282 (stating that Kitch “discards the nonobviousness standard for invention as being irrelevant to the prospect theory”).

288. Rhodes, *supra* note 284, at 1090–91.

289. The Australian Innovation Patent System, for example, would employ a “modified novelty” test. See *supra* notes 121–122 and accompanying text.

prospect theory model in that this subject matter is presumably created at late stages in the development process. This subject matter, in other words, is fundamentally not a technological prospect arising early in the course of development efforts. Actually, the prospect theory could offer an important insight for policymakers: it may challenge the apparent assumption that second tier patent subject matter will always be about downstream improvements. One could envision a second tier application directed to raw technological information not yet developed to the point of patentable invention—a true implementation of the prospect theory. Whether or not such subject matter will be protectable under second tier regimes will depend largely upon the evolution of the enablement requirement and other description requirements in the context of second tier regimes. Certainly, the filing of such applications would place pressure on such requirements, and it would be of considerable interest to see whether courts gradually developed enablement standards (or other adequacy of description standards) that were more forgiving than those prevalent in regular patent law.<sup>290</sup>

The prospect theory also predicts a softer obviousness standard tied very closely to commercial potential.<sup>291</sup> In doctrinal terms common to U.S. patent law, this would translate to giving a major role to so-called “secondary considerations” of nonobviousness,<sup>292</sup> particularly the “commercial success” consideration.<sup>293</sup> Similarly, other secondary con-

290. Considerations of dual protection and priority would also be implicated if applicants began routinely seeking second tier protection for raw technological information, given that sophisticated applicants might well file a second tier application to preserve priority and to acquire quick protection pending the issuance of a regular patent. See *supra* notes 188–189 and accompanying text (discussing the potential for this use of second tier patent applications).

291. See, e.g., Rhodes, *supra* note 284, at 1090 (arguing that the prospect theory calls for patentability standards allowing patent rights to issue “for almost any new use of existing technology that appears to have commercial possibilities”).

292. Under U.S. law, a court assesses obviousness by considering a three-part set of primary inquiries (the scope of the prior art; the differences between the claimed invention and the prior art; and the level of ordinary skill in the art), along with so-called “secondary” considerations. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). Judge Rader has recently summarized the law on secondary considerations:

The secondary considerations are also essential components of the obviousness determination. This objective evidence of nonobviousness includes copying, long felt but unsolved need, failure of others, commercial success, unexpected results created by the claimed invention, unexpected properties of the claimed invention, licenses showing industry respect for the invention, and skepticism of skilled artisans before the invention . . . .

*In re Rouffer*, 149 F.3d 1350, 1355 (Fed. Cir., 1998) (citations omitted).

293. Rhodes, *supra* note 284, at 1094; Kitch, *supra* note 277, at 283. Professor Merges, however, has provided powerful arguments against the economic premises underlying this argument. See Rhodes, *supra* note 284, at 1095, note 263; Robert P. Merges, *Commercial Success and Patent Standards: Economic Perspectives on Innovation*, 76 CAL. L. REV. 803, 841 (1988). For additional views on secondary considerations, particularly on the commercial success standard, see, e.g., Rochelle C. Dreyfuss, *The Federal Circuit: A Case Study in Specialized Courts*, 64 N.Y.U. L. REV. 1, 9–10 (1989) (arguing that the secondary considerations have been appropriately limited by a vigorous requirement for a “nexus” to the claimed invention); Reed W.L. Marcy, Note, *Patent*

siderations focusing on the “economic” rather than the “technical” aspects of an invention would seem to have a high profile under the prospect theory.<sup>294</sup>

Here, too, similarities exist between the prospect theory’s approach to patentability and that evinced by new second tier patent proposals. The European White Paper, for example, calls for a soft obviousness standard that awards second tier rights to inventions that provide the solution to a technical problem or enhance the practical effectiveness of existing technology.<sup>295</sup> This approach to obviousness seems loosely reminiscent of the wide-ranging approach that secondary considerations facilitate. For example, an evaluation of how a claimed invention satisfies a long-felt need may be roughly similar to an evaluation under the second tier regime of a claimed invention’s capacity to solve a “technical problem.”

Surprisingly, then, second tier patent regimes designed in accordance with existing proposals could prove interesting as objects of study for intellectual property theorists who are interested in testing the viability of Kitch’s prospect theory on empirical grounds. This would be of particular interest considering that one of the major criticisms lodged against the prospect theory is its failure to correlate with empirical evidence.<sup>296</sup> Second tier protection could assist in resolving the debate over whether the prospect theory enjoys any empirical support.

Still, from a theoretical standpoint, there are many reasons to expect that second tier patent regimes will only confirm the shortcomings of the prospect theory. Concerns about rent dissipating races to acquire second tier protection seem especially serious. Rent dissipation refers to the idea that “the benefit to society of an invention is dissipated when there are redundant development efforts . . . .” Rent dissipation

*Law’s Nonobviousness Requirement: The Effect of Inconsistent Standards Regarding Commercial Success on the Individual Inventor*, 19 HASTINGS COMM./ENT. L.J. 199, 200 (1996) (predicting that heavy reliance on commercial success will cut against patent protection for small market-share inventors).

294. Rhodes, *supra* note 284, at 1096 (listing secondary considerations such as evidence of copying and evidence of multiple licenses granted under the patent).

295. See *supra* note 272 and accompanying text.

296. For example, Kitch’s views depend at least in part on an empirical assumption that many inventors acquire patent protection far in advance of the appearance of any commercial product. See Kitch, *supra* note 277. Professor Eisenberg has argued that empirical evidence seems to undermine this assumption. Eisenberg, *supra* note 279, at 1042 (citing sources of empirical evidence at note 108); Oddi, *supra* note 278, at 282 (noting that the prospect theory has been criticized on empirical grounds and citing sources).

Questions have also been raised about the extent to which the prospect theory is premised on the assumption of competition with the patented invention. See Oddi, *supra* note 278, at 282 (asserting that the prospect theory requires the assumption of a substantially horizontal demand curve, indicating competition with the claimed invention); *but cf.* Lemley, *supra* note 244, at 1047, n.270 (pointing out that Kitch seems merely to be advertent to the possibility of competition with the patented invention, not establishing a prerequisite).



is understood today as a fundamental concern in the economically efficient operation of patent systems in developed economies.<sup>297</sup>

It has been argued that the soft obviousness standard featured in the prospect theory actually works against rent-dissipating races for patent rights.<sup>298</sup> By employing a flexible and wide-ranging assessment focusing on considerations such as commercial potential and other loosely formulated versions of the current secondary considerations, the prospect theory supposedly provides for an allocation of rights early in the process of commercialization. In theory, this severely limits any wasteful races by effectively crowning a clear "winner" early in the process. Similar claims are likely to be made in the context of second tier patent protection, which also hinges on a soft obviousness standard.

However, second tier patent protection actually strives to establish the very conditions that would encourage wasteful rent dissipation and thwart economically efficient operation of the patent system. Soft obviousness sets a low threshold for protectability. Fee structures and minimal pre-grant examination requirements are all designed to increase the number of players who could acquire patent rights. Collectively, these requirements increase the potential for rent dissipation as multiple players rush to be the first to lock up key improvements on existing patented technology.<sup>299</sup> The prospect theory has been faulted for these very qualities.<sup>300</sup>

297. Grady & Alexander, *supra* note 282, at 316. Grady and Alexander point out that rent dissipation might occur both at the conception stage (as researchers rush to be the first to secure broad patent protection in an emerging new area of technology) and at the follow-on stage (as developers race to create commercially attractive improvements to pioneering technological breakthroughs). *Id.* at 317 (arguing that a proper analysis must balance both considerations, i.e., the "savings in reduced follow-on investment against the losses from accelerating pioneering investment"). See also Merges & Nelson, *supra* note 257, at 871 (referring to the costs of rivalrous inventive efforts).

298. Rhodes, *supra* note 284, at 1090.

299. The problem is further complicated in the United States, where patents are awarded to the "first to invent" as defined in 35 U.S.C. 102(g). Priority disputes among multiple inventors, each of whom claims to be the first to invent, would presumably have to be resolved through litigation, given that the establishment of a lengthy interference procedure would seem to be inconsistent with the central notion of avoiding pre-grant substantive examination in second tier systems.

300. See, e.g., Oddi, *supra* note 278, at 282 (arguing that "because of the high incentive to be first and the minimum standard for protectability, there will be high rent dissipation at the conception stage for inventions, which may far overbalance the limitation of rent dissipation at the innovation stage") (citing Grady & Alexander, *supra* note 282, at 317).

Rhodes sees two major sources of potential rent dissipation under the prospect theory:

(1) the award of rights early in the commercialization process, before much money has been expended on developing the invention, means that many players are in position to go after such rights, increasing the potential for rent dissipation; and (2) the broad claim scope that the prospect theory seems to encourage heightens the incentive to race for patent rights.

Rhodes, *supra* note 284, at 1088–89. Rhodes gives the impression that he believes that the prospect theory is able to compensate for this tendency to encourage rent dissipation.

There is more to the efficient operation of a patent system than merely guarding against rent dissipation. A complementary objective is the optimization of innovation over time. That is, a patent system "should not only avoid wasteful competitive R & D, but it should also avoid encroaching on future R & D that is socially desirable."<sup>301</sup> A soft obviousness standard characteristic of proposed second tier patent regimes could encroach on future innovation efforts in at least two important ways that echo arguments that I outlined earlier.<sup>302</sup> First, its opaqueness could generate a chilling effect. Marketplace participants will find it extremely difficult and costly to determine which second tier patents are validly issued, and they may find it expedient to avoid innovative behavior that in fact would be perfectly acceptable and indeed desirable. Second, the low threshold of protectability established by soft obviousness could facilitate the unwise fragmentation of rights. Professor Dam makes a similar argument in connection with the prospect theory and the operation of the regular patent system:

Whatever the merits of the dispute between Kitch and his critics, it is important that the line between the patented and the unpatented be clearly demarcated in the patent itself, rather than being left to future litigation, so that a green light is given to R & D beyond that line . . . . Since most scientists and engineers do their R & D work without patent lawyers at their sides, their normal work should not be hampered by unexpected patents. In this respect the nonobviousness requirement plays an important prophylactic role. It sharply limits littering of the innovation landscape with land mines consisting of patents on what those skilled in the trade would assume to be in the public domain.<sup>303</sup>

Second tier protection deliberately disables the obviousness requirement from fully carrying out this role.

*C. Second Tier Protection and the Legal Hybrids Problem: Property Regimes vs. Liability Regimes for the Protection of Subpatentable Innovation*

Second tier patent regimes unquestionably devote themselves to the protection of subpatentable innovation, innovation that falls into the gap between patent and copyright protection. But it is not the case that in the absence of second tier regimes, all subpatentable innovation goes unprotected. In the United States, state trade secret law can be used to protect that range of subpatentable innovation that meets minimum requirements of confidentiality and value. The TRIPs

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301. Kenneth W. Dam, *The Economic Underpinnings of Patent Law*, 23 J. LEGAL STUD. 247, 266 (1994).

302. See *supra* Part II.A.

303. Dam, *supra* note 301, at 267.

agreement imposes similar standards worldwide.<sup>304</sup> Fundamentally, then, the United States has chosen to protect a limited range of subpatentable innovations through a mixed property/liability regime<sup>305</sup> built around a well-established concept of trade secret misappropriation,<sup>306</sup> leaving the remainder of subpatentable innovations to the public domain.

Second tier patent protection represents a dramatic change of direction. In its essence, second tier patent protection embodies a choice to confer property rights on subpatentable innovation in addition to leaving it to a mixed property/liability regime.<sup>307</sup> Second tier protection thus implicates the debate between the relative merits of property and trade secrets regimes, which in turn is part of a larger debate in legal scholarship comparing property and liability regimes generally.<sup>308</sup>

To be sure, the choice to create a property regime rather than leaving subpatentable innovation to a liability regime might seem, on its face, to have something to recommend it. In Europe, for example, the Green Paper authors have argued that offering expanded second tier protection will result in a greater level of disclosures to the public of incremental innovations.<sup>309</sup> However, the incentive-to-disclose rationale, a common one employed in connection with the regular patent system,<sup>310</sup> does not fit well for either classic utility model regimes or for modern second tier patent proposals. As to the former, the spatial form requirement fulfills no meaningful function, and in fact causes

304. TRIPs Agreement, *supra* note 6, at Art. 39.

305. Scholars divide over the extent to which trade secrets sound in tort or in property. *See, e.g.,* Reichman, *Legal Hybrids*, *supra* note 61, at 2507 n.419 (citing sources reflecting the disparity of views).

306. For an overview of the concept of trade secret misappropriation, see generally Uniform Trade Secrets Act § 1(2); Restatement (Third) of Unfair Competition §§ 39-45 (1995).

307. Others have defined utility model law as an alternative to trade secret law: "Although the utility model laws have always required a qualitatively significant level of innovation to qualify for protection, their primary function was arguably to provide artificial lead time to compensate for the lack of natural lead time in trade secret law." Reichman, *Legal Hybrids*, *supra* note 61, at 2458-59.

308. Indeed, although I explore the matter only briefly in this Article, the project of elaborating more fully on the implications of second tier protection in the larger context of the property/liability divide is a worthy one. For a probable starting point for such a project, see Jan Ayres & Eric Talley, *Solomonic Bargaining: Dividing a Legal Entitlement to Facilitate Coasian Trade*, 104 YALE L.J. 1027, 1092-94 (1995) (arguing for a liability regime that, as applied to intellectual property, would feature a compulsory licensing scheme); Louis Kaplow & Steven Shavell, *Do Liability Rules Facilitate Bargaining? A Reply to Ayres and Talley*, 105 YALE L.J. 221 (1995); Jan Ayres & Eric Talley, *Distinguishing Between Consensual and Nonconsensual Advantages of Liability Rules*, 105 YALE L.J. 235 (1995).

309. *See* COM(95)370, *supra* note 20, at 61-62 (urging that "[i]n systems which protect inventions with only a small inventive step, inventions are publicized which would otherwise have been kept from the public for reasons of confidentiality").

310. *See, e.g.,* Eisenberg, *supra* note 279, at 1028-30 (discussing the incentive to disclose theory in connection with regular patent systems).

the regime to be underprotective by potentially relegating to secrecy a whole class of innovations.<sup>311</sup> As for the latter, second tier proposals are overprotective because they would confer protection on subpatentable innovation even where secrecy is not a commercially feasible option for the inventor.<sup>312</sup>

The decision to choose property rights over a liability regime for subpatentable innovation implicates concerns over the proliferation of "legal hybrids." Legal hybrids, in Professor Reichman's lexicon, are "deviant regimes" which "crop up in the widening penumbra between the patent and copyright subsystems where, in theory, only the rules of free competition should prevail."<sup>313</sup> Utility model laws and design protection laws, quite plainly, constitute prototypical examples of hybrid intellectual property regimes.<sup>314</sup> They were, as Professor Reichman puts it, "devised to cure a type of market failure resulting from the chronic inability of either the patent or copyright regimes to ensure that innovative industrial designers could appropriate the fruits of their investments."<sup>315</sup> Legal hybrid regimes have tended to proliferate, which may be problematic by itself,<sup>316</sup> and may also signal more profound systemic weaknesses.<sup>317</sup> Moreover, the risk of systemic instability may be particularly high today due to the difficulties that traditional patent and copyright regimes have experienced in dealing with new computer technology.<sup>318</sup>

Second tier patent regimes seem inevitably to confront an intractable dilemma. On the one hand, if they are designed along the lines of

311. Professor Reichman may have had similar considerations in mind when he argued that:

Viewed only in its historical context, a decision to allow innovative tool designs to escape free competition, but not a host of other innovative creations that seem no less deserving of protection, appears hard to justify. Viewed within a broader context of other deviant regimes, utility model laws fail to recognize the growing need to protect tangible embodiments of know-how that do not qualify for patent or trade secret protection.

Reichman, *Legal Hybrids*, *supra* note 61, at 2459.

312. The same objection can be made to the use of the incentive-to-disclose rationale to justify the regular patent system.

313. Reichman, *Industrial Designs*, *supra* note 21, at 48-1, n.1.

314. *Id.* at 48-1 (asserting that utility model regimes, along with design protection regimes, are the earliest examples of legal hybrids in intellectual property). See also *supra* Part I.A (discussing the origin of utility model laws); LLEWELYN, *supra* note 86, at 43 (noting Reichman's work on legal hybrids in connection with an analysis of second tier protection).

315. Reichman, *Industrial Designs*, *supra* note 21, at 48-2.

316. In addition to the obvious costs of a growing patchwork of essentially ad hoc intellectual property rights, each successive acceptance of a legal hybrid regime may create an environment in which the succeeding regime seems more palatable, eventually reaching a point which will undermine the integrity of the collective intellectual property system. See Reichman, *Legal Hybrids*, *supra* note 61, at 2503 (arguing that legal hybrids are likely to introduce "a cumulative protectionist bias into domestic economies driven by constant innovation . . .").

317. It may, for example, signal that the protection of incremental innovation through a system of second tier property rights is inherently flawed and results in instability.

318. See, e.g., Reichman, *Legal Hybrids*, *supra* note 61, at 2500 (arguing that the bipolar patent/copyright regime has "irretrievably broken down" due to the inability of those regimes to deal with cutting edge technologies). This is one of Professor Reichman's primary claims.

classical utility model regimes, protection will only extend to external appearance because of the severe limitations imposed by the spatial form requirement,<sup>319</sup> and the regimes will not adequately supplement patent protection across any substantial range of subpatentable innovation.<sup>320</sup> On the other hand, if they are designed along the lines of modern second tier patent proposals, protection may be too broad, given the dilution of the obviousness requirement.<sup>321</sup>

This is precisely the sort of inherent instability that might lead one to conclude that property regimes do not present an attractive solution for the protection of subpatentable innovation. Yet trade secret law, as currently formulated, is likewise an imperfect solution given that for some types of subpatentable innovation, the maintenance of confidentiality is not a commercially feasible goal. To Professor Reichman, the solution is to devise a new liability regime,<sup>322</sup> a law of “portable trade secrets”<sup>323</sup> that Professor Reichman has described in some detail.<sup>324</sup>

The analysis of modern second tier patent proposals offered in this Paper does not point inexorably towards Professor Reichman’s solution; that is not my object. The numerous flaws identified in the second tier proposals reinforce Professor Reichman’s conclusion that current property rights regimes are not the answer for protecting subpatentable innovation. Many of the considerations already enumerated, particularly the new insights gleaned through applications of the theory of anticommons property, suggest the desirability of further scholarly exploration of the prospect of protecting subpatentable innovation with a regime that departs from a pure property rights model.

319. Courts might alter the nature of this protection by gradually relaxing the spatial form requirement, as has apparently occurred in some jurisdictions. *See supra* notes 74–77, and accompanying text (discussing relaxation of the spatial form requirement in Japanese and German law). Experience suggests that second tier protection, brought to this stage of development, is unsatisfactory: the protection is misleading on its face, the public lacks fair notice as to what is protected, and the case law surrounding a relaxed spatial form requirement is likely to be cumbersome.

320. Professor Reichman identifies the same problem, from the perspective of design protection. Reichman, *supra* note 21, *Industrial Designs*, at 48-11 to 48-12 (observing that if second tier patent rights only protect the owner from competitors who appropriate the design’s external appearance, the rights are of little value in protecting those designs for which the real value lies in the design’s functionality, not in its appearance).

321. *See id.*

322. Reichman, *Industrial Designs*, *supra* note 21, at 48-11 (proposing that “because the problems of appropriability typically arise from the failure of classical trade secret law to provide natural lead time under present-day conditions, the proper response is to devise a substitute set of default liability rules that can cure market failure without creating new barriers to entry whose social costs are likely to exceed those of underprotection itself.”).

323. Professor Reichman’s proposal for a “portable trade secrets” regime contemplates a short initial “blocking period” for unregistered subject matter (which is intended to provide artificial lead time) followed by an additional period of liability protection for registered subject matter. *Id.* at 48-16.

324. Reichman, *Legal Hybrids*, *supra* note 61, at 2519–57.

## IV. CONCLUSION

Prior to the formulation of recent second tier patent proposals in Europe and Australia, Professor Reichman observed, with considerable understatement, that second tier patent regimes "are hard to justify in terms of classical intellectual property theory . . .,"<sup>325</sup> and that the economic justification for awarding protection to subpatentable innovation had never been articulated satisfactorily.<sup>326</sup> I have attempted to show that this is still the case today, notwithstanding the substantial emerging momentum for second tier harmonization in Europe. In fact, I have attempted to show that on the basis of a more fully elaborated theoretical analysis, drawing particularly on recent scholarship concerning "anticommons" property, that second tier proposals look worse theoretically than they ever did before. Likewise, I have sought to demonstrate that current second tier proposals do not find a solid foundation in history or policy.<sup>327</sup>

Nonetheless, the European Commission, despite the existence of certain reservations,<sup>328</sup> seems bent on proceeding with the proposed harmonization directive on utility models.<sup>329</sup> As of this writing, however, there is no apparent move to introduce second tier patent protection in the United States. The analysis in this Article strongly suggests that modern second tier patent proposals, including both the European and Australian initiatives, are ill-considered, and that Europe, Australia, and the United States would all be better served by directing energies towards the reform of regular patent law, and towards the exploration of alternative avenues for protecting incremental innovation.

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325. See Reichman, *Electronic Information Tools*, *supra* note 50, at 811 (proceeding to warn that "efforts to mitigate the strict substantive and formal prerequisites of patent law are symptomatic of a larger malaise . . .").

326. See Reichman, *Industrial Design*, *supra* note 21, at 48-11.

327. There remains the task of conducting empirical research on existing second tier regimes that follow along the general lines of current European and Australian proposals. The German system, after the 1990 amendments, would be a worthy candidate for thoughtful empirical study that focuses on the downstream consequences of expanded second tier protection, particularly studying how second tier patent rights fare in enforcement proceedings. Fortunately, scholars are developing models that allow for sophisticated empirical analysis of patent rights in litigation. See John R. Allison & Mark A. Lemley, *Empirical Evidence on the Validity of Litigated Patents* (manuscript on file with author).

328. See, e.g., July 1998 Opinion, *supra* note 20, at C 235/26-27, points 2.6-2.7 (reiterating prior views that studies advocating second tier patent protection are not necessarily "as totally reliable as their authors appear to claim . . ." and emphasizing that the more pressing need may be to reform regular patent protection in Europe).

329. See *id.* at 5, points 5.1, 5.4 (asserting that "[u]tility models are an appropriate means of protecting industrial property . . ." and that "the Commission's initiative appears capable of achieving the aims it proposes . . .").

