

# *Accommodating User Innovation in the International Intellectual Property Regime: A Global Administrative Law Approach*

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## I INTRODUCTION

Since the negotiation of the Agreement on Trade-Related Aspects of Intellectual Property (TRIPS) in 1994,<sup>1</sup> the innovative landscape has undergone dramatic changes due to technological advances in fields such as biotechnology, nanotechnology, and digital communications and computation.<sup>2</sup> Notably, the negotiation of TRIPS coincided almost exactly with the rise in importance of the Internet following the invention of the World Wide Web and the introduction of the Mosaic web browser in the early 1990s.<sup>3</sup> These technological changes have spawned major social changes, which are increasingly felt not only in developed countries, but also throughout the world. The resulting changes in the innovative landscape, especially as instantiated in the complex technologies of the information technology industry, have given rise to controversy about the proper contours of intellectual property protection and to upheaval in the political economy of intellectual property lawmaking. This upheaval is reflected, for example, in the split between the pharmaceutical sector and

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<sup>1</sup> Agreement on Trade-Related Aspects of Intellectual Property Rights (1994) [hereinafter: TRIPS] WTO Agreement, Annex 1C, Legal Instruments-Results of the Uruguay Round, 33 I.L.M. 1197. See also D J Gervais *The Trips Agreement: Drafting History and Analysis* 2ed (2003).

<sup>2</sup> For a recent discussion of some of these changes and their implications for intellectual property, see European Patent Office (EPO) *Scenarios for the Future – How Might IP Regimes Evolve by 2025? What Global Legitimacy Might Such Regimes Have?* (2007), available at <http://www.epo.org/topics/patent-system/scenarios-for-the-future.html> [hereinafter: EPO Scenarios]. The discussion of the evidence for the 'Trees of Knowledge' (at 66) and 'Blue Skies' (at 84) scenarios are particularly relevant.

<sup>3</sup> See, for example, *Mosaic: The Original Browser*, available at <http://www.nsf.gov/about/history/nsf0050/internet/mosaic.htm>.

many information technology companies in their positions on patent reform in the United States.<sup>4</sup>

Even more than by that debate, however, the social role of intellectual property protection should be brought into question by an explosion of innovative activity that does not fit into the sales-oriented, proprietary model which underlies intellectual property doctrine. Traditional justifications for intellectual property implicitly assume an innovator who seeks either to sell embodiments of an invention or to license rights to the invention. Intellectual property rights are seen as mechanisms to provide incentives for innovation by awarding a period of exclusivity during which a creator can recoup investments through market exclusivity.<sup>5</sup> The assumption that inventors are motivated primarily by the possibility of selling their inventions is weakened, for example, by the increasing importance of user innovation.<sup>6</sup> User innovation is not new, but it had been pushed into the background by the ascendance of industrial research and development along with a paradigm of mass production. Technological advances have revitalised this and other alternative paradigms for innovation. This article contends that shifting modes of innovation must be taken into account in assessing the global intellectual property regime.

There has been considerable scholarly and public debate about the impact of the TRIPS minimum standards approach to patent law on consumer access to patented technology – particularly in the public-health-related fields of pharmaceuticals and agriculture.<sup>7</sup> Indeed, that debate has led to modifications of the TRIPS agreement as reflected in the

<sup>4</sup> See, for a discussion of these differences, C Holman 'Biotechnology's prescription for patent reform' (2006) 5 *John Marshall Review of Intellectual Property Law* 317. See also, EPO *Scenarios* (n 2) 94–96.

<sup>5</sup> For discussions of the traditional incentive theories of patenting, see for example, R D Blair & T F Cotter 'Rethinking patent damages' (2001) 10 *Texas Intellectual Property Law Journal* 1 at 78–80; R S Eisenberg 'Patents and the progress of science: exclusive rights and experimental use' (1989) 56 *University of Chicago Law Review* 1017, 1024–28; K J Strandburg 'What does the public get?: Experimental use and the patent bargain' (2004) 81 *Wisconsin Law Review* 81 at 90–93.

<sup>6</sup> For an overview of user innovation, see E von Hippel *Democratizing Innovation* (2005). For a more detailed discussion of the relationship between user innovation and patent incentive theories, see K J Strandburg 'Users as innovators: implications for patent doctrine' (2008) 79 *University of Colorado Law Review* 467 at 483–90.

<sup>7</sup> See, for example, M Chon 'Intellectual property and the development divide' (2006) 27 *Cardozo Law Review* 2821; D J Gervais 'Intellectual property, trade & development: the state of play' (2005) 74 *Fordham Law Review* 505; P K Yu 'TRIPS and its discontents' (2006) 10 *Marquette Intellectual Property Law Review* 369; R C Dreyfuss 'TRIPS–Round II: should users strike back?' (2004) 71 *University of Chicago Law Review* 21. See also articles in G B Dinwoodie (ed) *Symposium: Intellectual Property, Trade and Development: Accommodating and Reconciling Different National Levels of Protection* (2007) 82 *Chicago-Kent Law Review* and articles in *Symposium: Traditional Knowledge, Intellectual Property, and Indigenous Culture* (2003) 11 *Cardozo Journal of International & Comparative Law*; T W Pogge 'Human rights and global health: a research program' (2005) 36 *Metaphilosophy* 182.

Doha Declarations<sup>8</sup> and to the adoption of a Development Agenda by the World Intellectual Property Organisation (WIPO).<sup>9</sup> There has also been increasing recognition of the extent to which TRIPS minimum standards of IP protection can upset the balance between initial and follow-on innovation by focusing too much on the need to incentivise initial innovations at the cost of providing access to those innovations for follow-on innovators. The few WTO dispute resolution panel decisions to have interpreted TRIPS exceptions have been criticised for exacerbating these problems by taking an overly cramped approach to the flexibilities provided by TRIPS.<sup>10</sup> There has been considerably less discussion, however, about the interplay between the global intellectual property regime and user innovation or any other non-sales-motivated innovation paradigm.<sup>11</sup>

In this article, I argue that, over and above previously appreciated problems with regard to access and the traditional IP balance, the trouble with TRIPS – and with the global intellectual property law regime more generally – is that it is ill-designed to cope with changes in the innovative process itself and with the likely heterogeneity of desirable innovation approaches in different global contexts. While it is possible that current TRIPS flexibilities can be interpreted in ways that will better balance the needs of initial innovators against those of users and follow-on innovators, the very structure of the agreement is based on an assumption of mass market, seller-based innovation which may make it difficult to accommodate newer innovation paradigms.

The experience of the past 15 years should serve as a cautionary tale regarding the wisdom of enshrining substantive rules based on any

<sup>8</sup> See World Trade Organisation, Ministerial Declaration of 14 November 2001, WT/MIN(01)/DEC/1, 41 I.L.M. 746 (2002) [hereinafter: Doha Ministerial Declaration]; World Trade Organisation, Ministerial Declaration of 20 November 2001, WT/MIN(01)/DEC/2 [hereinafter: Doha Declaration on TRIPS and Public Health].

<sup>9</sup> See documents available at <http://www.wipo.int/ip-development/en/agenda/>.

<sup>10</sup> See, for example, G B Dinwoodie & R C Dreyfuss 'Diversifying without discriminating: complying with the mandates of the TRIPS Agreement' (2007) 13 *Michigan. Telecommunications & Technology Law Review* 445; G B Dinwoodie & R C Dreyfuss 'Patenting science: protecting the domain of accessible knowledge' in L Guibault & P B Hugenholtz (eds) *The Future of the Public Domain in Intellectual Property* (2006); G B Dinwoodie & R C Dreyfuss 'TRIPS and the dynamics of intellectual property lawmaking' (2005) 36 *Case Western Reserve Journal of International Law* 95; G B Dinwoodie & R C Dreyfuss 'WTO dispute resolution and the preservation of the public domain of science under international law' in K E Maskus & J H Reichman (eds) *International Public Goods and Transfer of Technology under a Globalized Intellectual Property Regime* (2006).

<sup>11</sup> There are some exceptions. For example, the EPO scenarios recognise the increasing importance of open and collaborative innovation and suggest that such developments might lead to the abolishment of patents or to the development of technology-specific types of patents. They do not, however, focus on the way in which such changes might be achieved in the context of international intellectual property agreements. See EPO *Scenarios* (n 2) at 11, 26, 28–29, 72–75, 80, 88–90, 99.

particular paradigm of innovation in an inflexible international instrument. Thus, along with seeking solutions to the particular problems confronting today's innovators in dealing with the outmoded TRIPS framework, it would be wise to consider how to implement an ongoing process at the global level for navigating the tension between the truly global reach of innovation and the heterogeneous and changing social practice of innovation. The complexity of the innovation environment, in combination with the need for both flexibility and consistency, calls for an administrative-type approach that builds in an expectation of the need for ongoing updating of global innovation policy rather than an attempt to lock in substantive standards tailored to today's innovation environment.<sup>12</sup>

To that end, I propose a re-envisioning of the World Intellectual Property Organisation (WIPO) as a more broadly conceived innovation policy organisation, which would serve as a centre of discourse not only about how intellectual property law should be adapted to changing modes of innovation but also about how to confront new dilemmas raised by evolving innovative practices, which may involve issues beyond intellectual property law.<sup>13</sup> WIPO has historically focused on promoting the intellectual property regime<sup>14</sup> and has been criticised for pursuing stron-

<sup>12</sup> For general discussions of the varieties of issues raised by 'agency-like' actors at the global level, see S Cassese 'Administrative law without the state? The challenge of global regulation' (2005) 37 *New York University Journal of International Law & Politics* 663; S Cassese 'Global standards for national administrative procedure' (2005) 68 *Law & Contemporary Problems* 109; D C Esty 'Good governance at the supranational scale: globalizing administrative law' (2006) 115 *Yale L.J.* 1490; B Kingsbury, N Krisch & R Stewart 'The emergence of global administrative law' (2005) 68 *Law & Contemporary Problems* 15; R B Stewart 'U.S. administrative law: a model for global administrative law?' (2005) 68 *Law & Contemporary Problems* 63; A-M Slaughter & D Zaring 'Networking goes international: an update' (2006) 2 *Annual Review of Law & Social Science* 211; S Burris, P Drahos & C Shearing 'Nodal governance as an approach to regulation' (2005) 30 *Australian Journal of Legal Philosophy* 30.

<sup>13</sup> See G B Dinwoodie 'Private ordering and the creation of international copyright norms: the role of public structuring' (2004) 160 *Journal of Institutional & Theoretical Economics* 161, available at <http://ssrn.com/abstract=604161>; G Dinwoodie 'The international intellectual property system: treaties, norms, national courts, and private ordering' in D Gervais (ed) *Intellectual Property, Trade and Development: Strategies to Optimize Economic Development in a TRIPS Plus Era* (2007); N Elkin-Koren 'What contracts cannot do: the limits of private ordering in facilitating a creative commons' (2005) 74 *Fordham Law Review* 375; S Dusollier 'The role of contracts and private initiatives: sharing access to intellectual property through private ordering' (2007) 82 *Chicago-Kent Law Review* 1391 (2007); A K Rai 'Open source' and private ordering: a commentary on Dusollier' (2007) 82 *Chicago-Kent Law Review* 1439; S M McJohn 'The paradoxes of free software' (2000) 9 *George Mason Law Review* 25; R J Mann 'Commercializing open source software: Do property rights still matter?' (2006) 20 *Harvard Journal of Law & Technology* 1.

<sup>14</sup> Article 3, Convention Establishing the World Intellectual Property Organisation (14 July 1967) 21 U.S.T. 1749, 848 U.N.T.S. 3, available at [http://www.wipo.int/treaties/en/convention/trtdocs\\_wo029.html](http://www.wipo.int/treaties/en/convention/trtdocs_wo029.html) ('The objectives of the Organization are: (i) to promote the protection of intellectual property throughout the world through cooperation among States and, where appropriate, in collaboration with any other international organization, (ii) to ensure adminis-

ger IP rights myopically.<sup>15</sup> Indeed, WIPO has manifested some hostility to open source software,<sup>16</sup> which is to a great extent driven by user innovation<sup>17</sup>). Nonetheless, I argue – building on a related argument by Rochelle Dreyfuss<sup>18</sup> – that WIPO is the most promising home for a broader focus on innovation policy in light of its expertise, its experience with the Development Agenda, and its relationship with the WTO under TRIPS. Indeed, there are encouraging signs in this regard in recent WIPO recognition of the impingement of broader innovation policy issues on the patent system.<sup>19</sup> The thrust of this article is to encourage a more central place for considerations of the full panoply of innovation paradigms in the development of patent policy – and intellectual property more generally. As an example, I focus here on the user innovation paradigm in the patent context.

A broader mandate for WIPO could be implemented in several ways, with varying levels of administrative discretion vested in the re-imagined organisation.<sup>20</sup> As a first cut, WIPO might undertake to develop an Innovation Policy Agenda incorporating the concerns of innovative communities of various types, including commercial firms, user innova-

trative cooperation among the Unions'). See D J Halbert 'The World Intellectual Property Organization: past, present, and future' (2007) 54 *Journal of the Copyright Society of the U.S.A.* 253 for a discussion of the history of WIPO and its goals, along with a critique of WIPO governance and a proposal that it take on a broader, more participatory role in the development context.

<sup>15</sup> See, for example, R L Okediji 'WIPO–WTO relations and the future of global intellectual property norms' (2008) 39 *Netherlands Yearbook of International Law* 69 ('In sum, WIPO's institutional transformation and the strategies by which that transformation was effected . . . were central in entrenching the contemporary prevailing IP orthodoxy in which public policy concerns can limit the exclusive proprietary rights of rights owner only in exceptional circumstances'.)

<sup>16</sup> See, for example, J Krim 'The quiet war over open-source' *Washington Post* at E01 (21 August 2003) (describing WIPO capitulation to pressure to cancel a meeting to discuss open source software).

<sup>17</sup> See, for example, J E Bessen 'Open source software: free provision of complex public goods' (July 2005) (unpublished working paper, Boston University School of Law), available at <http://ssrn.com/abstract=588763>; von Hippel (n 6) 87; K Lakhani & R G Wolf 'Why hackers do what they do: understanding motivation and effort in free/open source software projects' (MIT Sloan School of Management, Working Paper No. 4425–03, 2003) available at <http://ssrn.com/abstract=443040>.

<sup>18</sup> R C Dreyfuss 'Fostering dynamic innovation development and trade Intellectual property as a case study in global administrative law' in this volume 237. See also, for a similar argument with respect to development issues, Halbert (n 14) 283–84.

<sup>19</sup> See WIPO Standing Committee on the Law of Patents, Report on the International Patent System, SCP/12/3 (15 April 2008), available at [http://www.wipo.int/edocs/mdocs/scp/en/scp\\_12/scp\\_12\\_3.pdf](http://www.wipo.int/edocs/mdocs/scp/en/scp_12/scp_12_3.pdf); WIPO Standing Committee on the Law of Patents, Summary by the Chair, SCP/12/4 Rev. (26 June 2008), available at [http://www.wipo.int/edocs/mdocs/scp/en/scp\\_12/scp\\_12\\_4\\_rev.pdf](http://www.wipo.int/edocs/mdocs/scp/en/scp_12/scp_12_4_rev.pdf); WIPO Standing Committee on the Law of Patents, Exclusions for Patentable Subject Matter and Exceptions and Limitations to the Rights, SCP/13/3 (4 February 2009), available at [http://www.wipo.int/edocs/mdocs/scp/en/scp\\_13/scp\\_13\\_3.pdf](http://www.wipo.int/edocs/mdocs/scp/en/scp_13/scp_13_3.pdf).

<sup>20</sup> See Okediji (n 15) 48–52 (discussing potential models for the WIPO–WTO relationship).

tor communities, scientific researchers, open source proponents, and of other stakeholders, including developing and developed countries and NGOs representing users. An Innovation Policy Agenda would be distinct from the Development Agenda because it would focus on the effects of evolving innovation paradigms, which cut across countries at every level of development. Nonetheless, it would benefit from WIPO's experience with the Development Agenda,<sup>21</sup> which has already taken a peripheral interest in some aspects of innovation beyond the intellectual property paradigm.<sup>22</sup> One of the tasks involved in proposing an Innovation Policy Agenda must be to reconsider current WIPO projects in light of a broader view of the global innovation regime. WIPO committees on patent and copyright have already begun to study and discuss the availability of flexibility for limitations and exceptions to IP rights under TRIPS.<sup>23</sup> Recently, these discussions have begun to acknowledge the need to consider various paradigms for innovation.<sup>24</sup> An Innovation Policy agenda would provide a focal point for these discussions and thus bring the question of how best to promote innovation, rather than how best to promote intellectual property rights, to the fore. In particular, WIPO should reconsider its attempt to develop a Substantive Patent Law Treaty in light of a broader innovation mandate, just as it has been urged to do with respect to development and access issues.<sup>25</sup>

Dreyfuss has considered in detail various legal mechanisms by which WTO interpretation of TRIPS might incorporate WIPO input, particularly with respect to interpretation of TRIPS flexibilities under Articles 27, 30, and 31 in light of the Policies and Objectives set out in Articles 7

<sup>21</sup> See, for example, Halbert (n 14) 272–76, describing the opening up of WIPO to broader participation during the period leading up to its adoption of the Development Agenda.

<sup>22</sup> See the 45 Adopted Recommendations under the WIPO Development Agenda [hereinafter: Development Agenda] at nos. 16, 17, 23, 27, 35, 36, 45 available at <http://www.wipo.int/export/sites/www/ip-development/en/agenda/recommendations.pdf>.

<sup>23</sup> Regarding patents see sources cited in note 19. Regarding copyright, see for examples, Conclusions of the Standing Committee on Copyright and Related Rights (SCCR), 5–7 November 2008, available at [http://www.wipo.int/edocs/mdocs/copyright/en/sccr\\_17/sccr\\_17\\_www\\_112533.pdf](http://www.wipo.int/edocs/mdocs/copyright/en/sccr_17/sccr_17_www_112533.pdf); SCCR, WIPO Study on Limitations and Exceptions of Copyright and Related Rights in the Digital Environment, available at [http://www.wipo.int/meetings/en/doc\\_details.jsp?doc\\_id=16805](http://www.wipo.int/meetings/en/doc_details.jsp?doc_id=16805); Automated Rights Management Systems and Copyright Limitations and Exceptions, available at [http://www.wipo.int/meetings/en/doc\\_details.jsp?doc\\_id=59952](http://www.wipo.int/meetings/en/doc_details.jsp?doc_id=59952); Study on Copyright Limitations and Exceptions for Libraries and Archives, available at [http://www.wipo.int/meetings/en/doc\\_details.jsp?doc\\_id=109192](http://www.wipo.int/meetings/en/doc_details.jsp?doc_id=109192).

<sup>24</sup> For example, the 'list of issues for further elaboration and discussion in the future' identified at the meeting of the Standing Committee on the Law of Patents, 23–27 June 2008, includes 'alternative models for innovation', SCP/12/4 Annex (n 19).

<sup>25</sup> J H Reichman & R C Dreyfuss 'Harmonization without consensus: critical reflections on drafting a substantive patent law treaty' (2007) 57 *Duke Law Journal* 85; Proposal by Argentina and Brazil for the Establishment of a Development Agenda for WIPO WO/GA/31/11 Annex (27 August 2004) at 2, available at [http://www.wipo.int/documents/en/document/govbody/wo\\_gb\\_ga/pdf/wo\\_ga\\_31\\_11.pdf](http://www.wipo.int/documents/en/document/govbody/wo_gb_ga/pdf/wo_ga_31_11.pdf).



and 8.<sup>26</sup> Building on those proposals, as part of an Innovation Policy Agenda, WIPO should consider adopting procedural mechanisms to vet proposed implementations of TRIPS flexibilities from an innovation policy perspective. If these procedures are designed, in analogy to notice and comment proceedings in domestic administrative law, to provide sufficiently robust transparency and participation,<sup>27</sup> the results of these deliberations might well be given considerable weight in WTO proceedings on purely persuasive grounds, both by WTO dispute resolution panels and by the TRIPS Council in its own deliberations.<sup>28</sup> The Internet opens up more expansive possibilities for voice even beyond increased participation by recognised groups –

a global online version of notice and comment is a practical possibility, which would permit the development of innovation policy to tap into the same emergent and heterogeneous expertise that drives these newer innovation paradigms.<sup>29</sup>

The above suggestions for implementing a broader-based innovation policy are constrained, of course, by the language of TRIPS itself. While there is arguably considerable leeway in TRIPS,<sup>30</sup> its provisions, with their prohibition on technological discrimination,<sup>31</sup> their case-by-case approach to compulsory licensing,<sup>32</sup> their assumption that all exceptions to strong patent rights should be limited,<sup>33</sup> and their requirement that all

<sup>26</sup> Dreyfuss (n 18) 251–256.

<sup>27</sup> See, for example, Cassese ‘Administrative law without the state?’ (n 12) 690–93; Esty (n 12) 1527–37; Kingsbury *et al* (n 12) 37–42; Slaughter & Zaring (n 12) 220–24, discussing issues of accountability, transparency, and participation in global governance.

<sup>28</sup> Okediji (n 15) 22, 42 discusses the way in which WIPO and its predecessors have employed publications and studies to play a key role in shaping the substantive debate about the contours of IP protection in the past. See also P B Hugenholtz & R L Okediji ‘Conceiving an international instrument on limitations and exceptions to copyright: final report’, Open Society Institute (2008) 49–50, available at <http://www.ivir.nl/publicaties/hughholtz/finalreport2008.pdf> (discussing the interactions between WIPO soft law creation and TRIPS in the copyright context).

<sup>29</sup> See, for related ideas to promote online participation in governance, <http://gplv3.fsf.org> (the discussion process used by the Free Software Foundation in developing its GPL licences); [www.peertopatent.org](http://www.peertopatent.org) (an experimental project inviting online review of patent applications in the United States Patent and Trademark Office); B S Noveck ‘“Peer to patent”: collective intelligence, open review, and patent reform’ (2006) 20 *Harvard Journal of Law & Technology* 123 (proposing the peer-to-patent review process); B S Noveck ‘The electronic revolution in rulemaking’ (2004) 53 *Emory Law Journal* 433 (discussing the potential, generally, for online public participation in notice-and-comment rulemaking in the United States domestic context); C M Ho ‘Biopiracy and beyond: a consideration of socio-cultural conflicts with global patent policies’ (2006) 39 *University of Michigan Journal of Law Reform* 433 at 532–40 (proposing that WIPO host an online forum for commentary and debate about potential biopiracy and other moral and policy issues raised by particular patents).

<sup>30</sup> See discussion in Part III (1).

<sup>31</sup> Article 27 of TRIPS.

<sup>32</sup> Article 31 of TRIPS.

<sup>33</sup> Article 30 of TRIPS.

patentees be afforded exclusive rights of use,<sup>34</sup> were not designed with user innovation in mind and may not stretch far enough to accommodate newer innovative paradigms in an optimal manner.

An even more ambitious approach to WIPO involvement would be to amend TRIPS to provide a more open-ended exception provision to accommodate evolving innovation practices and to set out a more explicit role for WIPO in vetting potential exceptions. For example, one might imagine replacing Article 30 with a broad provision permitting exceptions that are 'reasonably calculated to promote innovation and not to restrain trade' and explicitly providing that Articles 27 and 28 are subject to such exceptions. WIPO evaluations of the reasonableness of particular exceptions could then be assigned a degree of deference in WTO dispute resolution proceedings.<sup>35</sup> Such an approach would be desirable only if WIPO's vetting procedures met minimal standards of transparency and accountability, of course, and there is room for debate as to the degree of deference that properly should be afforded to WIPO determinations by WTO bodies.<sup>36</sup>

The point here is not to answer, or even to pose, all of the substantive questions that would fall within the purview of an international innovation policy organisation but only to query whether the global governance of innovation would benefit from a more flexible, broadly-based centre of innovation expertise. The gist of the proposal is to shift the focus of WIPO's portfolio. Rather than considering innovation policy only secondarily, as it impacts the intellectual property regime, a re-envisioned WIPO would put innovation policy front and centre, regarding intellectual property as only one mechanism for innovation.<sup>37</sup>

In Part II I begin by describing the emerging paradigm of user innovation and exploring some of its relevant features. In Part III I describe how current TRIPS provisions may impede the full realisation of the potential of this and other alternative innovation modes. Part IV discusses the proposal for re-imagining WIPO in somewhat more detail.

<sup>34</sup> Article 28 of TRIPS.

<sup>35</sup> See also Okediji (n 15) 49–50, discussing a possible role for WIPO as an 'expert agency', though concluding that it would be preferable for the WTO to be the primary setter of global IP norms (at 54–58).

<sup>36</sup> See Dreyfuss (n 18) from 266.

<sup>37</sup> The proposal to re-focus WIPO on innovation policy more broadly is not necessarily inconsistent with pursuing other approaches, such as, for example, proposals to amend TRIPS in order to provide mandatory ceilings on intellectual property protection. See, for example, A Kur & H Grosse Ruse-Khan 'Enough is enough – the notion of binding ceilings in international intellectual property protection', Max Planck Institute for Intellectual Property, Competition & Tax Law Research Paper Series No. 09–01, available at <http://ssrn.com/abstract=1326429>; Hugenholtz & Okediji (n 28), though it emphasises the importance of flexibility (which is already recognised in both of these proposals) and argues that WIPO is the best place to focus consideration of such proposals.



## II THE USER INNOVATION PARADIGM

User innovation occurs everywhere, in both commercial and non-commercial contexts, as the following examples illustrate. A sailplane aficionado develops a rocket-assisted emergency ejection system.<sup>38</sup> Steel manufacturers develop improvements on the Bessemer steel process that lead to an eight-fold increase in production in a ten-year period.<sup>39</sup> Users of printed circuit computer-aided design software modify and develop the software to accommodate increasingly densely-packed circuit boards.<sup>40</sup> Surgeons improve and modify medical equipment for their own use.<sup>41</sup> Builders develop means for routing wiring through commercially available 'stressed-skin panels' used to form the outer walls of houses.<sup>42</sup> Cyclists interested in off-road cycling invent the original mountain bikes.<sup>43</sup> Manufacturers develop improved designs for their factories. An operator of an online store develops a method of streamlining the payment process for frequent customers.<sup>44</sup> A research scientist develops a new instrument for measuring the chemical composition of a surface.<sup>45</sup>

In earlier studies, Eric von Hippel and others demonstrated that 'users of products and services – both firms and individual consumers – are increasingly able to innovate for themselves' in many fields of technology.<sup>46</sup> The twenty-first century has seen an explosion in user innovation, which has very different characteristics from the mass-market, seller-based innovation which was the model for TRIPS.<sup>47</sup> It relies much less than the traditional paradigm on intellectual property for incentives to invent, disclose, and disseminate,<sup>48</sup> and makes use of dispersed local

<sup>38</sup> N Franke & S Shah 'How communities support innovative activities: an exploration of assistance and sharing among end-users' (2003) 32 *Research Policy* 157 at 163.

<sup>39</sup> P B Meyer 'Episodes of collective invention' (U.S. Dept. of Labor, Bureau of Labor Statistics Working Paper No. 368) available at [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=466880](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=466880).

<sup>40</sup> G L Urban & E von Hippel 'Lead user analyses for the development of new industrial products' (1988) 34 *Management Science* 569 at 571–72.

<sup>41</sup> C Lüthje 'Customers as co-inventors: an empirical analysis of the antecedents of customer-driven innovations in the field of medical equipment' in *Proceedings of the 32nd EMAC Conference*, Glasgow (2003).

<sup>42</sup> S Slaughter 'Innovation and learning during implementation: a comparison of user and manufacturer innovations' (1993) 22 *Research Policy* 81 at 83–85.

<sup>43</sup> See G Buenstorf 'Designing clunkers: demand-side innovation and the early history of mountain bikes' in J S Metcalfe & U Cantner (eds) *Change, Transformation and Development* (2002) 61.

<sup>44</sup> See, for example, S Hansell 'Injunction against BarnesandNoble.com is overturned' *N.Y. Times* (15 February 2001) at C3 (discussing patent dispute between Amazon.com and Barnes and Noble over 'One-Click' ordering method).

<sup>45</sup> W Riggs & E von Hippel 'Incentives to innovate and the sources of innovation: the case of scientific instruments' (1994) 23 *Research Policy* 459 at 460–64.

<sup>46</sup> von Hippel (n 6) 1.

<sup>47</sup> See von Hippel (n 6) for an overview of these developments.

<sup>48</sup> See Strandburg (n 6) 483–90; Y Benkler 'Coase's Penguin, or, Linux and the nature of the firm' (2002) 112 *Yale Law Journal* 369 at 423–40; S Weber *The Success of Open Source* (2004)

knowledge to both pose and solve technological problems.<sup>49</sup> User innovation relies on the fact that in many cases innovation is highly contextual – it depends on sticky information that is distributed heterogeneously in the population and on diverse experiences and knowledge.<sup>50</sup> So, for example, user innovation often results from customisation of a mass-market product by lead users, whose needs are heterogeneous and ahead of those of the ‘average’ user.<sup>51</sup> Several recent developments exemplify the increasing importance of user motivations for invention. For example, open source software is significantly driven by user innovation.<sup>52</sup> Besides providing products with mass appeal, such as Linux, the open source process provides a means to pool inventive resources to obtain customised software products to suit the needs of dispersed and relatively small groups of users.<sup>53</sup> The expanding patentability of the tools and products of agriculture, such as genetically modified seeds, brings agricultural firms into conflict with farmers who have a long tradition of innovation for their own use.<sup>54</sup> Those who question whether patents are necessary to produce certain types of innovations have also met the extension of patentable subject matter in the United States to encompass business methods has also been met with scepticism.<sup>55</sup> Underlying this

Harvard; J Lerner & J Tirole ‘The scope of open source licensing’ (2005) 21 *Journal of Law, Economics & Organization* 20; D Harhoff, J Henkel & E A von Hippel ‘Profiting from voluntary information spillovers: how users benefit by freely revealing their innovations’ (2003) 32 *Research Policy* 1752; Lakhani & Wolf (n 17).

<sup>49</sup> See, for example, Benkler (n 48) 406–23; E von Hippel & G von Krogh ‘Open source software and the private–collective innovation model: issues for organization science’ (2003) 14 *Organization Science* 209; E von Hippel ‘“Sticky information” and the locus of problem solving: implications for innovation’ (1994) 40 *Management Science* 429; C Luthje, C Herstatt & E von Hippel ‘User-innovators and “local” information: the case of mountain biking’ (2005) 34 *Research Policy* 951.

<sup>50</sup> See, for example, Benkler (n 48) 406–23; von Hippel (n 6) 63–76.

<sup>51</sup> von Hippel (n 6) 22–31.

<sup>52</sup> See, for example, Bessen (n 17); von Hippel (n 6) 87; Lakhani & Wolf (n 17).

<sup>53</sup> Open source software projects are extremely diverse in their participation rates. There is also great diversity in the nature of participation – from proposing to administering to developing to merely commenting on projects. A 2002 empirical study of open source projects on [www.sourceforge.net](http://www.sourceforge.net), probably the most popular platform for open source development, showed that the mean number of developers for one hundred mature projects studied was about six. S Krishnamurthy ‘Cave or community?: An empirical examination of 100 mature open source projects’ (2002) *First Monday* available at [http://www.firstmonday.org/Issues/issue7\\_6/krishnamurthy/](http://www.firstmonday.org/Issues/issue7_6/krishnamurthy/).

<sup>54</sup> See, for example, K Aoki ‘Weeds, seeds, & deeds: recent skirmishes in the seed wars’ (2003) 11 *Cardozo Journal of International & Comparative Law* 247; D R Downes ‘The Convention on Biological Diversity: seeds of green trade?’ (1994) 8 *Tulane Environmental Law Journal* 163 at 168; C M Ho (n 29); S Safrin ‘Chain reaction: how property begets property in an interconnected world’ (2007) 82 *Notre Dame Law Review* 1917; H Stein ‘Intellectual property and genetically modified seeds: the United States, trade, and the developing world’ (2005) 3 *Northwestern Journal of Technology & Intellectual Property* 160.

<sup>55</sup> See, for example, J Dratler, Jr. ‘Does Lord Darcy yet live? The case against software and business-method patents’ (2003) 43 *Santa Clara Law Review* 823; R C Dreyfuss ‘Are business method patents bad for business?’ (2000) 16 *Santa Clara Computer & High Technology Law Journal*

scepticism may be an implicit recognition that intent to use rather than sell has traditionally motivated the invention of business methods.<sup>56</sup> Scientific researchers are also user innovators, inventing research tools and methods in the course of their research,<sup>57</sup> but universities are increasingly (and controversially) patenting scientific research tools.<sup>58</sup>

While user innovation has no doubt always been widespread, its significance is growing because of technological changes since the negotiation of TRIPS in 1994. The growing importance of software, as both a tool of innovation and a component of products, means that more and more design and experimentation is feasible with relatively limited capital expenditure.<sup>59</sup> Computerisation of manufacturing and design also decreases the cost of creating custom-designed products.<sup>60</sup> The Internet also enhances the potential for user innovation by providing mechanisms by which medium-sized groups of users with similar needs for customisation can pool their inventive resources, dividing the costs of user innovation among themselves and thereby widening the range of cost-effective user innovations.

263; A L Durham ‘“Useful arts” in the information age’ 1999 *Brigham Young University Law Review* 1419 at 1488–96; J A Gladstone ‘Why patenting information technology and business methods is not sound policy: lessons from history and prophecies for the future’ (2002) 25 *Hamline Law Review* 217; N Lee ‘Patent eligible subject matter reconfiguration and the emergence of proprietary norms – the patent eligibility of business methods’ (2005) 45 *IDEA: The Intellectual Property Law Review* 321; K E Maskus & E V Wong ‘Searching for economic balance in business method patents’ (2002) 8 *Washington University Journal of Law & Policy* 289; R P Merges ‘As many as six impossible patents before breakfast: property rights for business concepts and patent system reform’ (1999) 14 *Berkeley Technology Law Journal* 577 at 580–81; M J Meurer ‘Business method patents and patent floods’ (2002) 8 *Washington University Journal of Law & Policy* 309; M Pollack ‘The multiple unconstitutionality of business method patents: common sense, congressional consideration, and constitutional history’ (2002) 28 *Rutgers Computer & Technology Law Journal* 61; J R Thomas ‘The patenting of the liberal professions’ (1999) 40 *Boston College Law Review* 1139 at 1143–63. See also *Lab. Corp. of Am. Holdings v. Metabolite Labs., Inc.* (2006) 126 S. Ct. 2921 (Breyer, J, dissenting from dismissal of cert as improvidently granted); *eBay Inc. v. MercExchange, L.L.C.* (2006) 126 S. Ct. 1837 at 1842 (Kennedy, J, concurring) (raising questions about business methods patents and the Federal Circuit’s standard for patentable subject matter). But see, for example, J R Allison & E H Tiller ‘The business method patent myth’ (2003) 18 *Berkeley Technology Law Journal* 987 (arguing that business method patents are indistinguishable from other patents on processes).

<sup>56</sup> For a more extensive discussion of this point, see K J Strandburg ‘What if there were a business method user exemption to patent infringement?’ 2008 *Michigan State Law Review* 245.

<sup>57</sup> See Riggs & von Hippel (n 45); Strandburg (n 6).

<sup>58</sup> See, for example, R S Eisenberg ‘Public research and private development: patents and technology transfer in government-sponsored research’ (1996) 82 *Virginia Law Review* 1663 at 1726 (positing that the patenting of upstream research tools calls into question the appropriateness of public funding to support that research); K J Strandburg ‘The research exemption to patent infringement: the delicate balance between current and future technical progress’ in P Yu (ed) *Intellectual Property and Information Wealth* (2006) (reviewing the longstanding debate about whether there should be an exemption to patent infringement for research use).

<sup>59</sup> See Y Benkler *The Wealth of Networks* (2006) 68–90, 212–33, 277–78; von Hippel (n 6) 177.

<sup>60</sup> S Thomke & E von Hippel ‘Customers as innovators: a new way to create value’ *Harvard Business Review* (April 2002) 74–81.

User innovation is of greatest importance where users have both unique local information about their needs and the technical capacity to make inventions that fulfill those needs. The comparative advantage of user innovation for a particular technology depends on factors such as the heterogeneity of uses, the presence of lead users, the technical difficulty of invention in a particular field, and the costs of development.<sup>61</sup> For purposes of the present discussion, the most important features of user innovation are its lack of emphasis on the ‘incentive to invent’ justification for intellectual property which is paramount in the high protection model embodied in TRIPS and its reliance on heterogeneous and local experience and on tailoring innovation to specific uses, which undercuts the international trade conception of commodity knowledge goods.

(1) *User innovation and the intellectual property incentive story*

In sharp contrast to the standard seller-based view underlying most discussions of the societal justifications for the patent system, user innovators expect to benefit primarily from developing and using an innovation rather than selling it.<sup>62</sup> Unlike seller innovators, user innovators are motivated primarily by their own use of their inventions and thus patents play a relatively minor role in motivating them to invent.<sup>63</sup> In some, but not all, cases, user innovators may also derive non-pecuniary returns from innovation, such as enjoyment of the process of improving products for their own use, reputational status within a user community, or opportunities to gain skills.<sup>64</sup>

Besides motivating invention, patenting is also generally expected to motivate disclosure and dissemination of inventions. Elsewhere I have discussed in detail the ways in which patenting affects incentives to disseminate and disclose user innovations, concluding that on balance patent incentives tend to be much less important for user innovations than for seller innovations.<sup>65</sup> In part this is because a rather surprising amount

<sup>61</sup> See J Henkel & E von Hippel ‘Welfare implications of user innovation’ (2004) 30 *Journal of Technology Transfer* 73 (discussing in detail the welfare implications of user innovation in comparison and relationship to manufacturer innovation); von Hippel (n 6) 63–76 (discussing circumstances under which users are low-cost innovators).

<sup>62</sup> For discussions of the traditional incentive theories of patenting, see, for example, R D Blair & T F Cotter ‘Rethinking patent damages’ (2001) 10 *Texas Intellectual Property Law Journal* 1 at 78–80; R S Eisenberg ‘Patents and the progress of science: exclusive rights and experimental use’ (1989) 56 *University of Chicago Law Review* 1017 at 1024–28; K J Strandburg ‘What does the public get? Experimental use and the patent bargain’ 2004 *Wisconsin Law Review* 81 at 90–92. Note that the point of this article is not to distinguish between commercial and non-commercial motivations, but between the motivation to invent something in order to sell it and the motivation to invent something in order to use it ones’ self – even if the use is in a commercial context.

<sup>63</sup> Strandburg (n 6) 483–85.

<sup>64</sup> Von Hippel (n 6) 85–88.

<sup>65</sup> Strandburg (n 6) 483–90.

of 'free revealing' of user innovations takes place.<sup>66</sup> Presumably, this is because free revealing has significant reputational, reciprocal, and other benefits to user innovators.<sup>67</sup> This is partly because users often form innovative communities in which they exchange ideas in a collaborative fashion to the mutual advantage of group members.<sup>68</sup> Free revealing may enable others to improve on a user innovation, thus making that innovation more valuable to the original user innovator. Free revealing occurs even between competitors, who sometimes prefer to share certain kinds of information freely while competing in other ways.<sup>69</sup>

On balance, therefore, the standard patent incentive story used to justify the high protectionist approach of TRIPS is not a good fit for user innovation. In general, patent protection is both less necessary and more socially costly for user innovations than for seller innovations.

(2) *User innovation and heterogeneous and local knowledge*

User innovation is also mismatched with the mass-market, seller-based innovation paradigm because it is heterogeneous and relies on distributed local knowledge. Users possess dispersed local knowledge about their specific situations.<sup>70</sup> Transferring this experiential knowledge to manufacturers can be expensive because of differences in background knowledge, experience, and so forth, making user innovation more efficient, in many cases, than attempting to teach manufacturers what diverse users want.<sup>71</sup>

Users develop innovations that respond to their specific needs and situations, leveraging their information advantages rather than manufacturers' advantages in large-scale production.<sup>72</sup> Many user innovators are lead users who develop their innovations by customising or modifying commercial products to satisfy their specific needs, which differ from

<sup>66</sup> See von Hippel (n 6) 77–80; Henkel 'Selective revealing in open innovation processes: the case of embedded linux' (2006) 35 *Research Policy* 953 at 954–55, 959–67.

<sup>67</sup> See von Hippel (n 6) 77–80; Harhoff *et al* (n 48); E von Hippel & G von Krogh 'Free revealing and the private collective model for innovation incentives' (2006) 36 *R&D Management* 295.

<sup>68</sup> von Hippel (n 6) 93–106; Franke & Shah (n 38); K J Strandburg 'Sharing research tools and materials: homo scientificus and user innovator community norms' in R C Dreyfuss, H First & D L Zimmerman (eds) *Working Within the Boundaries of Intellectual Property* (forthcoming), available at [http://papers.ssm.com/sol3/papers.cfm?abstract\\_id=1136606](http://papers.ssm.com/sol3/papers.cfm?abstract_id=1136606).

<sup>69</sup> von Hippel (n 6) 10, 87; Henkel (n 66); Harhoff *et al* (n 48); Strandburg (n 68).

<sup>70</sup> von Hippel (n 6) 8; see also S K Shah 'From innovation to firm formation in the windsurfing, skateboarding, and snowboarding industries', University of Illinois, Working Paper No. 05–0107 (2006) available at [http://research.kauffman.org/cwp/ShowProperty/webCacheRepository/Documents/2006\\_SonaliShah.pdf](http://research.kauffman.org/cwp/ShowProperty/webCacheRepository/Documents/2006_SonaliShah.pdf) at 32–33.

<sup>71</sup> Henkel & von Hippel (n 61).

<sup>72</sup> S K Shah 'Open beyond software' in C DiBona *et al* (eds) *Open Sources 2.0: The Continuing Evolution* at 338, 341–43 (2006); Shah (n 70); von Hippel (n 6) 45–61.

those of the mass of consumers.<sup>73</sup> These user innovators often anticipate features for which general consumer demand has not yet developed.<sup>74</sup> A study of innovations in mountain biking equipment, for example, found that user innovations often depended on information that the inventors had obtained through their own cycling experience, reflecting their own unique circumstances and interests, such as a desire to bike in extreme weather conditions or to perform acrobatic stunts.<sup>75</sup>

Particularly in the international context, user innovation may be necessary in order for a technology developed in one environment to be useful in another.<sup>76</sup> It may be extremely difficult and costly for a manufacturer to acquire the degree of local experiential knowledge needed to customise a technology for its best use in circumstances different from those for which it was originally designed. Even an innovation targeted to a foreign market may fall flat without user participation in the design. A study by Douthwaite, Keatinge and Park, for example, probed the role of user innovation in adoption of agricultural technologies intended to assist development in Asia.<sup>77</sup> The researchers concluded that, especially as either the technology or the local agricultural system increased in complexity, the importance of user innovation and interaction between the technology originators and local users increased.<sup>78</sup> Recognising this, Anil Gupta and his Honey Bee Network provide a means of documenting and sharing grassroots user innovations in India.<sup>79</sup> The organisation is also engaged in efforts to match grassroots innovators with scientists and engineers who can perform more traditional research and development and with entrepreneurs so as to facilitate the development of commercial products based on these user innovations.<sup>80</sup> Because user innovation is often heterogeneous and customised to specific local contexts and because the innovative process depends on dispersed local knowledge, the kinds of inventions likely to be produced by user innovation are not well suited to a conventional understanding of the trade paradigm, which is most natural for mass-market goods which can be designed and produced in one place and sold in another.

<sup>73</sup> Ibid 22–43.

<sup>74</sup> Ibid 20–30.

<sup>75</sup> Ibid 73.

<sup>76</sup> See B Douthwaite, J D H Keatinge & J R Park 'Why promising technologies fail: the neglected role of user innovation during adoption' (2001) 30 *Research Policy* 819. See also A K Gupta 'From sink to source: the honey bee network documents indigenous knowledge and innovations in India' (2006) 1 *Innovations* 49 (reporting on project attempting to document local innovations and to 'forge links' between local innovators and university researchers).

<sup>77</sup> See note 76.

<sup>78</sup> Ibid 834–35.

<sup>79</sup> Gupta (n 76).

<sup>80</sup> Ibid 61–64.



(3) *User innovation and the 'permission to innovate' culture of intellectual property doctrine*

Another feature of user innovation relevant to the present discussion is the extent to which user innovation relies on functional improvements and modifications to previous inventions. While users do make major functional improvements, user innovation often builds on existing technology.<sup>81</sup> And while users may be large corporate entities, often they are individuals, who are unlikely to engage in *ex ante* licensing transactions in order to obtain 'permission to innovate'.<sup>82</sup> Moreover, because user innovation often occurs as a side effect of use, rather than as a result of a separate program of research and development, even corporate users may not know in advance that they plan to improve on the technologies they are using. Because users tend to make heterogeneous functional inventions, while manufacturers tend to make innovations that spring from their expertise in standardisation, safety, ease of manufacture, and returns to scale,<sup>83</sup> user innovation and manufacturer innovation are often recursive, meaning that an ongoing dialogue of innovation is most productive of technological advance.<sup>84</sup>

(4) *User innovation and development*

While user innovation occurs throughout the world, and most studies of user innovation have focused on developed countries, it seems likely that user innovation is of particular importance to developing countries.<sup>85</sup> The local needs and preferences of citizens of developing countries are less likely to be well understood and accounted for in mass markets because those citizens will be less likely to constitute economically important blocks of consumers and also because mass-market goods are likely to be designed in developed countries.<sup>86</sup> User innovation thus may be an important means of adapting mass-market technologies to the specific needs of citizens of developing countries. User innovation building upon a primary technology is also more likely to be within the capacity of some developing country innovators, who may lack sophisticated engineering training and skills but be able to exploit their own local knowledge and

<sup>81</sup> See, for example, von Hippel (n 6) 29–43 (discussing the important role of 'lead users' of existing technologies in user innovations); Henkel & von Hippel (n 61) 19.

<sup>82</sup> Ibid; V Braun & C Herstatt 'Barriers to user-innovation: the paradigm of "permission to innovate"' in *IEEE International Conference on Management of Innovation and Technology* (2006) 176 (discussing problems posed by a 'permission culture').

<sup>83</sup> von Hippel (n 6) 63–76.

<sup>84</sup> Henkel & von Hippel (n 61) 12–14.

<sup>85</sup> See, for example, Gupta (n 76) 51–61, discussing local innovations in India.

<sup>86</sup> See, for example, A Kapczynski, S Chaifetz, Z Katz & Y Benkler 'Addressing global health inequities: an open licensing approach for university innovations' (2005) 20 *Berkeley Technology Law Journal* 1031 at 1051–57 (addressing the issue of under-production of goods for developing countries in the context of orphan drugs).

expertise in their innovative activities.<sup>87</sup> Thus, though making space for user innovation in the global intellectual property regime is of general importance, it may be of particular importance to the developing world.

### III THE TROUBLE WITH TRIPS: CONSTRAINED BY AN OUTMODED INNOVATION PARADIGM

As mentioned in the Introduction, much of the criticism of TRIPS, as well as most of the impetus for the progress reflected in the Doha Declarations and the adoption of the WIPO Development Agenda, has focused on TRIPS failure to balance adequately the need to promote future innovation with current needs for *consumer access* to technology, particularly in the public health arena. Here I leave aside those pressing concerns and focus on TRIPS – particularly its patent provisions – as innovation regulation. As discussed above, TRIPS reflects a particular mass-market, seller-based view of innovation<sup>88</sup> that tends to evoke a one-size-fits-all high protection intellectual property regime. The high protection baseline of TRIPS reflects, among other things, its primary mission as an instrument of trade rather than innovation and its genesis during a period of manufacturer-based innovation aimed at producing mass-market goods.<sup>89</sup> A trade paradigm based on a concept of static comparative advantage<sup>90</sup> is best suited to mass-market goods which can be effectively designed and produced in one place and shipped off for use in another.

While the pharmaceutical products, off-the-shelf software and, in the copyright context, mass-market entertainment products which dominated the context in which TRIPS was negotiated might at least arguably fit this conception (though even that is not at all clear in light, for example, of the very different public health contexts and available information technology infrastructures in different countries), TRIPS locked in a set of minimum standards based on the mass manufacturer model at precisely the wrong moment. As discussed in Part II, the turn of the twenty-first century has seen a virtual explosion in the importance of information technology leading to a surge in software innovation, in

<sup>87</sup> See, for example, Gupta (n 76) 51–61.

<sup>88</sup> See Strandburg (n 6) for a more detailed discussion of the distinction between the user innovation and seller innovation paradigms in the context of patent law.

<sup>89</sup> See S K Sell *Private Power, Public Law: The Globalization of Intellectual Property Rights* (2003) (arguing that TRIPS was moulded to protect the markets of particular intellectual property rights holders – notably the major pharmaceutical companies). See also Gervais (n 1) for an overview of the history of the TRIPS Agreement.

<sup>90</sup> See, for example, B Greenwald & J E Stiglitz 'Helping infant economies grow: foundations of trade policies for developing countries' (2006) 96 *American Economic Review* 141 (arguing for a concept of dynamic comparative advantage which would take into account the potential for evolving economic capacity).

more open and dispersed models of innovation by commercial firms, in collaborative and open models of innovation made possible (and certainly more visible) by the World Wide Web and other digital technologies, and in user innovation. A simplistic trade perspective is singularly inapt for these new modes of innovative practice. Indeed, the very concept of 'trade' is often *in apropos* since these innovation practices are simply not well-described as means by which goods invented and produced in one place are sold in another.

The TRIPS 'minimum standards' commitment to a mass-market, seller-based innovation regime is reflected in its requirement of equal treatment of different technological arenas (Article 27); its crabbed approach to enforcement exceptions (Article 30), which reflects an assumption that unauthorised use is nearly always undesirable and should be permitted only in closely cabined circumstances; and its stringent restrictions on compulsory licensing (Article 31). The lack of any substantive maxima for intellectual property protection, along with the agreement's failure to put any limits on restrictive licensing practices or to deal with private ordering more generally, also reflect this myopic focus on one specific innovative model.<sup>91</sup> While it would certainly be desirable to read TRIPS flexibilities more expansively than they have often been read in the past,<sup>92</sup> it is nonetheless unlikely that an international intellectual property regime so thoroughly grounded in a mass-market, seller-based innovation model will be optimally suited to a world of diverse innovation paradigms.

This indictment of TRIPS is not intended to suggest that national legislatures have done much better at crafting innovation policy regimes. TRIPS was patterned after high protection national intellectual property policies, particularly those of the United States. The United States has been struggling to adapt its own patent law to the changing innovation landscape, a struggle that is reflected in stalemates between the pharmaceutical and information technology industries in attempted legislative

<sup>91</sup> See, for example, Dreyfuss (n 7); G B Dinwoodie 'The international intellectual property law system: new actors, new institutions, new sources' (2006) 10 *Marquette Intellectual Property Law Review* 205 at 214.

<sup>92</sup> See, for example, *Canada-Patent Protection of Pharmaceutical Products*, WT/DS114/R (17 March 2000), the only WTO panel decision to interpret TRIPS Articles [hereinafter: *Canada-Pharmaceuticals*]. Critiques of the approach taken there include Dinwoodie & Dreyfuss (n 10); C Garrison 'Exceptions to patent rights in developing countries', ICTSD Issue Paper No. 17 (October 2006) available at <http://ictsd.net/i/publications/11716/>; Dreyfuss (n 7) 22–24; and D B Barbosa, M Chon & A M von Hase 'Slouching towards development in international intellectual property' 2007 *Michigan State Law Review* 71 at 109–12. For a similar critique in the copyright context, see 'Declaration: a balanced interpretation of the "three-step test" in Copyright Law', available at [http://www.ip.mpg.de/ww/en/pub/news/declaration\\_on\\_the\\_three\\_step\\_cfm](http://www.ip.mpg.de/ww/en/pub/news/declaration_on_the_three_step_cfm). The initiators and coordinators of the Declaration are Christophe Geiger, Reto M. Hilty, Jonathan Griffiths and Uma Suthersanen.

revision<sup>93</sup> and in Supreme Court intervention to dial back some of the rigid interpretations of patent legislation by the Federal Circuit Court of Appeals.<sup>94</sup> The point, though, is that it is particularly problematic to enshrine a one-size-fits-all approach to innovation in an international agreement both because states are likely to be heterogeneous in their preferred innovative approaches and because, as a practical matter, re-negotiating an international agreement is fraught with difficulty.

That said, the recent history of TRIPS adaptation in the access to medicines context does provide some grounds for optimism and a model of how regime-shifting<sup>95</sup> and what Burris and collaborators have called a nodal approach to governance<sup>96</sup> might lead to incremental progress.<sup>97</sup> While the context is different, the access to medicines debate provides an example of how interests not originally accommodated in TRIPS can organise to produce change. Further, a number of commentators have suggested creative approaches to interpreting TRIPS Articles 27 and 30 flexibly, especially in light of the Objectives and Principles outlined in

<sup>93</sup> See, for example, B Kahin 'Patents and diversity in innovation' (2007) 13 *Michigan Telecommunications & Technology Law Review* 389 at 389–91 (discussing the divergent interests of the two sectors); EPO *Scenarios* (n 2) 94–95 (same); T Dutra 'House hearing on Patent Reform Bill dampens expectations for passage this year' (2009) 78 *BNA Patent, Trademark & Copyright Journal* (describing adverse positions taken by industry groups regarding patent reform in the United States).

<sup>94</sup> See, for example, *Quanta Computer, Inc. v. LG Elecs., Inc.* (2008) 128 S. Ct. 2109; *KSR Int'l Co. v. Teleflex, Inc.* (2007) 127 S. Ct. 1727; *Microsoft Corp. v. AT&T Corp.* (2007) 127 S. Ct. 1746; *MedImmune, Inc. v. Genentech, Inc.* (2007) 549 U.S. 118; *eBay, Inc. v. MercExchange, L.L.C.* (2006) 547 U.S. 388; *Merck KGaA v. Integra Lifesciences I, Ltd.* (2005) 545 U.S. 193.

<sup>95</sup> See, for example, L R Helfer 'Regime shifting: the TRIPs Agreement and new dynamics of international intellectual property lawmaking' (2004) 29 *Yale Journal of International Law* 1; P K Yu 'International enclosure, the regime complex, and intellectual property schizophrenia' (2007) *Michigan State Law Review* 1; S K Sell 'Structural, discursive, and institutional dimensions' (2004) 77 *Temple Law Review* 363. More generally, on the topic of evolving mechanism of international governance, see S Burris, M Kempa, & C Shearing 'Changes in governance: a cross-disciplinary review of current scholarship' (2008) 41 *Akron Law Review* 1. See also Chon (n 7) at 2852–53 for a critique of the effectiveness of regime-shifting in promoting the goals of developing countries.

<sup>96</sup> See, for example, Burris *et al* (n 12); J Braithwaite 'Methods of power for development: weapons of the weak, weapons of the strong' (2004) 26 *Michigan Journal of International Law* 297; S Burris 'Governance, microgovernance and health' (2004) 77 *Temple Law Review* 335; P Drahos 'Intellectual property and pharmaceutical markets: a nodal governance approach' (2004) 77 *Temple Law Review* 401. These authors argue that 'nodal governance' is a weapon that can be employed by both the weak and the strong. Specifically, Drahos describes the original methods by which the pharmaceutical industry obtained a high protection patent regime as an example of nodal governance (*ibid* at 407–19), yet argues that nodal governance provides an opportunity for developing countries with respect to traditional knowledge (*ibid* at 419–24). Thus, it remains unclear whether the shift toward a less state-based international governance regime will benefit developing countries in the intellectual property debate in the long run. For general discussions of this issue see, for example, Burris *et al* (n 95); Slaughter & Zaring (n 12) 220–24.

<sup>97</sup> See, for example, Yu (n 7) 400–402.

Articles 7 and 8.<sup>98</sup> These attempts are commendable and a more flexible approach is perhaps essential to the promotion of innovation globally. Here I provide an overview of the substantive challenges to adapting TRIPS to new modes of innovation before focusing on administrative mechanisms for an evolving international innovation policy regime in Part IV.

(1) *TRIPS flexibilities and evolving paradigms of innovation*

TRIPS sets out minimum standards of intellectual property protection. For patents, TRIPS specifies various minimum requirements involving patent coverage, term, associated rights, and remedies for infringement. Of particular interest for our purposes are Articles 27 and 28, dealing with patentable subject matter and rights conferred, respectively. With certain exceptions, Article 27 requires countries to make patents available ‘for any invention . . . in all fields of technology, provided that they are new, involve an inventive step and are capable of industrial application’, constraining the possibility of a nuanced approach to patentable subject matter.<sup>99</sup> Article 27 also requires that patent rights be ‘enjoyable without discrimination as to . . . the field of technology’.<sup>100</sup> Article 28 mandates that patents confer on their owners exclusive rights ‘to prevent third parties not having the owner’s consent from the acts of: making, using, offering for sale, selling, or importing’ their patented inventions.<sup>101</sup> Article 32 adds to the constraints by mandating a patent term of twenty years, which may be badly mismatched with the cumulative and collaborative pace of invention in some areas.<sup>102</sup>

The mass-market, seller-based innovation paradigm is reflected clearly in these basic all-encompassing requirements. In requiring that patents be available without discrimination, TRIPS reflects the assumption that patents are equally appropriate and effective for promoting innovation in all fields of technology. Similarly, in mandating that patent rights include rights of exclusive making and use, along with exclusive rights of sale, TRIPS reflects an assumption that all of these exclusive rights are needed to promote innovation in every context. User innovation undermines these basic assumptions. As discussed in Part II, the effectiveness of user

<sup>98</sup> See, for example, Dinwoodie & Dreyfuss ‘Diversifying without discriminating’ (n 10); C Garrison ‘Exceptions to patent rights in developing countries’, ICTSD Issue Paper No. 17 (October 2006) available at <http://ictsd.net/i/publications/11716/>; Dreyfuss (n 7) 22–24; D B Barbosa *et al* (n 92) 109–12. For a similar argument in the copyright context, see Declaration (n 92).

<sup>99</sup> Article 27 of TRIPS.

<sup>100</sup> *Ibid.*

<sup>101</sup> Article 28 of TRIPS.

<sup>102</sup> Article 32 of TRIPS. For a discussion of the issues of increasingly rapid and cumulative invention see, for example, EPO *Scenarios* (n 2) 88.

innovation approaches varies depending on issues such as the extent to which users of a technology are likely to have heterogeneous needs or diverse insights, the extent to which users have the technical capacity to improve a technology, and the availability of benefits from innovation other than those obtained by selling it.

The underlying TRIPS paradigm is also reflected in the fact that TRIPS fails to incorporate any standards of maximum intellectual property protection.<sup>103</sup> The lack of substantive maxima weighs strongly in favour of primary innovators, since follow-on innovators will often have to obtain licences from earlier innovators in order to pursue their inventions. This lack of substantive maxima in TRIPS again reflects a paradigm of innovation in which follow-on innovation is either unimportant or occurs within an industry structure in which *ex ante* licensing is an effective means to organise it. Such an assumption is inadequate even for traditional innovation, where a robust public domain plays an important role in promoting follow-on innovation, but it is particularly detrimental for user innovation, the distributed nature of which undermines the potential for *ex ante* licensing.

One possible response to concerns about the mismatch between the underlying innovation paradigm embodied in TRIPS and alternative innovation approaches is to point to TRIPS flexibilities. TRIPS itself bolsters the argument for a generous view of its flexibilities in Articles 7 and 8, which set out Objectives and Principles, respectively. Article 7 specifies that:

The protection and enforcement of *intellectual property rights should contribute to the promotion of technological innovation* and to the transfer and dissemination of technology, to the mutual advantage of producers and users of technological knowledge and in a manner conducive to social and economic welfare, and to a balance of rights and obligations.<sup>104</sup>

Article 8 states that:

1. Members may, in formulating or amending their laws and regulations, adopt measures necessary to protect public health and nutrition, and to *promote the public interest in sectors of vital importance to their socio-economic and technological development*, provided that such measures are consistent with the provisions of this Agreement.

2. Appropriate measures, provided that they are consistent with the provisions of this Agreement, may be needed to prevent the abuse of intellectual property rights by right holders or the resort to practices which unreasonably

<sup>103</sup> For discussions of the desirability of mandatory maxima of intellectual property protection, see Dreyfuss (n 7); Dinwoodie 'New actors, new institutions' (n 91) 214; Kur & Ruse-Khan (n 37); Hugenholtz & Okediji (n 37).

<sup>104</sup> Article 27 of TRIPS (emphasis added).



restrain trade or adversely affect the international transfer of technology. (Emphasis added.)<sup>105</sup>

In parallel with similar arguments with respect to access and to the traditional intellectual property balance, Articles 7 and 8 may provide a persuasive basis for interpreting TRIPS flexibly to encourage and support evolving modes of innovation.<sup>106</sup> In particular, Article 7 should be read as aspirational (rather than as an affirmation that intellectual property will fulfill these objectives) and its recognition that intellectual property 'should contribute' to the goal of innovation might be taken to acknowledge the possibility of other mechanisms for promoting innovation.<sup>107</sup> Article 8's statement that members may adopt measures 'to promote the public interest in sectors of vital importance to their . . . technological development' also provides a possible handle for accommodating alternative innovation approaches under the TRIPS regime since one could argue that in some contexts these alternative paradigms may be preferred to a standard IP approach as means for technological development.<sup>108</sup>

Nonetheless, Article 8 permits the adoption of such measures only when they are 'consistent with the provisions of this Agreement'.<sup>109</sup> Since the provisions of the Agreement are slanted toward a high protection regime that does not provide any explicit accommodation for evolving innovation paradigms, the question is whether the existing flexibilities are sufficient to permit us to shoehorn new innovation models into what is at bottom a mass-market, seller-based paradigm.

Certainly it would be possible to make significant progress by interpreting existing TRIPS flexibilities in light of the overall Objectives and Principles set out in Articles 7 and 8. Specifically, as argued by Dinwoodie and Dreyfuss, and recognised in a recent overview of TRIPS patent exceptions,<sup>110</sup> there may be wiggle room in the interpretation of Article 27's non-discrimination requirement, allowing for differential treatment of different industries as long as the differential treatment is based upon a legitimate purpose.<sup>111</sup> However, it is not clear that WTO panels will be inclined to interpret Article 27 with the expansive degree of flexibility

<sup>105</sup> Article 28 of TRIPS.

<sup>106</sup> See, for example, P K Yu 'The international enclosure movement' (2007) 82 *Indiana Law Journal* 827 at 863–66; Dinwoodie & Dreyfuss 'Diversifying without discriminating' (n 10); Garrison (n 98); Dreyfuss (n 7) 22–24; Barbosa *et al* (n 92) 109–12; Chon (n 7) (arguing generally for the use of TRIPS flexibilities in light of Articles 7 and 8 to incorporate a 'substantive equality' norm).

<sup>107</sup> Article 7 of TRIPS.

<sup>108</sup> Article 8 of TRIPS.

<sup>109</sup> *Ibid.*

<sup>110</sup> Dinwoodie & Dreyfuss 'Diversifying without discriminating' (n 10); Garrison (n 98); Dreyfuss (n 7) 22–24.

<sup>111</sup> See Dinwoodie & Dreyfuss 'Diversifying without discriminating' (n 10); Garrison (n 98).

envisioned by Dinwoodie and Dreyfuss. A WTO panel, in a dispute involving an exception permitting use of a patented invention during the patent term so as to facilitate regulatory review, did interpret Article 27 so as to allow 'bona fide exemptions to deal with problems that may exist only in certain product areas'.<sup>112</sup> This statement leaves open the question of what makes an exemption 'bona fide' (or, in Dinwoodie and Dreyfuss's terms, gives it a legitimate purpose). Particularly in light of Article 7, it might be a colourable argument that a WTO dispute resolution body should deem legitimate a purpose to promote innovation outside the intellectual property-based paradigm by, for example, providing an exemption from patent infringement for open source software.<sup>113</sup> It seems likely, however, that WTO panels and the WTO appellate body will take a much more narrow view of Article 27's anti-discrimination mandate unless they are given a road map to a more innovation-friendly approach, a point to which I return in Part IV.

Article 31 provides for *ex ante* compulsory licensing in certain circumscribed situations. Most importantly for present purposes, compulsory licensing is permitted only on a case-by-case basis and only if 'prior to such use, the proposed user has made efforts to obtain authorisation from the right holder on reasonable commercial terms and conditions and that such efforts have not been successful within a reasonable period'.<sup>114</sup> Because of these and other limitations, compulsory licensing under Article 31 is unlikely to play an important role in making room for follow-on innovation by users, which often does not lend itself to such case-by-case and *ex ante* licensing, especially if a cumbersome government approval procedure is required.

Exceptions intended to accommodate evolving modes of innovative activity under TRIPS would thus have to pass muster under Article 30. Article 30 states that:

Members may provide limited exceptions to the exclusive rights conferred by a patent, provided that such exceptions do not unreasonably conflict with a normal exploitation of the patent and do not unreasonably prejudice the legitimate interests of the patent owner, taking account of the legitimate interests of third parties.<sup>115</sup>

The most important interpretive questions for present purposes are probably the meanings of 'limited' and 'unreasonably'.<sup>116</sup> These terms raise crucial questions of baseline. Against what background standard is

<sup>112</sup> *Canada-Pharmaceuticals* (n 92).

<sup>113</sup> See Garrison (n 98) 76 (mentioning the possibility of such an exemption in passing).

<sup>114</sup> Article 31 of TRIPS.

<sup>115</sup> Article 30 of TRIPS.

<sup>116</sup> Article 30 of TRIPS.

the magnitude of an exception or its reasonableness to be measured? To make room for alternative modes of innovation, such as user innovation, these terms would have to be interpreted in light of the impact of the exception on innovation overall. This type of interpretation would be a far cry from what we have seen so far. There has been only one panel interpretation of Article 30, in the *Canada-Pharmaceuticals* dispute.<sup>117</sup> As discussed in more detail by Dreyfuss<sup>118</sup> and by Garrison,<sup>119</sup> the panel interpretation construed the requirement of a limited exception very stringently – based on the extent of impairment of each of the patentee’s exclusive rights, counted individually, and permitting only the most minor impairment of any of the rights.

Garrison has argued that the panel’s interpretation is inconsistent with pre-existing exemptions that were well accepted by TRIPS signatories and has limited precedential value in light of the re-affirmation of the importance of TRIPS objectives and principles after the Doha Declarations.<sup>120</sup> The reaffirmation of Articles 7 and 8 of TRIPS in the Doha Ministerial Declaration, though aimed primarily at issues of access to medicine, may also provide a hook for efforts to interpret TRIPS flexibilities expansively in view of other important interests such as accommodating alternative innovation paradigms.<sup>121</sup> It is thus possible that the interpretation of TRIPS flexibilities by WTO panels and the Appellate Body in the patent arena will evolve in light of ongoing concerns about the international intellectual property balance. Nonetheless, there is a long way to come from the approach of the *Canada-Pharmaceuticals* panel to the breadth of flexibility which might be needed to accommodate evolving modes of innovation that might optimally even replace intellectual-property-inspired innovation in some arenas.

As an example, consider the possibility of exemptions for making and use. As I have detailed in earlier work, exclusive rights to make and use may be counter-productive in some arenas in which user innovation is highly effective.<sup>122</sup> Nonetheless, TRIPS requires under Article 28 that patent infringement encompass not only unauthorised sales of a patented invention but unauthorised use and making of an invention.<sup>123</sup> Patent protection is less important as an incentive for user innovation than it is

<sup>117</sup> See note 92.

<sup>118</sup> (n 18) 245–247.

<sup>119</sup> (n 98) 18–33.

<sup>120</sup> *Ibid* 37, 41–42.

<sup>121</sup> See Doha Ministerial Declaration (n 8) at para 19. For an example of a more flexible approach to interpreting the very similar ‘three-step test’ in copyright law, see Declaration (n 92).

<sup>122</sup> See Strandburg (n 6) 483–89, 531–41; Strandburg (n 56).

<sup>123</sup> Article 28 of TRIPS.

for manufacturer-centred research and development.<sup>124</sup> Moreover, patent licensing is likely to be a costly and ineffective means to coordinate user innovation, which arises mostly not from pre-meditated research and development but as a side effect of use combined with ‘freedom to tinker’. Thus, user innovation may be best promoted in some fields by well-tailored use exemptions.<sup>125</sup> Because a use exemption would promote certain kinds of innovation by users, while decreasing incentives for innovation by certain types of sellers (those whose business models involve developing technology that is easily copyable by users)<sup>126</sup> the optimal menu of use exemptions will vary from place to place and from time to time.

An optimal international innovation regime would thus leave room for countries to adapt their use exemptions to their innovative strengths. However, it is highly questionable whether use exemptions of this sort would pass muster under Article 30 as either limited or reasonable. While it is true that research exemptions and exemptions for personal and non-commercial use are relatively common among TRIPS signatories (and hence presumably, though not definitely, acceptable under Article 30),<sup>127</sup> those exemptions are generally premised on a lack of significant commercial impact on patent holders. While the effects on *innovation* of a broader use exemption would be salutary if the exemption were well tailored, such an exemption might very well not be deemed ‘limited’ under Article 30 if it had significant *commercial* ramifications for individual patentees. Article 30 reflects the one-size-fits-all assumption that patenting is generally the best way to promote innovation in every technology. It will be difficult to stretch it to accommodate situations in which patent protection is simply not needed or is counter-productive.

Even where there are colourable interpretations of TRIPS that might permit a robust response to evolving innovation mechanisms, it seems unlikely, as discussed more fully by Dreyfuss,<sup>128</sup> that such interpretations will be forthcoming from WTO dispute resolution unless groundwork for taking broader innovation policy into account is laid. Part IV discusses the possibility that a WIPO exploration of these evolving innovation modes and their interaction with intellectual property can provide expert input, either through soft law mechanisms such as guidelines, best

<sup>124</sup> See Strandburg (n 6) 483–85. This does not mean, of course, that user innovators will necessarily eschew patent protection themselves if it is available under a strong IP regime. Though they may not need the IP incentive, user innovators may well find it privately beneficial to obtain exclusive rights.

<sup>125</sup> Ibid 531–39; Strandburg (n 56) 267–78.

<sup>126</sup> See Strandburg (n 6) 528–29.

<sup>127</sup> See Garrison (n 98) 44–49 (discussing pre-existing exceptions for non-commercial use and for experimentation); Exclusions from Patentable Subject Matter and Exceptions and Limitations to the Rights (n 19).

<sup>128</sup> Dreyfuss (n 18) 245–248.

practices, and model laws or through a more formal mechanism, to interpretation by WTO dispute resolution bodies and the TRIPS Council.

#### IV RE-IMAGINING WIPO: TOWARD AN ADMINISTRATIVE APPROACH TO CRAFTING A HEALTHIER GLOBAL INNOVATION REGIME

As noted above, there is a broader lesson in the rise of user innovation and other new innovation practices regarding the unpredictability of innovation and the wisdom of freezing in substantive intellectual property law requirements at the international level. Innovation is unpredictable in both its substance and its process. A rigidly locked-in international intellectual property regime, no matter how well tailored at its inception, is unlikely to serve innovation well in the long term. Given this article's diagnosis of the weaknesses of the present global innovation regime, especially as it relates to the optimum encouragement of user innovation, what is to be done? There are no easy answers and there is much to learn about current innovative paradigms and others which may emerge in the future as we seek to determine how best to achieve the right balance of public domain, proprietary 'knowledge goods' and private ordering approaches.

Rather than consider in more detail possible substantive approaches to improving on a narrow reading of TRIPS, this Part discusses possible institutional mechanisms, based on a global administrative law approach,<sup>129</sup> to facilitate ongoing reform and development of global innovation governance. To this end, I will discuss three potential roles for WIPO in moving toward a more satisfactory global innovation policy regime. At a minimum, WIPO should adopt an Innovation Policy Agenda (in rough analogy to its recently adopted Development Agenda).<sup>130</sup> A WIPO Innovation Policy Agenda would provide a focal point for global discourse and debate about evolving innovation approaches ranging from cumulative innovation in the information technology industry through user innovation and other present-day alternative innovation paradigms, to whatever new innovation models may develop in the future. Second, perhaps as an outgrowth of the proposed Innovation Policy Agenda, WIPO should play a greater role in

<sup>129</sup> See references cited at note 27 for general discussions of the theory of global administrative law.

<sup>130</sup> See Development Agenda documents (n 9). See also Halbert (n 14) for an overview of the history of WIPO with particular attention to development issues. Note that while the Development Agenda and a potential Innovation Policy Agenda might have some overlapping interests, neither can be subsumed in the other since the Development Agenda has strong concerns with interests of consumer access, while an Innovation Policy agenda would focus on changing innovation paradigms in the developed world as well as in developing countries.

interpreting TRIPS flexibilities and examining potential exceptions for TRIPS compliance through its relationship to the TRIPS Council. Third, and more ambitiously, we should consider the possibility of amending TRIPS to provide an exception authorisation broader than is available under Articles 27, 30, and 31, coupled with a more explicitly administrative role for WIPO in vetting proposed exceptions.

(1) *Why WIPO?*

As Rochelle Dreyfuss points out persuasively, TRIPS suffers from a law-making deficit because of the rarity and non-precedential character of WTO panel decisions.<sup>131</sup> This law-making deficit is responsible at least in part for the dearth of examples of states testing the limits of the flexibilities currently available in TRIPS.<sup>132</sup> The barriers to states adopting patent laws that test the TRIPS flexibilities are many, including, in many developing countries, the capacity and expertise to engage in cutting edge TRIPS interpretation and the political, financial, and human capital resources to risk challenges to those interpretations and to pursue disputes before the WTO.<sup>133</sup> This means that some other mechanism is needed to develop interpretations of TRIPS flexibilities that countries will be willing to adopt.

The WTO and the TRIPS Council are probably not the right places to make progress on a broader understanding of innovation policy in the first instance.<sup>134</sup> Though they may be capable of implementing a more nuanced approach to the TRIPS flexibilities (particularly with some input from WIPO), organisations steeped in a trade mandate are unlikely to have either the inclination or the expertise to make progress on a broader innovation agenda.

In part because of its recent experience with the Development Agenda, WIPO is arguably best placed to provide a forum for dialogue about how to use TRIPS flexibilities to accommodate concerns with broader innovation policy.<sup>135</sup> This is the case despite complex questions, discussed at

<sup>131</sup> Dreyfuss (n 18) 237–238.

<sup>132</sup> See Garrison (n 98) for a detailed study of patent infringement exceptions globally, demonstrating their limited scope. See also C M Ho 'A new world order for addressing patent rights and public health' (2007) 82 *Chicago-Kent Law Review* 1469 at 1501–02 for a discussion of the effects of bilateral Free Trade Agreements on signatories' flexibility.

<sup>133</sup> See, for example, Dreyfuss (n 7) 25–27; Yu (n 7) 387 (discussing some of the difficulties developing countries face in implementing aggressive interpretations of TRIPS flexibilities).

<sup>134</sup> See Dreyfuss (n 18) 256–257. But see K Raustiala 'Compliance and effectiveness in international regulatory cooperation' (2000) 32 *Case Western Reserve Journal of International Law* 387 at 435–38 for an argument in favour of an active role for the TRIPS Council as a primary forum for TRIPS interpretations.

<sup>135</sup> For an argument in favour of WIPO's greater involvement in promoting TRIPS flexibilities see, for example, Dreyfuss (n 18) 249–257. For general arguments in favour of WIPO taking a greater role in promoting a more balanced approach to intellectual property,



length by Dreyfuss, about how exactly to incorporate the results of WIPO deliberation into TRIPS interpretation under the WTO dispute settlement process.<sup>136</sup> WIPO has a standing committee structure for consideration of intellectual property-related issues, which has already been expanded to include a Committee on Development and Intellectual Property and could potentially be expanded to include a Committee on intellectual property as related to alternative innovation paradigms.<sup>137</sup> Under the auspices of such committees and otherwise, WIPO sponsors conferences, studies, and other forms of discourse involving scholars, NGOs, stakeholders, and country representatives. By these means, WIPO could conduct an ongoing analysis of how a variety of forms of innovative activity can be allowed to flourish together in a global governance framework.<sup>138</sup>

The relevance of innovation policy is not confined to any single international organisation, of course. Promoting a dialogue on these issues in a number of venues will ensure that a variety of perspectives are included. Nonetheless it seems desirable to have a focal point organisation around which various stakeholders can coalesce and participate in the debate. WIPO is a natural choice for this role in light of its expertise in intellectual property and its experience with the Development Agenda. WIPO's efforts in undertaking the Development Agenda, along with its recent inquiries into limitations and exceptions, demonstrate a growing willingness and capacity to consider ramifications of intellectual property outside of a narrow manufacturer-based paradigm.<sup>139</sup> Moreover, WIPO has recently come under new leadership and the new Director General, Francis Gurry, has recognised the distinction between promoting intellectual property and promoting the underlying goal of innovation.<sup>140</sup>

see, for example, Halbert (n 14) 283–84; J Boyle 'A manifesto on WIPO and the future of intellectual property' (2004) 9 *Duke Law & Technology Review* 1; Geneva Declaration on the Future of the World Intellectual Property Organisation, available at <http://www.cptech.org/ip/wipo/futureofwipodeclaration.pdf> (discussed in Halbert (n 14) at 273–76).

<sup>136</sup> Dreyfuss (n 18) 252–254.

<sup>137</sup> See <http://www.wipo.int/ip-development/en/agenda/cdip/>.

<sup>138</sup> See Okediji (n 15) 22, 42, discussing how WIPO and its predecessor organisations have used such avenues to affect substantive global IP norms in the past.

<sup>139</sup> One should not be too sanguine about this recent openness, of course. WIPO's history is as an organisation devoted to the promotion of intellectual property rights which has arguably been brought kicking and screaming to its present openness to development issues. See, for example, Halbert (n 14) 272–76 (discussing this history). Nonetheless, of the available institutions in the international intellectual property regime, WIPO seems the most likely to be both able and willing to pursue a broader innovation policy agenda.

<sup>140</sup> See Francis Gurry, Acceptance Speech, available at [http://www.wipo.int/about-wipo/en/dgo/dg\\_gurry\\_acceptance\\_speech\\_2008.html](http://www.wipo.int/about-wipo/en/dgo/dg_gurry_acceptance_speech_2008.html), in which Gurry said, among other things:

'In this regard, it is useful to remember that intellectual property is not an end in itself. It is an instrumentality for achieving certain public policies, most notably, through patents, designs and copyright, the stimulation and diffusion of innovation and creativity on which we have become so dependent, and, through trademarks, geographical indications and unfair compe-

WIPO efforts to build an understanding of and expertise in new and evolving innovation paradigms would also do double duty because of WIPO's role in developing and administering most intellectual property agreements other than TRIPS.<sup>141</sup> Crucially, WIPO has been engaged for some time in attempts to develop a Substantive Patent Law Treaty to harmonise further the international patent system.<sup>142</sup> Such efforts clearly raise red flags in light of the problems already visible in the substantive harmonisation reflected in TRIPS minimum standards for patent law. It is very important to ensure that a broader innovation policy perspective informs any discussions of further harmonisation.

Though it has clear institutional advantages as a focus for global innovation policy setting, WIPO has a chequered history with respect to alternative innovation mechanisms. Its Convention holds as its primary goal to 'promote the protection of intellectual property throughout the world'.<sup>143</sup> Moreover, in 2003 the United States government, reportedly as a result of objections from Microsoft and related corporate interests, pressured WIPO to rescind a plan to hold a meeting on open source approaches.<sup>144</sup> At that time Lois Boland, director of international relations for the U.S. Patent and Trademark Office, reportedly said that

open-source software runs counter to the mission of WIPO, which is to promote intellectual-property rights' and that '[t]o hold a meeting which has as its purpose to disclaim or waive such rights seems to us to be contrary to the goals of WIPO.<sup>145</sup>

Times seem to be changing, though, as a result of efforts from NGOs supportive of open source approaches and along with WIPO's adoption of the Development Agenda. Though a specific reference to open source software was removed from the approved version, the Development Agenda proposals agreed upon in 2007 include calls to 'deepen the analysis of the implications and benefits of a rich and accessible public domain', 'initiate discussions on how . . . to further facilitate access to knowledge and technology . . . and to foster creativity and innovation',

tition law, the establishment of order in the market and the countering of those enemies of markets and consumers: uncertainty, confusion and fraud. In the end, our debates and discussions are about how intellectual property can best serve those underlying policies: whether modifying the international framework will enhance or constrain innovation and creativity and contribute to their diffusion, and whether it will add confusion, rather than clarity, to the functioning of the market.'

<sup>141</sup> See <http://www.wipo.int/treaties/en/> for a list of WIPO-administered intellectual property treaties.

<sup>142</sup> See Reichman & Dreyfuss (n 25) for a discussion of and critique of WIPO's efforts in this regard.

<sup>143</sup> Convention (n 14).

<sup>144</sup> See Krim (n 16).

<sup>145</sup> Ibid.

‘request WIPO to undertake . . . studies to assess the economic, social and cultural impact of the use of intellectual property systems’ and ‘exchange experiences on open collaborative projects such as the Human Genome Project as well as on IP models’.<sup>146</sup> These proposals provide hooks for consideration of innovation paradigms beyond the intellectual property regime. Moreover, new paradigms for innovation cut across the traditional divide between developing and developed countries, splitting the perspective of powerful developed country actors in new ways.

WIPO is also a good choice as a locus for a broader innovation policy agenda because TRIPS itself contemplates the possibility that TRIPS interpretation might be influenced by WIPO. Thus, Article 68 stipulates that the TRIPS Council, in its activities in monitoring the agreement, ‘may consult with and seek information from any source it deems appropriate’ and that ‘[i]n consultation with WIPO, the Council shall seek to establish, within one year of its first meeting, appropriate arrangements for cooperation with bodies of that Organization’.<sup>147</sup> Though the metes and bounds of cooperation set out in the subsequently-adopted formal agreement between WIPO and the TRIPS Council are narrow and primarily technical, the language of Article 68 implies that the TRIPS Council may consult with WIPO more broadly.<sup>148</sup> Thus, though the current relationship between WIPO and TRIPS does not warrant explicit deference to WIPO interpretations of TRIPS by WTO dispute resolution bodies,<sup>149</sup> it certainly places WIPO in a position to begin a dialogue over TRIPS interpretation and for the TRIPS Council to take WIPO recommendations and interpretations seriously into account in light of its innovation policy expertise. Moreover, while one may question WIPO’s capacity and willingness to take a broader view of innovation policy in light of its high protectionist history and IP-focused mandate, this is an opportune time for a re-focusing of WIPO’s mission, given its weakened role in the global IP system after TRIPS.

## (2) *An Innovation Policy Agenda at WIPO?*

An important step toward incorporating consideration of evolving innovation paradigms into the global debate about intellectual property law would be for WIPO to develop and adopt an Innovation Policy Agenda, along the lines of the recently-adopted Development Agenda, which would take a wide view of promoting innovation in the long term. Under

<sup>146</sup> Development Agenda (n 22).

<sup>147</sup> Article 68 of TRIPS.

<sup>148</sup> Agreement between the World Intellectual Property Organisation and the World Trade Organisation (December 22, 1995), available at [http://www.wipo.int/treaties/en/agreement/pdf/trtdocs\\_wo030.pdf](http://www.wipo.int/treaties/en/agreement/pdf/trtdocs_wo030.pdf).

<sup>149</sup> Dreyfuss (n 18) 252.

the auspices of an Innovation Policy Agenda, WIPO could provide a forum for vetting interpretations of TRIPS flexibilities and proposals for national legislation to accommodate a broader approach to innovation.

Very recently, WIPO has begun to take steps toward recognising the importance of user innovation. For example, a list of 'issues for further elaboration and discussion' approved at the June 2008 meeting of the WIPO Standing Committee on Patents includes 'alternative models for innovation', 'limitations to the rights' and 'research exemption'.<sup>150</sup> At the July 2008 meeting of the WIPO Committee on Development and Intellectual Property the Electronic Frontier Foundation presented a statement in which it suggested that 'WIPO could also provide Member States with information about the benefits for education and scientific research of Open Innovation and User Driven Innovation models' and that these 'new theories of innovation' 'have the potential to radically reshape collaboration and innovation in the developing world'.<sup>151</sup> These recent activities lay groundwork for a more formal WIPO Innovation Policy Agenda.

The development of an Innovation Policy Agenda at WIPO would provide a focal point for various stakeholders with interests in emerging innovation paradigms, to form coalitions with others, such as many information technology firms, that find the one-size-fits-all approach of TRIPS constraining. Thus, participants in alternative innovation approaches might make use of the network of connections which link them (particularly those in the open source software community) to information technology sector stakeholders who are interested in ensuring that any interpretation or amendment of TRIPS adequately accounts for the intellectual property balance required for complex innovation.<sup>152</sup> In this respect, an Innovation Policy Agenda would provide a point of coalescence for these parties to mobilise their resources to create, deploy, and link nodes so as to affect the process of 'nodal governance' that will no doubt be involved in the adaptation of TRIPS to the needs of the information technology sector.<sup>153</sup> Over time, these changes are likely to be made both directly, by influencing the development of interpretive machinery at WIPO or the WTO, and indirectly, by influencing the

<sup>150</sup> Annex, Summary By the Chair (n 19). See Strandburg (n 6) for an argument that researchers are user innovators of research tools and methods.

<sup>151</sup> EFF Statement to WIPO Committee on Development and Intellectual Property, Second Session, 7–11 July 2008, available at <http://lists.essential.org/pipermail/a2k/2008-July/003378.html>.

<sup>152</sup> See, for example, S O'Mahony & B Bechky 'Boundary organizations: enabling collaboration among unexpected allies' *Administrative Science Quarterly* (forthcoming) (discussing the important interactions between information technology companies and the open source community).

<sup>153</sup> See Burris *et al* (n 12) 52–53 for a similar suggestion in the context of public health and access.

evolution of domestic intellectual property law, which will in turn influence the interpretation of TRIPS.

The political economy already makes it likely that TRIPS flexibilities will come to be more widely deployed in recognition of the needs of the information technology industry. By obtaining a voice in the debate, practitioners of user innovation can try to ensure that their perspectives are reflected in resulting interpretations and any eventual TRIPS amendments. Advocates for user innovation should also deploy their networks of contacts in developing countries and in organisations serving developing country interests to emphasise the more direct role that user innovation plays and could play in development.<sup>154</sup> A WIPO Innovation Policy Agenda would facilitate this involvement and would bring together a different cross-section of stakeholders than would the peripheral consideration of these issues under the Development Agenda.

(3) *A notice and comment approach to WIPO interpretations of TRIPS flexibilities?*

Particularly as WIPO develops broader innovation policy expertise pursuant to an Innovation Policy Agenda or otherwise, it might begin to play a more important role in interpreting TRIPS flexibilities and vetting possible exceptions for compliance with TRIPS. As Dreyfuss argues, the WTO Dispute Settlement process is a poor mechanism to provide authoritative interpretations of amorphous terms in the agreement that might be interpreted so as to provide some flexibility, such as 'limited', 'normal exploitation', 'without discrimination' and so forth.<sup>155</sup> This is in part because dispute settlement proceedings are rare and in part because the panels are unqualified to make innovation policy. Dreyfuss argues that an administrative mechanism is needed to give content to these terms in light of the purposes of intellectual property in general and of the purposive statements incorporated in TRIPS itself.<sup>156</sup> She then suggests ways in which the existing intellectual property administrative bodies – primarily WIPO and the TRIPS Council – might take advantage of WIPO's expertise in intellectual property policy.<sup>157</sup>

My proposal here piggybacks on her suggestions. The availability of alternative mechanisms for innovation only reinforces the need for an administrative approach. The infrequent forays into TRIPS interpretation of WTO dispute resolution bodies are a completely ineffective mechanism for considering and vetting TRIPS exceptions under Article 30 once one moves away from the trade-focused seller innovator para-

<sup>154</sup> See, for example, Douthwaite *et al* (n 76); Gupta (n 76).

<sup>155</sup> Dreyfuss (n 18) 244–248.

<sup>156</sup> *Ibid* at 20.

<sup>157</sup> *Ibid* 20–34.

digm under which it is assumed that exceptions to rigorous enforcement of patent protection should be few and far between. If TRIPS flexibilities are to play a positive role in promoting innovation and ensuring that the intellectual property paradigm does not crowd out other innovation models, then it is critical to have an ongoing discussion not only of whether proposed exceptions would pass muster under TRIPS, but also of which exceptions make sense as a matter of innovation policy under a variety of circumstances. A broader view of the goal of TRIPS as promoting innovation (rather than intellectual property protection *per se*) means that exceptions should be not only tolerated but also promoted under certain circumstances.

WIPO is well placed to provide a forum for vetting potential exceptions that might be implemented in national legislation. Under the current relationship between WIPO and the WTO, especially because WIPO and the WTO have somewhat different memberships, WIPO interpretations would not be binding on WTO panels.<sup>158</sup> Nonetheless, even under the current arrangement, a well-reasoned WIPO analysis would provide persuasive evidence of how a large number of member states view the TRIPS provisions and also of the perspective of an organisation with expertise in the area of innovation policy.

If WIPO begins to take a greater role in TRIPS interpretation, either as a persuasive matter or, as discussed in the next section, as part of an amended TRIPS approach to exceptions, it will be important to deal with traditional administrative law issues of transparency, legitimacy, and voice.<sup>159</sup> WIPO consideration of potential exceptions should incorporate the views not only of intellectual property stakeholders, developing countries, and potential consumers of new inventions, but also of participants in and advocates for less traditional innovative practices, including user innovation. Historically, WIPO has been very unwilling to permit participation from diverse constituencies.<sup>160</sup> However, its experience with the Development Agenda and, as Halbert argues, with the issue of traditional knowledge, appears to be opening it up to more expansive participation.<sup>161</sup>

Openness to input from innovators will be critical to the success of an Innovation Policy Agenda. Once one acknowledges the importance of new and evolving models of innovation, it becomes essential to combine the expertise of an organisation like the re-imagined WIPO with a means of tapping into the global innovation grassroots. An ear to the ground would complement intellectual property expertise in informing a flexible

<sup>158</sup> Ibid 26.

<sup>159</sup> See references at note 12 for general discussions of these issues in the global context.

<sup>160</sup> See Halbert (n 14) 271–76.

<sup>161</sup> Ibid 271–80.



and responsive global system. With this in mind, WIPO should open up its deliberations on a regular basis to representatives of those involved in user innovation, as it is doing with indigenous communities in its deliberations regarding traditional knowledge.<sup>162</sup>

Beyond a more inclusive approach to NGOs, WIPO should consider adopting an accessible and open 'notice and comment' approach to vetting potential TRIPS exceptions.<sup>163</sup> The same Internet technology that is partly responsible for the recent surge in new innovative practices provides a mechanism for implementing a truly global notice and comment procedure.<sup>164</sup> WIPO conceivably could set up an online forum for proposing and discussing TRIPS exceptions.<sup>165</sup> Interested parties, including states, industry actors, NGOs, and even individuals could submit comments about specific proposals for exceptions, interpretations of the TRIPS non-discrimination requirement, and so forth. To draw out serious and well thought out proposals, each proposal might be required to include an 'innovation impact assessment' – arguments as to why the proposed exception or interpretation would promote innovation. Online rating or tagging systems could also be considered to weed out spurious proposals and comments or to group similar comments.<sup>166</sup>

An open notice and comment procedure would provide a means to solicit a variety of perspectives which could inform WIPO and give it access to the distributed expertise about innovation which is present at the global grassroots. WIPO could then produce reasoned interpretations of TRIPS in light of a wide range of input. Such reasoned interpretations could be influential at the WTO, as already discussed. Indeed, an open process of notice and comment resulting in a reasoned interpretation of TRIPS might go far to alleviate the legitimacy problems with WTO reliance on WIPO interpretations raised by Dreyfuss.<sup>167</sup> TRIPS provides that the TRIPS Council 'may consult with and seek information from any source it deems appropriate' in conjunction with its monitoring

<sup>162</sup> See Halbert (n 14) 276–80.

<sup>163</sup> See Kingsbury *et al* (n 12) 34–36 (discussing the relatively new phenomenon of adoption of notice and comment procedures by international bodies).

<sup>164</sup> Of course, not all members of constituencies importantly affected by innovation policy would have direct access to such an online forum. However, Internet access is becoming more and more widespread, civil society NGO's would certainly have access, and, in any event, any procedure using the Internet to permit direct involvement by citizens worldwide in commenting on innovation policy would be vastly more inclusive than anything going on at WIPO at present.

<sup>165</sup> This proposal is reminiscent of Noveck's 'peer to patent' approach to patent examination, which is being tested at the USPTO (n 29), or of Ho's proposal for a response to biopiracy and patent bioethics issues (n 29) at 532–40.

<sup>166</sup> See, for example, Noveck 'Peer to patent' (n 29) 147–49.

<sup>167</sup> Dreyfuss (n 18) 252.

responsibilities.<sup>168</sup> The more transparently vetted WIPO interpretations of TRIPS are, the more appropriate it would seem to be to rely on them.

Of course, as discussed in Part III, there are limits to the extent to which the provisions of TRIPS, which were, after all, intended to be limiting with regard to patentability exceptions, can be stretched to accommodate the needs of a changing innovation regime. The advantages of having ongoing input and proposals for how states might implement the TRIPS flexibilities in light of an evolving innovation environment would extend beyond providing more informed and well-thought-out interpretations of the current provisions of TRIPS. Proposals that were rejected in the TRIPS/WIPO interpretive process, yet were accompanied by persuasive innovation impact assessments, would generate suggestions and support for possible amendments to TRIPS in light of changing technology and practice. For example, as discussed in Part III, there may be circumstances which would make relatively broad exceptions to the exclusive right to use an invention socially beneficial in particular technological fields. Some such exemptions (for example, the widely adopted research use exemptions) are likely TRIPS-compliant under Article 30. But other potentially beneficial restrictions on the exclusive use right might not comply with even a flexible reading of TRIPS. An open interpretive forum would provide advocates of user innovation with an opportunity to make the case for amending TRIPS to permit use exemptions to nurture this innovative practice.

The availability of such a global forum for discussion and evaluation of proposed TRIPS exceptions and flexibilities would also feed back into debates about exceptions at the national level and would likely be helpful in giving political legitimacy to advocates of more flexible national intellectual property regimes.

(4) *Amending TRIPS to provide a more formal administrative role for WIPO?*

While the adoption of an Innovation Policy Agenda at WIPO and the establishment of a WIPO forum for vetting TRIPS flexibilities would be steps in the right direction, such an *ad hoc* approach to TRIPS flexibilities may not be enough to make positive room for evolving innovation practices. Because of the complexity and continuing evolution of the innovation environment this may be an arena in which a more explicit administrative regime is needed at the global level.<sup>169</sup>

<sup>168</sup> Article 68 of TRIPS.

<sup>169</sup> As Dreyfuss (n 18) notes, the general framework that would be involved in explicit WTO reliance on expert international organizations to provide standards is not new (at 252). She also notes, however, that such an approach might be risky at the moment since WIPO's institutional identity is in a period of upheaval (253). Most likely a change of the sort I advocate here would

Here I propose a more far-reaching change than could be accomplished simply by having WTO dispute resolution bodies take WIPO analysis into account informally in evaluating TRIPS exceptions. The proposal would be to amend the TRIPS agreement to shift more of the burden for assessing the innovative benefits of TRIPS exemptions or of differential treatment of different technologies to an explicitly recognised administrative process which would not require the very difficult step of treaty amendment every time new innovative paradigms emerge.<sup>170</sup> To accomplish this, a general provision permitting exceptions ‘reasonably intended to promote innovation and not to restrain trade’ would be substituted for Article 30.<sup>171</sup> The amendment should also clarify that Articles 27 and 28 are subject to such exceptions. As an expert innovation policy agency, WIPO would be given the formal responsibility for vetting exceptions to see whether they are ‘reasonably intended to promote innovation and not to restrain trade’. WTO dispute resolution would then defer, at least to some degree, to WIPO’s evaluations.

Contemplating a more formal role for WIPO in evaluating TRIPS flexibilities raises at least two important issues: first, there is the question of the extent of deference which WTO dispute resolution bodies should give to WIPO interpretations of the proposed ‘reasonably intended to promote innovation and not to restrain trade’ requirement.<sup>172</sup> Rather than give even a re-imagined WIPO final authority over the validity of TRIPS exceptions, there are several reasons to prefer an intermediate level of deference. While a re-imagined WIPO would have a broad mandate, including, importantly, the current Development Agenda, there are a number of other international organisations with portfolios that touch on innovation policy. It would be reasonable to permit parties involved in dispute resolution proceedings to bring arguments against WIPO’s interpretations based on the views of organisations with expertise in areas other than innovation that are related to a particular dispute. Indeed, as noted by Dreyfuss, the WTO itself has a trade agenda which

have to follow a period of experience with more informal input from WIPO under the auspices of an Innovation Policy Agenda.

<sup>170</sup> See Okediji (n 15) discussing the potential for WIPO to play the role of an expert agency. Okediji concludes that the WTO is the more appropriate forum for IP norm-setting in the final instance. The proposals here are not necessarily inconsistent with WTO dominance in final decisionmaking. The important point is that WIPO is well placed to formulate and vet innovation policy proposals even through final decisionmaking power undoubtedly will be vested in the WTO because of its enforcement powers.

<sup>171</sup> Here I address only the patent provisions of TRIPS. Similar changes to the other sections of TRIPS should also be considered.

<sup>172</sup> Stuart Benjamin and Arti Rai have recently considered a similar issue in connection with their proposal for an agency with broad innovation policy responsibility in the United States. S M Benjamin and A K Rai ‘Innovation and its reform: a regulatory perspective’ (2008) 76 *George Washington Law Review* (forthcoming).

may not always align with the promotion of innovation.<sup>173</sup> It is only reasonable to leave room for WTO dispute resolution panels to take specifically trade-focused rationales into account.

Second, there are good reasons, particularly in the international context in which the legitimacy of an administrative approach may be questioned, to avoid focusing too much power in one particular international actor (indeed, this is part of the problem with the current configuration of TRIPS). Giving more responsibility for interpreting TRIPS to a re-imagined WIPO raises reasonable concerns about agency capture by powerful developed country interests. These concerns are mitigated somewhat in the context of new paradigms of innovation (in contrast to the situation with respect to the Development Agenda, for example) because, as we have seen in the past few years in the disputes between the pharmaceutical industry and much of the information technology industry, the evolution of innovation paradigms can set even powerful developed country interests at odds with one another. Nonetheless, it would be best to avoid concentrating too much power over innovation policy in any one organisation so as to avoid creating an overly attractive target for capture. Dividing power facilitates the ability for weaker players to have influence through nodal governance and regime shifting.

There is thus a need to balance the advantages of innovation policy expertise and a reliable institutional framework for vetting proposed exceptions against the disadvantages of concentrated power. An intermediate level of deference, in which WTO dispute resolution panels are required to articulate specific reasons for rejecting any exception that has survived WIPO's vetting procedure, might be appropriate. If a panel were to reject WIPO's determination as to whether a particular exception promotes innovation, the WTO Appellate Body would be empowered to reweigh the WIPO analysis against the panel's reasoning.

WIPO evaluation of proposed exceptions would provide states with a degree of certainty in enacting them even if the dispute resolution procedure retained its role as the finally binding interpreter. Because formal disputes under the WTO are rare and WIPO's analysis would be ongoing, WIPO's interpretations would likely be very influential. This would be especially the case if WIPO evaluations paved the way for broad adoption of exceptions by states, which might then constitute 'subsequent practice in the application of the treaty' under Article 31 of the Vienna Convention and hence inform subsequent interpretations of TRIPS.<sup>174</sup>

<sup>173</sup> Dreyfuss (n 18) 253.

<sup>174</sup> Article 31(3)(b) of Vienna Convention on the Law of Treaties.

## V CONCLUSIONS

We stand at what is probably only the beginning of a flowering of new and emergent innovation practices facilitated by developments in communication technology, yet we confront these evolving practices with a rigid and outdated international innovation policy regime. The main message of this article is that it is high time to consider seriously both how to accommodate user innovation and other alternative practices that are already with us and how to avoid repeating the mistake of institutionalising any particular approach to innovation in a difficult to change international instrument. In doing so, we must also meet the need for sufficient harmonisation to allow us to reap the benefits of globally distributed and diverse innovative practices.

In this article I suggest that we should seek to deploy an administrative-type approach to cope with emerging innovation paradigms. To that end, I propose that WIPO be re-imagined as a broad-based innovation policy organisation, at a minimum through the development and adoption of an Innovation Policy Agenda and perhaps eventually through amendment of TRIPS to permit WIPO to serve as an interpretive 'agency' under a more formal administrative approach to intellectual property law exceptions. Primarily, this article seeks to encourage an expanded dialogue in global innovation policy which takes into account emerging innovation paradigms.