THE LEAHY-SMITH AMERICA INVENTS ACT

A New Paradigm for International Harmonisation?

The Leahy-Smith America Invents Act makes significant changes in US patent law. Among other things, it moves the US closer to a first-to-file system. As such, the Act adopts a new mechanism for international harmonisation: through convergence rather than top-down imposition of international obligations. This system has much to recommend it. It preserves sovereign authority and democratic values, and gives states an opportunity to experiment with responses to new technologies and organisational changes in the patent industries. After describing the Leahy-Smith America Invents Act and the advantages of convergence, the article discusses institutional developments that can facilitate this mode of harmonisation.

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1 Since at least the late 19th century, developed countries have sought to negotiate a comprehensive international instrument to harmonise national patent laws. First in Paris, later in Geneva and then Uruguay, and now in varying locations from Melbourne to Dallas, these attempts have largely faltered or failed. In the last year, however, a legislative initiative in the US – the Leahy-Smith America Invents Act[1] ("AIA") – and proposals in the European Union ("EU") for the creation of unitary patent protection and a unified patent court[2] suggest that the time has come to consider a new paradigm: harmonisation through the

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1 Leahy-Smith America Invents Act Pub L No 112-29, 125 Stat 284 (2011) (US) ("America Invents Act"); codified in scattered sections of Patents 35 USC (US).

2 European Commission, "Commission Proposes Unitary Patent Protection to Boost Research and Innovation", press release (IP/11/470) (13 April 2011) <http://europa.eu/rapid/pressReleasesAction.do?reference=IP/11/470> (accessed 5 June 2012); Council of the European Union, *Draft Agreement on a Unified Patent Court and Draft Statute* (13551/11) (2 September 2011) <http://register.consilium.europa.eu/pdf/en/11/st13/st13751.en11.pdf> (accessed 5 June 2012).

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convergence of national and regional legislation, administrative action and judicial interpretation.

2 Reflective of the "new world order" governance structure described by Anne-Marie Slaughter,[3] and mirroring the strategy adopted by competition (antitrust) authorities through the establishment of the International Competition Network ("ICN"),[4] bottom-up harmonisation has many advantages over the top-down methodology of treaty-making. Convergence can achieve the efficiency objectives that patent offices and patent holders have long sought, yet preserve legitimacy and democratic values, because it allows countries to exercise sovereign authority to advance local interests when domestic concerns outweigh the benefits of global standardisation. Just as important, harmonisation through convergence operates by demonstration – by experience revealing the advantages of a particular approach – rather than obligation by using market leverage and geopolitical power to mandate specific results. With convergence, a state can, as Justice Louis Brandeis famously proposed in an analogous context, "serve as a laboratory, and try novel social and economic experiments without risk to the rest".[5] With appropriate institutional support, other nations can then be encouraged to adopt those approaches that prove effective.

3 This article begins with a short history of the attempts to create a unified global patent regime. It then explains why harmonisation is so important in the patent sphere and why scepticism about a top-down approach is warranted. The article goes on to describe the harmonising features of the AIA and shows how these provisions can be augmented through administrative and judicial interpretation attentive to global concerns. The article concludes with an analysis of the institutional support necessary to make the convergence approach work and suggests why it is superior to ongoing efforts to achieve deep harmonisation through international lawmaking.

I. A short history of multilateral harmonisation efforts

4 As is well known, the move to create an international patent system began in the 19th century, with the adoption of the Paris Convention for the Protection of Industrial Property ("Paris Convention") in 1883.[6] Part of an effort (along with the Berne

3 Anne-Marie Slaughter, *A New World Order* (Princeton University Press, 2007); Anne-Marie Slaughter, "The Real New World Order" (1997) 76 *Foreign Affairs* 183.

4 Eleanor M Fox, "Linked-In: Antitrust and the Virtues of a Virtual Network" (2009) 43 Int'l Lawyer 151.

5 *New State Ice Co v Liebmann* 285 US 262 at 311 (1932) (Brandeis J, dissenting).

6 Paris Convention for the Protection of Industrial Property (20 March 1883) 21 UST 1583, 828 UNTS 305 (last revised at Stockholm 14 July 1967).

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Convention for the Protection of Literary and Artistic Works[7] ("Berne Convention")) to deal globally with all of the principal intellectual property ("IP") regimes, the Paris Convention made two key contributions to international patent law. First, the Paris Convention guaranteed that each Paris Union member would accord to nationals of other Paris Union countries the same treatment it provided to its own citizens.[8] Second, the Paris Convention facilitated serial protection by assigning to all successive patent applications priority based on the date on which the first application was filed (so long as later applications were filed within a year).[9] The negotiators expected that future negotiations would expand upon these provisions, and negotiations did indeed continue. Formally, in 1893, the United International Bureaux for the Protection of Intellectual Property ("BIRPI") was founded to administer global copyright, trade mark and patent matters and host further deliberations. In 1967, BIRPI's functions were transferred to the World Intellectual Property Organization ("WIPO"), a specialised agency of the UN, located in Geneva.[10]

5 In 1970, WIPO oversaw another major global effort: the adoption of the Patent Cooperation Treaty[11] ("PCT"). However, like the Paris Convention, that instrument was largely procedural: it established a central system for applying for, and preliminarily examining, patent applications. The PCT thereby reduced the burden of dealing with patent applications, but because substantive harmonisation remained elusive, it could not eliminate the need for repetitive prosecutions and duplicative costs.

6 Substantively, things changed quite dramatically toward the end of the 20th century, when IP was reconceptualised as a trade issue and brought into the Uruguay Round of the negotiations on the General Agreement on Tariffs and Trade ("GATT"). When the World Trade Organization ("WTO") was created, the Agreement on Trade-Related Aspects of Intellectual Property Rights ("TRIPS Agreement") became part of the package of mandatory obligations.[12] One hundred and fifty-five nations now belong to the WTO, and they all must adhere to the TRIPS Agreement standards for patent protection. These appear to be fairly comprehensive. Initially, some observers went so far as to call

7 See also the Berne Convention for the Protection of Literary and Artistic Works (9 September 1886) 1161 UNTS 3 (last revised at Paris 24 July 1971).
8 Paris Convention for the Protection of Industrial Property Art 3.
9 Paris Convention for the Protection of Industrial Property Art 4.
10 Convention Establishing the World Intellectual Property Organization (14 July 1967) 21 UST 1749, 848 UNTS 3.
11 (19 June 1970) 28 UST 7645, 1160 UNTS 231.
12 Marrakesh Agreement Establishing the World Trade Organization, Annex 1C: Agreement on Trade-Related Aspects of Intellectual Property Rights (15 April 1994) 1869 UNTS 299, 33 ILM 1197.

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the TRIPS Agreement a patent code and assumed that the WTO Dispute Settlement Body ("DSB") would fill any remaining gaps in coverage.[13] Under the TRIPS Agreement, patents must be available in all fields of technology for new advances, provided they involve an inventive step and are capable of industrial application.[14] Patents must subsist for 20 years and create exclusive rights to prevent third parties from making, using, selling, offering to sell and importing the invention within and into the territory of member states.[15] The TRIPS Agreement specifies in considerable detail the flexibilities countries enjoy for issuing compulsory licensing or making other exceptions to patent rights, and they are quite narrow.[16]

7 However, as subsequent actions by WTO member states and adjudication of complaints by the DSB have demonstrated, the TRIPS Agreement, in fact, leaves considerable room for national variation. For example, the TRIPS Agreement does not define the height of the inventive step. Thus, India (home of a powerful generic drug industry) has made it quite high, disallowing patents on most second uses of known compounds[17] – even though a right to second-use patents is well recognised in developed countries.[18] Similarly, the TRIPS Agreement does not define what counts as an industrial application, allowing the US and the EU (indeed, the entire membership of the European Patent Convention ("EPC")) to disagree on such matters as the protection of business methods and computer programmes.[19] Furthermore, because the TRIPS Agreement does not set a priority rule, it allows each country

13 Peter K Yu, "Currents and Crosscurrents in the International Intellectual Property Regime" (2004) 38 Loy LA L Rev 323 at 442, where it was said that "[b]y the mid-1990s, this patchwork of national [intellectual property] laws and multilateral conventions had given way to a supranational code called the TRIPS Agreement"; Kamal Saggi & Joel P Trachtman, "Incomplete Harmonization Contracts in International Economic Law: Report of the Panel, *China – Measures Affecting Protection and Enforcement of Intellectual Property Rights*, WT/DS362/R, Adopted 20 March 2009" (2011) 10 *World Trade Review* 63.

14 Agreement on Trade-Related Aspects of Intellectual Property Rights Art 27.1.

15 Agreement on Trade-Related Aspects of Intellectual Property Rights Arts 33 and 28.

16 Agreement on Trade-Related Aspects of Intellectual Property Rights Arts 31 and 30.

17 Patents Act 1970 (Act No 30 of 1970) s 3(d) (India), amended by the Patents (Amendment) Act 2005 (Act No 15 of 2005) (India).

18 See, *eg*, Rebecca S Eisenberg, "The Problem of New Uses" (2005) 5 Yale J Health Pol'y & Ethics 717.

19 Compare *Bilski v Kappos* 130 S Ct 3218 (2010) and *Diamond v Diehr* 450 US 175 (1981) with Art 52.1(c) of the European Patent Convention ("EPC") (5 October 1973) 1065 UNTS 199 (as amended 13 December 2007). The EPC includes countries outside of the European Union ("EU"). For convenience of exposition, reference is limited to the countries bound by the decisions of the Court of Justice of the European Union, hence EU is used throughout.

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to determine whether a patent should be awarded to the first creator to file an application or the first party to invent.[20]

8 With considerable disagreement remaining, this century has witnessed ongoing efforts in WIPO to pursue more thorough – so-called "deep" – harmonisation. That effort, however, split into two components. The Patent Law Treaty ("PLT"), adopted in 2000, further regularised the application process.[21] The other part was aimed at substantive harmonisation. However, despite repeated attempts, the Substantive Patent Law Treaty ("SPLT") never came to fruition.[22] Instead, the proponents of harmonisation have adopted a strategy that Laurence Helfer has called "regime shifting":[23] the movement of negotiations to frameworks with differing power distributions; in this case, to bilateral agreements, such as the EU economic partnership agreements and the US free trade agreements, and to plurilateral arrangements, including the Anti-Counterfeiting Trade Agreement ("ACTA") and the Trans-Pacific Partnership Agreement[24] ("TPP"). Negotiations concerning these instruments attempt to achieve more intensive harmony, but they have also proved more intensively controversial. ACTA, for example, is under severe attack in Europe,[25] and the TPP is inspiring demonstrations in the cities where negotiators meet (most recently, Dallas, Texas; San Diego, California; and Melbourne, Australia).[26] Negotiations of these agreements take place almost entirely

20 Compare Patents 35 USC (US) § 102 (1952) with Art 54 of the European Patent Convention.

21 Patent Law Treaty (1 June 2000) 39 ILM 1047.

22 See World Intellectual Property Organization, International Bureau, *Draft Substantive Patent Law Treaty* (SCP/5/2) (4 April 2001) <http://www.wipo.int/edocs/mdocs/scp/en/scp_5/scp_5_2.pdf> (accessed 11 July 2012).

23 Laurence R Helfer, "Regime Shifting: The TRIPS Agreement and New Dynamics of International Intellectual Property Lawmaking" (2004) 29 Yale J Int'l L 1.

24 European Commission, Economic Partnerships <http://ec.europa.eu/trade/wider-agenda/development/economic-partnerships/> (accessed 5 June 2012); Office of the US Trade Representative, Free Trade Agreements <http://www.ustr.gov/trade-agreements/free-trade-agreements> (accessed 5 June 2012); Anti-Counterfeiting Trade Agreement. Available at <http://www.mofa.go.jp/policy/economy/i_property/pdfs/acta1105_en.pdf> (accessed 30 October 2012); Office of the US Trade Representative, "Outlines of the Trans-Pacific Partnership Agreement", press release (November 2011) <http://www.ustr.gov/about-us/pressoffice/fact-sheets/2011/november/outlines-transpacific-partnership-agreement> (accessed 5 June 2012).

25 See, *eg*, International Trade Committee, "ACTA: Reject and Maybe Renegotiate, Says European Parliament Rapporteur", *European Parliament News* (25 April 2012) <http://www.europarl.europa.eu/news/en/pressroom/content/20120423IPR43742/html/ACTA-reject-and-maybe-renegotiate-says-European-Parliament-rapporteur> (accessed 6 June 2012).

26 See generally Peter K Yu, "Six Secret (and Now Open) Fears of ACTA" (2011) 64 SMU L Rev 975; for the locations of all the Trans-Pacific Partnership negotiations, see Office of the US Trade Representative, Trans-Pacific Partnership, Round Updates <http://www.ustr.gov/tpp> (accessed 30 October 2012); for a sense

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in secret, and in each case, harmonisation has been strictly a matter of escalating to more rigorous standards of protection, rather than finding the least common denominator.

II. The benefits of harmonisation

9 It is not hard to understand why the urge to harmonise has persisted for so long and has continued despite repeated failures. A harmonised system – particularly, a system harmonised to high levels of protection – would arguably maximise incentives to innovate because it would clarify rights and permit rightholders to set the price of their knowledge products in world markets.[27] It would thus eliminate the externalities said to be imposed when the citizens of one country freely copy works developed (at considerable expense) elsewhere.[28] A single, global level of protection would also direct inventive efforts to the locations where they are best accomplished, thereby capturing comparative advantages and furthering the goals underlying free trade. Furthermore, as knowledge products come to constitute an ever larger share of the economy, as global trade grows and manufacturing increasingly moves south to places where labour is cheap, it becomes imperative for the global north to recover the contribution that its ingenuity adds to manufactured goods.

10 The bottom line is that patents are necessary almost everywhere: in the countries where technological advances are made, where products and processes incorporating those advances are implemented and in countries where the products are purchased and used. Servicing this need is expensive.[29] The median cost of prosecuting a patent in the US is in the range of US$7,000 to US$15,000. Costs may be somewhat lower elsewhere and successive applications can cost less than the first one, but these fees mount quickly. For example, the US Patent and Trademark Office ("USPTO") recently estimated that for a small biotechnology company, it would cost over US$100,000 to use a PCT application to enter the national stage in Japan, Korea, Europe,

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of the demonstrations, see Kenji Wardenclyffe, "TPPA Trans Pacific Partnership Agreement (Protest) – Occupy the Media" (video). Available at <http://www.youtube.com/watch?v=Eqp1i1hkIOI> (accessed 30 October 2012).

27 David J Kappos, "Patent Law Harmonization: The Time is Now", *Landslide* (July/August 2011).

28 See, *eg*, Kamal Saggi & Joel P Trachtman, "Incomplete Harmonisation Contracts in International Economic Law: Report of the Panel, *China – Measures Affecting Protection and Enforcement of Intellectual Property Rights*, WT/DS362/R, Adopted 20 March 2009" (2011) 10 *World Trade Review* 63 at 63–64.

29 For other reasons as to why patent applications are exploding, see Colleen V Chien, "From Arms Race to Marketplace: The Complex Patent Ecosystem and its Implications for the Patent System" (2010) 62 Hastings LJ 297.

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Mexico and Canada; if Brazil, Russia, India and China were included, the cost would double.[30]

11 Patent offices around the world are now inundated. More countries have become innovative, the TRIPS Agreement has increased the number of countries in which each innovator can file and the PCT and PLT have made it easier to prepare applications. Despite the preliminary examination available through the PCT, every patent office must ultimately examine each application to determine whether it complies with the unique substantive requirements of its domestic law. Backlogs are enormous, and in most countries, they are growing.[31] In the south, the problem is exacerbated by the difficulty in finding technically trained individuals to serve in the examiner corps.[32] Admittedly, many offices have embarked on work-sharing initiatives,[33] but as long as laws remain highly diverse, the benefits of work-sharing are limited.

12 The litigation side of the new patent ecosystem is equally troubling. Litigation is increasing almost exponentially,[34] and it is also exorbitantly expensive. The median cost for enforcing a valuable patent in the US is now approximately US$5m.[35] In cases where products are manufactured and sold worldwide, multiple actions may be required to put a definitive end to global infringement or to definitively determine freedom to operate.

13 Several attempts have been made to reduce these costs. In the EU, parties have tried to streamline IP infringement suits by seizing goods in transit, but in *Nokia Corp v Her Majesty's Commissioners of Revenue and Customs*,[36] the Court of Justice for the European Union

30 Inovia, "The US 2011 Global Patent & IP Trends Indicator" (February 2011) <http://www.protoneurope.org/download/inovia_2011_US_IP_Trends_Report.pdf> (accessed 5 June 2012); Invention Statistics, Costs of International Patents <http://www.inventionstatistics.com/Foreign_PCT_International_Patent_Costs.html> (accessed 5 June 2012); US Patent and Trademark Office, "International Patent Protections for Small Businesses", report to Congress (January 2012) <http://www.uspto.gov/aia_implementation/20120113-ippr_report.pdf> (accessed 5 June 2012).

31 World Intellectual Property Organization, *World Intellectual Property Indicators 2011* <http://www.wipo.int/export/sites/www/freepublications/en/intproperty/941/wipo_pub_941_2011.pdf> (accessed 5 June 2012).

32 *Cf* Amy Kapczynski, "Harmonisation and Its Discontents: A Case Study of TRIPS Implementation in India's Pharmaceutical Sector" (2009) 97 Cal L Rev 1571.

33 See, *eg*, Lily J Ackerman, "Prioritisation: Addressing the Patent Application Backlog at the US Patent and Trademark Office" (2011) 26 Berkeley Tech LJ 67.

34 See, *eg*, American Intellectual Property Law Association, *2011 Report of the Economic Survey* at p 35.

35 American Intellectual Property Law Association, *2011 Report of the Economic Survey* at p 35.

36 Case C-446/09 (joined cases).

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("CJEU") largely repudiated that strategy. In the US, attempts have been made to apply US law extraterritorially to infringements in other countries. Nonetheless, in *Microsoft Corp v AT&T Corp*,[37] the US Supreme Court refused to countenance that approach. Litigants have also tried combining claims under multiple national laws into a single action. However, in *Voda v Cordis Corp*,[38] the US Court of Appeals for the Federal Circuit (which hears virtually all patent appeals in the US) rejected that idea. In the EU, the situation on joinder is somewhat less clear. The CJEU took such actions off the table in two cases decided a few years ago,[39] yet unaccountably accepted the same strategy in a recent copyright case, *Eva-Maria Painer v Standard Verlags GmbH*[40] and, at least in preliminary patent proceedings, in the even more recent *Solvay SA v Honeywell Fluorine Products Europe BV*[41] ("*Solvay*"). If courts were to regularly hear global cases through these novel litigation mechanisms, then harmonisation would (once again) appear to be a worthy goal.

III. The costs of harmonisation

14 Unfortunately – and as the author has argued more extensively elsewhere[42] – harmonisation imposed through mandatory international obligations also has many disadvantages. These concerns can be loosely classified under three headings: legitimacy, diversity and historical contingency.

A. Legitimacy

15 Classically, IP law balances the interests of producers against those of users and the interests of one generation of producers against those of succeeding generations who would build on the earlier work. Striking these balances is a delicate task, depending heavily on such matters as the educational attainment and absorptive capacity of the relevant epistemic community, as well as each nation's technological infrastructure. As these factors vary from country to country, a global standard will create a suboptimal creative environment in many nations.

37 550 US 437 (2007).

38 476 F 3d 887 (Fed Cir, 2007).

39 *Roche Nederland BV v Frederick Primus* (Case C-593/03) [2007] FSR 5; *Gesellschaft für Antriebstechnik mbH & Co KG v Lamellen und Kupplungsbau Beteiligungs KG* (Case C-4/03) [2006] FSR 45.

40 Case C-145/10 (1 December 2011).

41 Case C-616/10 (12 July 2012).

42 Graeme B Dinwoodie & Rochelle C Dreyfuss, *A Neofederalist Vision of TRIPS: The Resilience of the International Intellectual Property Regime* (Oxford University Press, 2012); Jerome H Reichman & Rochelle C Dreyfuss, "Harmonization Without Consensus: Critical Reflections on Drafting a Substantive Patent Law Treaty" (2007) 57 Duke LJ 85.

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When imposed from above, through negotiations in remote locations, such laws do not always earn the respect of the citizenry.

16 The distributive consequences of these laws render their legitimacy even more suspect. For countries that are not yet at the technological frontier and are thus not in a position to innovate at world levels, strong patent law basically operates as a tax, redistributing their wealth to the countries that are better endowed. Strong protection may even impede the ability of developing nations to move to the technological frontier because patents can prevent local businesses from furnishing training opportunities. Moreover, patents prevent locals from engaging in the innovation necessary to tailor products to local needs. In some cases, strong protection could put the fruits of the world's creativity out of reach, a problem that became evident in the course of the Doha Round of the GATT negotiations, and which ultimately led to the Declaration on the TRIPS Agreement and Public Health (the so-called Doha Declaration).[43]

17 Relentless regime shifting adds to these concerns. The TRIPS Agreement succeeded where the SPLT failed because in trade negotiations, the north can use its markets as leverage: a country that does not agree to strong protection for IP loses market access for its commodities. Attempts to secure stronger protection in ACTA or the TPP appear to be taking advantage of a similar dynamic: the settings are crafted so that the *demandeurs* of strong protection have the most power. That ACTA and the TPP are negotiated in secret – potentially with advisors from the creative industries but without organisations representing user interests – only adds to the perception of illegitimacy.[44]

B. Diversity

18 Even without these problems, perfect harmonisation would still be problematic. There is no question that conceptualising IP as a trade issue makes sense and that it belongs in discussions about trade. IP is not, however, only about trade; it is also about health, nutrition, culture, social values, as well as attitudes toward entrepreneurship and innovation. These can differ dramatically from country to country. The quest for harmonisation ignores the problem of diversity and also the value of diversity – of having laws that encourage different kinds of creativity and speak to different talents, skills and aspirations.

43 World Trade Organization, Declaration on the TRIPS Agreement and Public Health (20 November 2001) WT/MIN(01)/DEC/2, 41 ILM 755 (2002).

44 See, *eg*, David S Levine, "Bring in the Nerds: Secrecy, National Security and the Creation of International Intellectual Property Law" (2012) 30 Cardozo Arts & Ent LJ 105 at 126–132.

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Harmonising IP rights could, at the end of the day, homogenise cultural production.

C. Historical contingency

19 Finally, the quest to harmonise ignores the fact that technologies change over time. The IP law of any one era is unlikely to be optimal as new technological opportunities emerge and the information infrastructure adapts. For example, in recent years, patent law has had to deal with advances in computer science and biotechnology (including attempts to patent the code that runs computers and human beings).[45] It has also had to cope with the greater involvement of universities in the patent system, which has accentuated the trend toward patenting fundamental scientific inputs. In addition, the rise of patent trolls – non-practising entities who buy up patents and then sue entire industries for infringement[46] – has revamped the patent law landscape. For the patent system to continue to flourish, it must remain supple and responsive to these developments. For example, Graham Dutfield has beautifully demonstrated the "coevolution of the life sciences, business and the patent system", showing how patent law both adapted to and altered the trajectory of biological research and development in Europe and the US.[47] There is a real question as to whether such tailoring can be achieved solely through international negotiations and in the absence of prior local experimentation.

20 Given these arguments, it is no surprise that the TRIPS Agreement is now largely recognised as creating only minimum standards of protection or that WIPO's attempt to impose an international regime through the SPLT has stalled. Significantly, however, bottom-up harmonisation stands on a profoundly different footing from these top-down efforts. The AIA demonstrates how the new paradigm might work.

IV. The Leahy-Smith America Invents Act

21 The AIA, which becomes operative in stages from 2011 through to 2013, is the first major revision of US patent law since 1952. Its major goal is, of course, to improve the US patent system. For example, the AIA includes new opposition procedures that should improve patent

45 See, *eg*, *Diamond v Diehr* 450 US 175 (1981); *Association of Molecular Pathology v United States Patent and Trademark Office* 653 F 3d 1329 (Fed Cir, 2011).

46 See, *eg*, James Boyle, "Open Source Innovation, Patent Injunctions, and the Public Interest" (2012) 11 Duke L & Tech Rev 30.

47 Graham Dutfield, *Intellectual Property Rights and the Life Sciences Industries: Past, Present and Future* (World Scientific Publishing Co Singapore, 2nd Ed, 2009) at p 4.

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quality by channelling validity challenges to the experts at the USPTO, rather than having them decided by judges or juries.[48] The AIA was, however, also designed with an eye toward harmonisation; it attempts to unilaterally bring the US into greater conformity with the EU and other important trading partners.[49] Thus, in 2001, when the US was embarking on a negotiation of the SPLT, the USPTO requested public comments on 14 issues where there were sharp differences between the US and its principal trading partners regarding substantive standards on awarding patents or methods for interpreting patent claims;[50] the AIA speaks to ten of these issues. Furthermore, courts have acted (and could act) in ways that further diminish the differences the USPTO identified. A few examples will suffice to show the extent to which the AIA has enhanced global harmony.[51]

48 See, *eg*, America Invents Act (US); codified in Patents 35 USC (US) § 6, §§ 311–319 (*inter partes* review) and §§ 321–328 (post-grant review).

49 Particularly significant in this respect are the remarks of David Kappos, Commissioner of Patents; see David J Kappos, "Patent Law Harmonization: The Time is Now", *Landslide* (July/August 2011) at p 18: "[The America Invents Act] … demonstrates the willingness of the United States to move unilaterally to what it considers to be global best practices. These include long-standing 'asks' from other countries that the United States switches from first-to-invent to first-inventor-to-file and that it make changes to its prior art and novelty regimes to move away from more parochial interests towards a system reflecting the global nature of business and trade."

50 US Patent and Trademark Office, "Request for Comments on the International Effort to Harmonize the Substantive Requirements of Patent Laws" 66 Federal Register (US) 15409 (19 March 2001). The request listed 17 topics. However, three are related to claiming practice (identification of a technical field in the patent application, the unity of invention rule and limitations on the filing of multiple dependent claims).

51 The other items include: the priority rule (covered by the America Invents Act ("AIA")); the nature of the technical contribution necessary to warrant a patent (recently altered by the Supreme Court in *Bilski v Kappos* 130 S Ct 3218 (2010) and *Mayo Collaborative Services v Prometheus Laboratories Inc* 132 S Ct 1289 (2012)); the best mode requirement (covered by the AIA); the utility requirement (partially dealt with judicially in *In re Fisher* 421 F 3d 1365 (Fed Cir, 2005)); the effective filing date for patent applications (the so-called *Hilmer* rule (*In re Hilmer* 359 F 2d 859 (CCPA, 1966))) (covered by the AIA); the use of art described in a patent application for non-obviousness purposes (not explicitly covered by the AIA, but made ripe for judicial attention); the grace period (covered by the AIA); geographic restrictions on prior art (covered by the AIA); secret commercial use by an inventor as prior art (not explicitly covered by the AIA, but now ripe for judicial attention); the inherency doctrine (dealt with judicially in *Schering Corp v Geneva Pharmaceuticals Inc* 339 F 3d 1373 (Fed Cir, 2003)); the problem-solving approach to non-obviousness (dealt with judicially in *KSR International Co v Teleflex Inc* 550 US 398 (2007)); the doctrine of equivalents (dealt with judicially in *Festo Corp v Shoketsu Kinzoku Kogyo Kabushiki Co Ltd* 535 US 722 (2002)); and the involvement of the inventor in filing the application (covered by the AIA).

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A. Conforming features

(1) Priority

22 In recent years, the US has stood on its own in awarding the patent to the first to invent the invention sought to be patented, as opposed to the first to file a patent application. Similarly, it measured the novelty and non-obviousness (inventiveness) of an invention by considering only art that existed when the invention was invented. Accordingly, the single most significant feature of the AIA is that it has eliminated the date of invention as a reference point and substituted the date of filing. As a result, an invention's priority, novelty and inventiveness will now all be determined as of the filing date rather than the date of invention.[52]

(2) Geographic source of prior art

23 The second biggest difference between US law and that of its trading partners resided in how US law identified relevant prior art. Under the Patent Act of 1952, information that is "known or used by others", "in public use or on sale" or "described in an application for a patent" counts as prior art only if the information is located in the US (or found in a US patent application).[53] Long a source of tension with other countries (and arguably a violation of the TRIPS Agreement's requirement of national treatment and non-discrimination[54]), the distinction is now obliterated by the AIA. Art, no matter where it is found, is now effective if it arises before the filing date of the application.[55]

(3) Best mode

24 Alone among nations, the US has long required inventors to disclose not only how to make and use the patented invention, but also "the best mode contemplated by the inventor of carrying out his invention".[56] This requirement leads to significant mischief as it requires a subjective evaluation of what the inventor knew and when he

52 Compare Patents 35 USC (US) § 102(a) (2006) with § 102(a) under the new America Invents Act (2011) (US). Henceforth, all citations to provisions of Patents 35 USC (US) are meant to refer to the provisions of the old Act; citations to provisions of the America Invents Act are to the reform Act.

53 Patents 35 USC (US) §§ 102(a), (b) and (e) (2006); see *In re Hilmer* 359 F 2d 859 (CCPA, 1966).

54 Agreement on Trade-Related Aspects of Intellectual Property Rights Arts 3 and 27.1.

55 Effective for what purpose – novelty alone, or both novelty and non-obviousness – remains a question, as discussed below.

56 Patents 35 USC (US) § 112 (2006).

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knew it.[57] The AIA does not eliminate the requirement. However, a patent that fails to disclose the best mode is no longer invalid or unenforceable.[58]

(4) Inventors

25 Both the Patent Act of 1952 and the AIA require inventors to apply for patents.[59] At the same time, however, the US has always permitted employees to assign inchoate rights to employers. In situations where the parties' interests are not in alignment, the application rule has proven problematic. The AIA adopts the approach of many foreign countries in allowing the assignee to apply for the patent.[60]

B. Nonconforming features

26 Nonetheless, despite the many ways in which the AIA now conforms US law to that of its trading partners, the new standards are not identical to the laws of foreign countries. Moreover, the new statute adopts novel terminology; until it is interpreted, the full scope of differences will be difficult to determine. Again, a few examples illustrate the point.

(1) Grace period

27 Most dramatically, the AIA includes a grace period.[61] US patent law has long had a grace period to prevent certain disclosures occurring before the filing date from defeating a patent. Under the Patent Act of 1952, the provision applied to any disclosure.[62] However, in common with the grace period in other countries, the AIA limits qualifying disclosures to those that involve the inventor. Nonetheless, the new provision retains significant differences. The period extends for an entire year (in contrast, in the EU, it is only six months).[63] Furthermore, while other countries that have a grace period limit the kinds of disclosures that qualify (under the EPC, for example, only disclosure at international exhibitions or involving abuse are excused), the AIA applies to all inventor-related disclosures.

57 See, *eg*, *Randomex Inc v Scopus Corp* 849 F 2d 585 (Fed Cir, 1988).
58 America Invents Act § 282 (2011) (US).
59 See, *eg*, Patents 35 USC (US) §§ 115 and 118 (2006).
60 America Invents Act § 118 (2011) (US).
61 America Invents Act § 102(b) (2011) (US).
62 Patents 35 USC (US) § 102(b) (2006).
63 European Patent Convention Art 55.

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28 Unfortunately, the generosity of the grace period also raises a question about the degree to which the US novelty and priority rules now conform to those of other countries. Any disclosure made after the inventor, a joint inventor or a person who learned from the inventor publicly discloses the subject matter is within the grace period and will not bar a patent.[64] In effect, then, the inventor's public disclosure functions as a quasi-priority date. It makes the AIA something of a first-to-disclose, rather than a first-to-file, system in that a disclosure will function just as well as a patent filing in protecting the inventor against the use of later-disclosed references for novelty and non-obviousness purposes. The wording of the provision is, however, fraught with difficulties; for example, the term "disclosure" is not defined. To complicate matters, the statute uses both the terms, "disclosure" (to refer to material disgorged by an inventor, a joint inventor or a person who learned of the invention from one of these)[65] and "publicly disclosed" (to refer to material that triggers the grace period). The difference between these two terms awaits judicial interpretation. If the term "publicly disclosed" requires a significant amount of publicity, then the provision will be less generous – and more in line with a true first-to-file priority rule. If it is interpreted to require only modest public knowledge, then US law will differ rather markedly in the way it determines novelty and priority.

(2) Secrecy

29 Ostensibly, the AIA eliminates the practice of using secret art to defeat a patent. The new provision bars a patent when "the claimed invention was patented, described in a printed publication, or in public use, on sale, or otherwise available to the public before the effective filing date of the claimed invention"[66] or if it was described on a patent or an application that is eventually published.[67] As such, the new statute eliminates reference to art privately conveyed to the inventor[68] or art practised by a third party in secret,[69] and brings US law into closer alignment with that of its trading partners.

30 However, the full extent of this conformity is in substantial doubt. For more than a century, the term "public use" has been interpreted to deny an applicant a patent if he practised his own

64 America Invents Act §§ 102(b)(1)(B) and 102(b)(2)(B) (2011) (US).
65 See, *eg*, America Invents Act §§ 102(b)(1)(A) and 102(b)(2)(A) (2011) (US).
66 America Invents Act § 102(a)(1) (2011) (US).
67 America Invents Act § 102(a)(2) (2011) (US).
68 Patents 35 USC (US) § 102(f) (2006); see, *eg*, *Oddzon Products Inc v Just Toys Inc* 122 F 3d 1396 (Fed Cir, 1997).
69 Patents 35 USC (US) § 102(g) (2006); see, *eg*, *Dow Chemical Co v Astro-Valcour Inc* 267 F 3d 1334 (Fed Cir, 2001).

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invention in secret.[70] In *Egbert v Lippmann*[71] ("*Egbert*"), for example, 11 years before applying for a patent, an inventor gave a corset to a woman who later became his wife. Presumably, she was a modest woman who did not reveal the corset publicly. Nevertheless, the Supreme Court held that the inventor had "slept on his rights" for those 11 years, and it invalidated the patent.[72] Although the new novelty provision's reference to art "otherwise available to the public" could be interpreted as rejecting *Egbert* by emphasising that art that is in public use must now be genuinely available, "otherwise available to the public" could also be interpreted as creating a contrast to the phrase "in public use", and therefore suggesting that private uses remain a bar. Further, the term "on sale" does not include the modifier "public", lending even more credence to the idea that certain secret uses – certainly by the inventor, but possibly by others as well – are patent-defeating.

(3) Non-obviousness

31 A third potential difference between US and foreign law lies in the use of art disclosed in a patent application for both novelty and non-obviousness (inventive step) purposes. Under the Patent Act of 1952, the practice of using art described in pending applications for both purposes renders all protected inventions patentably distinct – that is, every invention that is patented is both new and inventive as compared to the prior art. However, such is not the law elsewhere. For example, the EPC uses art described in pending applications for novelty purposes only; thus it is possible that an invention that is patented in an EPC country will not be non-obvious over another patented invention that had been the subject of a co-pending application at the time of examination.[73] The AIA says nothing about the purposes for which each category of art can be used:[74] perhaps it is meant to perpetuate the old rule. However, now that the US has conformed to foreign practice with regard to the *sources* of art that can be used to defeat a patent, perhaps the new rule should be interpreted to use that art for the same *purposes*.

V. Interpreting the Leahy-Smith America Invents Act

32 As noted, these problems (along with many other ambiguities in the new statute) will require interpretation by the courts. The Judiciary could take a variety of approaches to these questions. One possibility is that judges could interpret these provisions to adhere as closely as

70 See, *eg*, *Egbert v Lippmann* 104 US 333 (1881). See also *Metallizing Engineering Co v Kenyon Bearing and Auto Parts* 153 F 2d 516 (2d Cir, 1946) (Learned Hand J).
71 104 US 333 (1881).
72 *Egbert v Lippmann* 104 US 333 at 337 (1881).
73 European Patent Convention Art 56.
74 America Invents Act § 103 (2011) (US).

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possible to past practice. That approach has several advantages. It would increase the stability of the innovation environment and resonate with the expectations of inventors and investors who began their work prior to the enactment of the AIA. As important, it would allow courts and potential litigants to rely on 200 years of case law – a matter of no small importance in a common law country like the US.

33 Interpreting the new statute consistent with the old one would not, however, be responsive to Congress's perception that there was a need for reform. Consider, for example, the *Egbert* question – secret prior art practised by the inventor. It was imperative to deny the patent in *Egbert* because in a first-to-invent system, inventors can easily sleep on their rights. After all, they lock in their priority date by inventing the invention. Invention does not, however, in and of itself, make the advance available to the public or promote technological progress. Accordingly, in 1881 (and in 1952) there was a need to interpret the statute in a manner that spurs inventors to proceed to the patent office. Denying them patents for failing to prosecute expeditiously accomplishes that objective. In contrast, in a first-to-file system, delay is its own punishment (someone else might file first). Accordingly, there is no longer a need to interpret "public use" idiosyncratically. As Federal Circuit Judge Pauline Newman has argued, the use of "unknown, private … work to create a … bar to patentability" can distort the law.[75] Since delay no longer requires special attention, using the old law to interpret the new statute makes little sense.

34 A second strategy would be to interpret ambiguities to further the policies Congress has now chosen to implement. To continue with the *Egbert* example, during the debate over the AIA, Senator Jon Kyl repeatedly expressed the view that "otherwise available to the public" is a modifier, added to eliminate the use of secret art to bar patents.[76] Additionally, prime proponents of the reform bill, Senators Lamar Smith and Patrick Leahy, made similar statements before and after its enactment.[77] Therefore, it could be argued that courts should now give effect to the Senators' intent by reading "in public use" to mean that the invention must be available to more than the inventor's fiancée; it must actually be available to the public. The difficulty with this position is that it is not always clear what policies Congress is trying to further or whether individual legislators who speak out on a particular issue (such as secret use by the inventor) in fact represent the will of the legislature

75 *Baxter International v Cobe Laboratories Inc* 88 F 3d 1054, 1061 (Fed Cir, 1996) (Newman J, dissenting).

76 157 Cong Rec S5402-02, S5430–5431 and S5320 (8 September 2011).

77 US House of Representatives, *America Invents Act Report 2011*, 112th Cong, 1st sess (H Rep No 112-98) at pp 42–43 (statement of Senator Lamar Smith); 157 Cong Rec S1496, S1496 (9 March 2011) (statement of Senator Patrick Leahy).

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as a whole. In fact, the AIA was enacted as a jobs bill.[78] However, "increasing jobs" does not say very much about how to interpret specific details in the statute.

35 That leaves a more interesting alternative: courts could take what might be called a convergence approach and interpret open questions in a manner that brings US law into better alignment with the laws of other nations. Of course, this will not always be possible. For example, a 12-month grace period is half a year longer than a six-month grace period and no amount of judicial interpretation can change that result. However, there are many open questions where it would be feasible to construe the law to achieve similar outcomes to those obtained under the law of the trading partners of the US. As suggested earlier, a definition of "publicly disclosed" that requires notorious disclosure would reduce the extent to which the AIA deviates from a classic first-to-file rule. Additionally, since there is no need to import *Egbert*'s idiosyncratic interpretation of "public use" into the new AIA, courts could adopt an approach to prior art that leads to results that are close to those reached in other patent offices. Similarly, US courts could reject the use of art disclosed in a patent application for non-obviousness purposes – and do it *because* that would make the law more deeply harmonised.[79]

36 Admittedly, Americans have an almost pathological aversion to judges consulting foreign law. In some cases, jurists who have done so have been heavily criticised or threatened with impeachment.[80] A somewhat similar sentiment exists elsewhere. For example, in a case in the UK, *Human Genome Sciences Inc v Eli Lilly and Co*[81] ("*HGS*"), Lord Neuberger was called upon to decide when a genetic sequence would be regarded as having an industrial application under the EPC.

78 See, *eg*, Committee on the Judiciary, US House of Representatives, "HR 1249 One-Page Bill Summary – Job Creation" <http://judiciary.house.gov/issues/Patent%20Reform%20PDFS/HR%201249%201%20pager%20%20Job%20Creation.pdf> (accessed 11 July 2012); Economics and Statistics Administration and the US Patent and Trademark Office, "Intellectual Property and the US Economy: Industries in Focus" (March 2012) <http://www.uspto.gov/news/publications/IP_Report_March_2012.pdf> (accessed 6 June 2012) (describing patent-to-jobs ratios in various industries).

79 For a somewhat similar suggestion, see Timothy R Holbrook, "Should Foreign Patent Law Matter" (2012) 34 Campbell L Rev 581 <http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2064075> (accessed 11 July 2012).

80 See, *eg*, Linda Greenhouse, "Rehnquist Resumes His Call for Judicial Independence", *The New York Times* (1 January 2005) <http://www.nytimes.com/2005/01/01/politics/01scotus.html?_r=1&ei=5094&en=75b1057f5338b27c&hp=&ex=1104642000&adxnnl=1&partner=homepage&adxnnlx=1104588958-mdVdpUq4V7dUVBvFBzqbpg> (accessed 5 June 2012); David J Seipp, "Our Law, Their Law, History, and the Citation of Foreign Law" (2006) 86 BU L Rev 1417.

81 [2011] UKSC 51.

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The USPTO and the Federal Circuit had considered the same issue (in the US, it is called "utility"),[82] but Lord Neuberger declined to follow the US lead, claiming:[83]

> The analyses in the US cases deserve great respect. … However, there are obvious risks in relying on US jurisprudence when considering the precise nature of the requirements of Article 57 in relation to a claim for a patent for biological material under the EPC.
>
> There have been moves over the past 50 years (and more) to harmonise patent law across jurisdictions, and it is a laudable aim to seek to ensure that all aspects of the law of patents are identical throughout the world. However, the achievement of such an aim is plainly not currently practicable, and, although they have a great deal in common, there are significant and fairly fundamental differences between US patent law and the EPC (two notorious examples being the first-to-file rule in Europe, and file wrapper estoppel in the US).

37 However, even US Supreme Court Justice Antonin Scalia – perhaps the world's most vigorous opponent of consulting foreign law – is willing to use it when interpreting international instruments. He takes that approach because he believes that treaties represent an area where the same law *should* be applied in every country.[84] In the context of patent law, there is no treaty (as Lord Neuberger stressed in his opinion). Nonetheless, the AIA could be taken as a signal of rapprochement, a sign that judges should use their interpretive authority in cases of ambiguity to bring US and foreign law into greater alignment. Additionally, if the proposed EU unified patent court were to behave in a similar fashion, the two systems could easily reach a higher degree of harmonisation than international negotiators have so far achieved.

38 In fact, it is possible to detect some willingness in courts to move in that direction – even if they fail to admit it. Indeed, Lord Neuberger reached a decision in *HGS* not very different from what would have obtained in the US, and he did it for much the same reasons. Additionally, there are many other instances of converging judicial activity. One important area is patentable subject matter, which was one of the points of difference noted in the USPTO's 2001 request for comments.[85] At the time, US law broadly protected business methods and computer software. However, in *Bilski v Kappos*[86] ("*Bilski*"), the

82 See *In re Fisher* 421 F 3d 1365 (Fed Cir, 2005).

83 *Human Genome Sciences Inc v Eli Lilly and Co* [2011] UKSC 51 at [39]–[40].

84 US Association of Constitutional Law Discussion, *Constitutional Relevance Of Foreign Court Decisions* [The Scalia–Breyer Debate on Foreign Law] (13 January 2005) <http://www.freerepublic.com/focus/f-news/1352357/posts> (accessed 11 July 2012).

85 This point is examined at the text accompanying n 51 above.

86 130 S Ct 3218 (2010).

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Supreme Court held that abstract concepts were not patentable. Although the Supreme Court did not explicitly reject business method patents, it invalidated the ones at issue in the case and raised a bar that may spell the end for many others. *Bilski* has, in other words, brought US patent law into greater alignment with the EPC.[87] More recently, in *Mayo Collaborative Services v Prometheus Laboratories Inc* ("*Mayo*"), the Supreme Court rejected patents on natural laws when the claims add no more than "well-understood, routine, conventional activity previously engaged in by researchers".[88] Depending on how "conventional activity" is interpreted, *Mayo* may lead to greater congruence with the EPC's exclusion of computer programmes claimed as such.[89]

39 Analytics also appear to be converging. The *Mayo* Supreme Court's desire for activity that was not "conventional" brings US practice somewhat closer to the notion of looking for "a technical solution of a technical problem".[90] Furthermore, the Supreme Court was particularly wary of allowing patentability to turn on the "draftsman's art";[91] its approach was thus rather similar to the way that the Canadian Supreme Court uses the concept of "purposive construction":[92]

> Purposive construction will necessarily ensure that the Commissioner is alive to the possibility that a patent claim may be expressed in language that is deliberately or inadvertently deceptive. Thus, for example, what appears on its face to be a claim for an 'art' or a 'process' may, on a proper construction, be a claim for a mathematical formula and therefore not patentable subject matter.

40 By the same token, in *KSR International Co v Teleflex Inc*, where the issue concerned non-obviousness (the height of the inventive step), the Supreme Court emphasised the nature of the problem the inventor was trying to solve.[93] The problem-solving approach is, of course, well known in both EU and Canadian practice.[94]

87 European Patent Convention Art 52(2)(c).
88 132 S Ct 1289 at 1294 (2012).
89 European Patent Convention Arts 52(2)(c) and 52(3).
90 See, *eg*, *Duns Licensing Associates/Estimating Sales Activity* [2007] EPOR 38.
91 *Mayo Collaborative Services v Prometheus Laboratories Inc* 132 S Ct 1289 at 1294 (2012).
92 *The Attorney General of Canada v Amazon.com Inc* [2011] FCA 328 at [44].
93 550 US 398 at 419–420 (2007), where it is said: "One of the ways in which a patent's subject matter can be proved obvious is by noting that there existed at the time of invention a known problem for which there was an obvious solution encompassed by the patent's claims."
94 See, *eg*, *Pozzoli SpA v BDMO SA* [2007] EWCA Civ 588; *Windsurfing International Inc v Tabur Marine (Great Britain) Ltd* [1985] RPC 59 (CA).

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VI. The advantages of a convergence approach

41 Clearly, a convergence approach, dependent as it is on both domestic legislation and sympathetic judicial construction (and as shall be seen, administrative action), takes place through evolution, rather than via a one-time adoption of a new international instrument. International instruments can, however, also take time: negotiations over the TRIPS Agreement, for example, began at the end of the Tokyo Round in 1979; the instrument took 15 years to complete and, in many places, even longer to implement.[95] A reconsideration of the three concerns described earlier demonstrates why convergence represents the superior approach even if it does take longer.

A. Legitimacy

42 As noted, the TRIPS Agreement and subsequent regime shifts have engendered considerable ill will. Negotiations are conducted in selective secrecy; participating countries are carefully chosen to provide the impression of inclusiveness but without any real danger of resistance. ACTA, for example, includes Morocco; the TPP involves Brunei, Peru and Vietnam. Each move reinforces the illegitimacy of the enterprise as a whole. If, for example, a deal cannot be achieved in WIPO or the WTO, or through ACTA, there is a real question about legitimacy when the same result is reached in the TPP. Furthermore, if the past is a guide to the future, these agreements will eventually be incorporated into bilateral agreements with countries that had no part in the negotiation process;[96] it is therefore difficult to see the global outcomes as genuinely voluntary. In contrast, when each country adopts law on its own terms, through its own view of appropriate democratic processes, and then judges and administrators, operating under the state's own conception of due process, engage in interpretive convergence, the voluntariness of the decision cannot be questioned.

95 See, *eg*, Daniel J Gervais, *The TRIPS Agreement: Drafting History and Analysis* (Sweet & Maxwell, 3rd Ed, 2008) at para 1.06.

96 See, *eg*, US–Chile Free Trade Agreement (6 June 2003) Art 17(3) (requiring Chile to ratify the International Convention for the Protection of New Varieties of Plants, the Trademark Law Treaty, the Convention Relating to the Distribution of Programme-Carrying Signals Transmitted by Satellite) and Art 17(4) (requiring accession to the Patent Law Treaty, the Hague Agreement Concerning the International Registration of Industrial Designs, and the Protocol Relating to the Madrid Agreement Concerning the International Registration of Marks); the US–Jordan Free Trade Agreement (24 October 2000) Art 4.1 (requiring Jordan to give effect to the World Intellectual Property Organization ("WIPO") Joint Recommendation Concerning Provisions on the Protection of Well-Known Marks, International Convention for the Protection of New Varieties of Plants, the WIPO Copyright Treaty, and the WIPO Performances and Phonograms Treaty) and Art 2 (requiring Jordan to ratify the Patent Cooperation Treaty and the Madrid Agreement Concerning the International Registration of Marks).

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Each state enacts the law it sees as right for its people. When it chooses convergence, it is opting for global standardisation over other potential policy preferences.

B. Diversity

43 Other potential policy preferences are not, however, entirely sacrificed. Within the existing TRIPS Agreement framework, a state can decide to prioritise its own interests over the demands for convergence. Thus, countries that perceive a need to create more training opportunities for their citizens might lower the inventive step to encourage more incremental innovation. A country desiring to foster a strong generic drug industry might, like India, raise the inventive step. As these decisions take hold and foster technological capacity, the country's views might well change. For example, India's pharmaceutical sector is becoming increasingly innovative.[97] In the future, it is highly likely to demand law that will better protect its intellectual contributions.[98] By the same token, countries that feel they stand a good chance of attracting technology transfer and foreign investment can enact the strong patent laws that licensors and investors demand. At the same time, where a country's creative output is truly unique (or when foreign transfers or investments are not forthcoming), it can always choose to retain law that optimises access and maximises the benefits that can be derived from the special skills of its citizenry.

C. Historical contingency

44 The convergence approach is particularly well adapted to deal with the challenges posed by a changing innovative environment. When technology or business models change, it is not always clear which rule will work best, and whether the theoretically best rule will work in practice. Under a convergence system, the states can truly function, as Justice Brandeis envisioned, as laboratories. They can adopt different approaches and demonstrate how those approaches pan out. When a particular approach proves superior, then legislatures and courts that follow the convergence approach will adopt it. Harmonisation, in other words, ensues from demonstration, rather than obligation.

45 The grace period is a case in point. In theory, the generous approach of the AIA is better adapted to the current climate, where scientific discovery often begins in academia and later transfers to

97 See, *eg*, Thomson Reuters, "India Generics Companies Lead Pharma Innovation in Asia Pacific" (12 October 2011) <http://thomsonreuters.com/content/news_ideas/articles/science/498964> (accessed 10 July 2012).

98 *Cf* Shamnad Basheer, "India's Tryst with TRIPS: The Patents (Amendment) Act, 2005" (2005) 1 Indian J L & Tech'y 16.

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industry for commercialisation. Patents can be important to effectuate that transfer.[99] Academia and industry are, however, very different cultures: academics go to conferences and publish, while industry relies on exclusivity.[100] A grace period accommodates both interests. Academics can reveal their work to their colleagues and discuss their results at conferences without sacrificing industry's interest in patenting. However, as noted earlier, incorporating a robust grace period into a genuine first-to-file system has proven to be a formidable challenge. Only time can tell if the AIA's approach works. If it does, business and university interests will likely work together to convince national legislators outside the US to copy the AIA's example. If the grace period proves impossible in practice, the US will likely retreat to the dominant position. Either way, a higher degree of harmonisation will have been achieved.

VII. Dealing with the deficiencies in the convergence approach – Building institutions and networks

46 Admittedly, there is a lingering question: Will this approach yield enough uniformity to achieve the goals of those who wish to harmonise from the top down? Not every legislature paints with the broad brush wielded by the US Congress. In countries where legislation is more carefully delineated, there may be less room for judicial interpretation. Besides, judges may not be sufficiently cognisant of foreign approaches to fully exploit interpretive opportunities for moving the law in the appropriate direction. Convergence can also be chaotic because each country acts on its own; overall, they could easily wind up working at cross purposes.

47 It is certainly true that under a convergence approach, not every country will protect every invention to the fullest extent possible. Thus, not all patent holders would be able to fully capture the social value of their inventions. However, their attempts to do so are a major source of the current discontent with post-TRIPS Agreement developments. Nations have (more or less) come to terms with the TRIPS Agreement and have found flexibilities to protect nationally important interests; the attempt to reduce these flexibilities is what has caused SPLT, ACTA and the TPP to falter.

48 At the same time, the efficiency goals of harmonisation are eminently achievable. Due to immense backlogs, patent offices are

99 See, *eg*, David C Mowrey, Bhaven N Sampat & Arvids A Ziedonis, "Learning to Patent: Experience and the Quality of University Patents, 1980–1994" (2002) 48 *Management Science* 73.

100 See, *eg*, Rebecca S Eisenberg, "Proprietary Rights and the Norms of Science in Biotechnology Research" (1987) 97 Yale LJ 177.

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especially keen to streamline examination and have developed several initiatives – and as important, new institutions – to bring greater coherence to the law and its global administration. Through a series of bilateral agreements, there is a fast-track examination system that permits applicants to receive a ruling in one patent office, and then enjoy expedited examination in other offices, based on the first examination report. The US, for example, has such agreements (the so-called "Patent Prosecution Highway") with over 20 other countries.[101] These relationships not only speed up examination and reduce costs, they also allow patent offices to become acquainted with one another's work and the legal frameworks in which they operate. Familiarity is further enhanced through the extensive training opportunities that patent offices offer to one another and especially to examiners in less developed countries.[102]

49 Even more significant is the Trilateral, an institution created in 1983 by the European Patent Office, the Japan Patent Office and the USPTO. Representatives of these offices meet regularly to discuss work-sharing arrangements; enhance the operation of the PCT; compare examination strategies and develop common examination practices; adopt common citation practices, search tools and interoperable search systems; and exchange information – including information on training examiners.[103] The three offices also engage in examiner exchanges, which they regard as "[a] tool for enhancing understanding of patent systems and examination practices, building confidence among offices in work performed and promoting the effectiveness of exchange of work results in order to maximi[s]e work sharing activities".[104]

50 Perhaps most important, the three offices engage in a series of comparative studies, concentrating particularly on claims involving emerging technologies.[105] These permit the offices to find best practices

101 See US Patent and Trademark Office, Patent Prosecution Highway – Fast Track Examination <http://www.uspto.gov/patents/init_events/pph/index.jsp> (accessed 5 June 2012).

102 See, *eg*, European Patent Office, "[International Relations Project] Asia" (20 September 2010) <http://www.epo.org/about-us/office/international-relations/projects/asia.html> (accessed 6 June 2012). The European Patent Office supports the efforts of Asian countries to build up their intellectual property systems by organising training seminars for patent examiners and patent attorneys.

103 For a complete list of Trilateral activities, see Trilateral website, available at <http://www.trilateral.net/index.html> (accessed 6 June 2012).

104 See Trilateral, Projects <http://www.trilateral.net/projects.html> (accessed 6 June 2012).

105 See Trilateral, Projects <http://www.trilateral.net/projects/biotechnology.html> (biotechnology) (accessed 6 June 2012); <http://www.trilateral.net/projects/Comparative/business.html> (business methods) (accessed 6 June 2012); and <http://www.jpo.go.jp/shiryou_e/toushin_e/kenkyukai_e/utp242_m.htm> (computer-related inventions) (accessed 6 June 2012).

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and common approaches. Furthermore, they have led to a compilation of differing practices. According to the Trilateral:[106]

> The Catalogue of Differing Practices (CDP) is a tool aimed at identifying the differences in patent examination practice in the Trilateral Offices, as well as in the practice of KIPO (Korean Intellectual Property Office) and SIPO (State Intellectual Property Office of the People's Republic of China). It is also a first step towards a reference guide which allows the reader to quickly understand the practice in the other offices without requiring a detailed knowledge of the underlying legislative systems.

These practices are classified into four categories, according to whether the differences could be resolved by the patent offices in individual cases, through new regulations or require legislative or judicial action.

51 While the development of the Catalogue of Differing Practices ("CDP") is testimony to the absence of deep harmonisation and the inability of patent offices to eliminate multiple examinations, the CDP (and related activity) can perform an extremely useful function in the global patent regime. First, the CDP identifies the places where national systems are different and the sorts of changes required to achieve greater uniformity. Legislatures engaged in reform efforts could weigh the changes necessary against other national interests and decide, on full information, where their priorities lie. If courts were to adopt the convergence-through-interpretation approach advocated here, the CDP would help judges understand exactly what needs to be done to bring convergence about. Second, patent offices already act as "fifth columns", lobbying for changes that improve the efficiency of the examination system overall (for example, the ink was barely dry on the AIA when officials at the USPTO began to advocate for the new grace period abroad). The CDP and related Trilateral projects, such as the identification of best practices, facilitate and co-ordinate convergence efforts by providing concrete evidence of the cost of maintaining different regimes and suggesting the direction in which new law should be headed. Finally, the CDP enables patent offices to streamline examination. Once examiners know where the differences lie and how they affect outcomes, they can rely more easily on one another's work.

52 The same could be true in the litigation context. To return to *HGS*,[107] Lord Neuberger refused to adopt the utility guidelines developed in the US, citing differences between the US and UK views on priority and estoppel. Since neither of these issues bears an iota of relevance to utility, the judge was presumably worried that there were other, more

106 Trilateral, Catalogue <http://www.trilateral.net/catalogue.html> (accessed 6 June 2012).

107 This point was examined at the text accompanying nn 81–83 above.

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subtle, differences in the statutes that might be relevant to the question he was deciding. The CDP, accompanied by a glossary that the Trilateral has also compiled,[108] would assuage such concerns. The Trilateral can also perform a co-ordinating function, helping judges and legislators from all relevant countries move in concert toward the same goals. Significantly, judges have, like patent offices, experimented with institutions that support interpretive convergence. For example, they have held a series of conferences on international IP law at which they have compared problems and approaches and discussed such matters as citing one another's work and the value of specialised judiciaries.[109] Similarly, EU patent judges meet annually at the Venice Forum to learn from one another's experiences.[110]

53 Yet, unlike patent offices, which are eager to streamline examination, more work is likely necessary to achieve efficient adjudication of worldwide litigation. As noted earlier, courts have been wary of hearing claims under foreign patent laws. In the US, the Federal Circuit is apparently under the mistaken impression that international law prohibits the joinder of multinational cases.[111] The AIA adds to the problem because it permits the joinder of accused infringers only when they are jointly or severally liable or liable in the alternative, and there are questions of fact common to all defendants.[112] The provision was likely aimed at patent trolls, who have adopted a strategy of suing everyone in an industry at once. However, by apparently stripping courts of the discretion to join suits against parties acting in parallel in different countries, the AIA also eliminates the possibility of resolving a global dispute centrally, even when the principal actor resides in the US.

54 In the EU, there is a similar confluence of obstacles. The Brussels Regulation makes the courts of the country of registration the

108 Trilateral, Glossary <http://www.trilateral.net/glossary.html> (accessed 6 June 2012).

109 See, *eg*, 5th International Judges Conference on Intellectual Property Law <http://www.ipo.org/AM/Template.cfm?Section=Home&Template=/CM/ContentDisplay.cfm&ContentID=22046> (accessed 5 June 2012); International Judges Conference on Intellectual Property Law (22 April 2011) <http://www.patentdocs.org/2011/04/international-judges-conference-on-intellectual-property-law.html> (accessed 5 June 2012).

110 See, *eg*, Emmanuel Lazega, "Mapping Judicial Dialogue across National Borders: An Exploratory Network Study of Learning from Lobbying among European Intellectual Property Judges" (2012) 8 Utrecht L Rev 115 at 117.

111 See *Voda v Cordis Corp* 476 F 3d 887 at 899 (Fed Cir, 2007), where it was said: "Like the Paris Convention, nothing in the PCT or the Agreement on TRIPS contemplates *or allows* one jurisdiction to adjudicate patents of another." [emphasis added]

112 America Invents Act § 299 (2011) (US).

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exclusive forum in cases aimed at invalidating a patent.[113] In actions that are not primarily about validity, the Brussels Regulation would appear to be more helpful than US law in that it permits multiple defendants to be sued at the domicile of any one of them, as long as "the claims are so closely connected that it is expedient to hear and determine them together to avoid the risk of irreconcilable judgments resulting from separate proceedings".[114] However, a combination of the results in *Roche Nederland BV v Primus*[115] ("*Roche*") and *Gesellschaft für Antriebstechnik mbH & Co v Lamellen und Kupplungsbau Beteiligungs KG*[116] ("*GAT*") has made consolidation of patent cases less likely. In *Roche* and *GAT*, the CJEU held that patent cases arising in different jurisdictions necessarily involve different facts and law, and thus are not amenable to the use of the multiple-defendant provision.

55 *Roche* and *GAT* were, however, decided more than five years ago. As the burden of transnational litigation has increased, the CJEU appears to have had a change of heart. In *Eva-Maria Painer v Standard Verlags GmbH*, the court permitted the joinder of copyright actions arising in Germany and Austria, stating:[117]

> It is not apparent from the [Brussels Regulation] … that the conditions laid down … include a requirement that the actions brought against different defendants should have identical legal bases. As regards its purpose, the rule [on multiple defendants] … meets … the wish to facilitate the sound administration of justice, to minimise the possibility of concurrent proceedings and thus to avoid irreconcilable outcomes if cases are decided separately.

As noted earlier, the *Solvay* court similarly permitted a tribunal in the Netherlands to issue a preliminary order affecting non-Dutch patents.

56 As patent systems converge and judges become comfortable with commonalities and cognisant of differences (and the effect these differences have on outcomes), many of the efficiency objectives sought by the proponents of top-down harmonisation should become available through streamlined litigation. There might even be a synergistic effect. If judges were forced to entertain claims based on foreign law, they would be required to consider the benefits of other regimes as well as the costs of divergence. As these factors became more salient, judges

113 Article 22(4) of the Council Regulation (EC) No 44/2001 (OJ L 12) of 22 December 2000 on jurisdiction and the recognition and enforcement of judgments in civil and commercial matters.

114 Article 6(1) of the Council Regulation (EC) No 44/2001 (OJ L 12) of 22 December 2000 on jurisdiction and the recognition and enforcement of judgments in civil and commercial matters.

115 [2007] FSR 5.

116 [2006] FSR 45.

117 Case C-145/10 (1 December 2011) at [76]–[77].

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would become (like patent offices) more eager to do what they can to achieve harmonisation.

57 Convergence, coupled with consolidated litigation, would have another advantage. The TRIPS Agreement is extremely deferential to sovereign interests in the enforcement area. It does not require WTO members to enforce IP violations any more vigorously than they enforce the law in general, and a WTO dispute settlement panel relied on that provision to give China considerable discretion on when to prosecute infringement.[118] Much of the effort in ACTA and the TPP has been directed at overcoming that perceived deficiency. If states with strong enforcement capabilities handled the brunt of global matters, there would be less of an impetus to engage in corrosive regime shifting and a reduced need to impose on the adjudicative resources of developing countries.

58 Again, there is growing institutional support for this approach. The Hague Conference on Private International Law has had a longstanding interest in developing a convention on jurisdiction in multinational cases.[119] In 2008, the American Law Institute ("ALI") published a set of principles to govern jurisdiction, choice of law and judgments in transnational IP disputes.[120] The project specifically included mechanisms for consolidating global cases and for judicial co-operation in adjudicating parallel litigation. The Max Planck Institute in Germany and two groups of Asian lawyers have followed suit, and the International Law Association is now attempting to reconcile the four approaches.[121] Together, these projects can help judges

118 Agreement on Trade-Related Aspects of Intellectual Property Rights Art 41.5; Kamal Saggi & Joel P Trachtman, "Incomplete Harmonization Contracts in International Economic Law: Report of the Panel, *China – Measures Affecting the Protection and Enforcement of Intellectual Property Rights*, WT/DS362/R, Adopted 20 March 2009" (2011) 10 *World Trade Review* 63 at paras 7.593–7.599.

119 See, *eg*, Peter Nygh & Fausto Pocar, *Report of the Special Commission on Jurisdiction and Foreign Judgments in Civil and Commercial Matters* (August 2000) <http://www.hcch.net/upload/wop/jdgmpd11.pdf> (accessed 11 July 2012).

120 American Law Institute, *Intellectual Property: Principles Governing Jurisdiction, Choice of Law, and Judgments in Transnational Disputes* (American Law Institute, 2008).

121 European Max Planck Group for Conflict of Laws in Intellectual Property, *Principles for Conflict of Laws in Intellectual Property Law* (1 December 2011) <http://www.cl-ip.eu/files/pdf2/FinalText-1December2011.pdf> (accessed 6 June 2012); Transparency of Japanese Law Project, Kyushu University, *Transparency Proposal on Jurisdiction, Choice of Law, Recognition and Enforcement of Foreign Judgments in Intellectual Property* (October 2009) <http://www.tomeika.jur.kyushu-u.ac.jp/ip/pdf/Transparency%20RULES%20%202009%20Nov1.pdf> (accessed 6 June 2012); Waseda University Global COE Project, *Commentary on Principles of Private International Law on Intellectual Property Rights* (14 October 2010) <http://www.globalcoe-waseda-law-commerce.org/activity/pdf/28/08.pdf> (accessed 6 June 2012). For the work of the International Law Association's Committee on

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deal with the many procedural issues that arise when worldwide litigation is streamlined.

VIII. Conclusion

59 The effort to negotiate successively more stringent international agreements has engendered considerable backlash, ranging from a call by Keith Maskus and Jerome Reichman for a moratorium on international lawmaking in the IP realm to the installation of "protest" TPP toilet paper in the hotels where the TPP negotiations took place.[122] Now that the US has adopted a new patent statute aimed at bringing about harmonisation, and with the EU on the brink of creating a unitary patent and a specialised patent judiciary, the time has come to consider a new approach: administrative, judicial and legislative convergence. Each country would retain the sovereign authority to go its own way (within the dictates of existing agreements); each could decide for itself whether the interest in global standardisation outweighs the benefits of prioritising local interests. Such an approach would be more consonant with democratic values and would deal more effectively with the challenges posed by technological change and intellectual and cultural diversity.

60 A convergence approach is hardly new to the law. US law regarding torts and contracts is not federalised or constitutionalised, yet state courts and legislatures have largely converged on key doctrines. The national laws of the EU are on a similar path.[123] Also, though an attempt to harmonise competition law within the WTO framework failed in the Uruguay Round, competition authorities have worked together to turn enforcement into a genuinely international enterprise through the convergence of norms, approaches and laws.[124] To be sure,

Intellectual Property and Private International Law, see International Law Association <http://www.ila-hq.org/en/committees/index.cfm/cid/1037> (accessed 11 July 2012).

122 Keith E Maskus & Jerome H Reichman, "The Globalization of Private Knowledge Goods and the Privatization of Global Public Goods" in *International Public Goods and Transfer of Technology under a Globalized Intellectual Property Regime* (Keith E Maskus & Jerome H Reichman eds) (Cambridge University Press, 2005) ch 1, at p 37; D J Pangburn, "Activists Install TPP Toilet Paper at Hotel where Internet Censorship Negotiations are Underway", *Death and Taxes* (15 May 2012) <http://www.deathandtaxesmag.com/183128/activists-install-tpp-toilet-paper-at-hotel-where-internet-censorship-negotiations-are-underway/> (accessed 5 June 2012), answering the question "What is TPP" with, among other things, "Terribly Pricey Pills: Even Higher Medicine Prices".

123 Anne-Marie Slaughter, "The Real New World Order" (1997) 76 *Foreign Affairs* 183 at 188.

124 See, *eg*, Eleanor M Fox, "Linked-In: Antitrust and the Virtues of a Virtual Network" (2009) 43 Int'l Lawyer 151; Anne-Marie Slaughter, *A New World Order* (Princeton University Press, 2007) at pp 55–61.

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these efforts receive strong institutional support. In the case of state tort and contract law in the US, the National Conference of Commissioners on Uniform State Laws and ALI monitor the landscape, identify points of differences, determine the majority position, look at experience under divergent rules and suggest the preferable approach.[125] The ICN creates a similar focus for national competition authorities.[126] Analogous systems are developing in the IP sphere. As described above, the USPTO, EPO and JPO have created a strong mechanism on the administrative and legislative side and there are various organisations working to provide assistance to the Judiciary.

61 In the beginning, convergence efforts may well be confined to the countries participating in the Trilateral (the US, EU and Japan). However, many other nations (Australia, Canada, New Zealand and Singapore, to name a few) have strong innovation cultures and interests aligned with the Trilateral effort; several have established specialised patent courts capable of moving things forward interpretively.[127] As the geographic reach of convergence grows, the benefits of joining in the effort increase, and as developing countries proceed to the knowledge frontier and become exporters of knowledge products, their preferences will change as well. In the end, most of what the proponents of harmonisation seek to achieve might be obtainable through this gentler alternate route.

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125 See, *eg*, Uniform Law Commission, available at <http://www.uniformlaws.org/> (accessed 6 June 2012); American Law Institute, Restatement (Second) of Torts (1977); American Law Institute, Restatement (Second) of Contracts (1981).

126 For the work of the International Competition Network, see International Competition Network, Current Working Groups <http://www.internationalcompetitionnetwork.org/working-groups/current.aspx> (accessed 11 July 2012).

127 See International Bar Association, *Intellectual Property and Entertainment Law Committee, International Survey of Specialized Intellectual Property Courts and Tribunals* (2007) at pp 10–17 <http://www.ibanet.org/Document/Default.aspx?DocumentUid=7F5A1221-6C07-4CE7-A628-1F457A2433A5> (accessed 11 July 2012), mentioning specialised trial courts in Jamaica, Kenya, New Zealand, Singapore, the UK and Zimbabwe; specialised divisions of trial courts of general jurisdiction in Australia, Brazil, Belgium, Canada, China, Denmark, Finland, France, Germany, Hong Kong, Hungary, India, Iran, Israel, Italy, Japan, New Zealand, Norway, Pakistan, Panama, Romania, Sierra Leone, Singapore, Slovakia, Slovenia, Spain, South Africa, Sweden, Taiwan and the Netherlands; and specialised appellate courts in Brazil, Chile, China, Colombia, Finland, France, Germany, Japan, Korea, Panama, Portugal, Sweden, the Netherlands, the UK and the US.

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