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**TRIPS and Development**

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Introduction

As noted in the Introduction, the TRIPS Agreement<sup>1</sup> is now entering its third phase. This is a phase which follows an understanding of the detailed commitments contained in the Agreement and several years of efforts in academia and non-governmental organizations to criticize and limit its impact. The current phase, which emerges against a backdrop of ‘TRIPS Plus commitments’ in bilateral trade and investment treaties, focuses on the differences among developing countries and the calibration of their TRIPS implementations with their national innovation policies.

Developing or ameliorating an innovation policy is not a simple task. Any such policy has economic, cultural and social ramifications. An intellectual property regime must thus be viewed as forming part of a broader set of measures designed to optimize knowledge development and utilization. That optimization, in turn, should enhance economic growth, cultural prosperity and human development.

The policy dilemma may be summarized as follows: while importing ‘foreign’ intellectual property rules wholesale into the legislative and industrial fabric of a developing economy is insufficient to succeed, it is fair to assume that a country’s technology imports and foreign investment are unlikely to grow without adequate intellectual property rules. In other words, intellectual property rules are necessary to develop world-class innovation and creativity. At the international level, these rules are now essentially enshrined in the TRIPS Agreement.

This first chapter suggests that TRIPS norms should be integrated in a broader strategy

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<sup>1</sup> World Trade Organization Agreement on Trade-Related Aspects of Intellectual Property Rights, 15 April 1994, Marrakech Agreement Establishing the World Trade Organization, Annex 1C, Legal Instruments–Results of the Uruguay Round Vol. 31; 33 ILM 1197 [hereinafter referred to as ‘TRIPS Agreement’ or ‘TRIPS’].

designed to optimize innovation and access to knowledge. Viewed pragmatically, a part of any short- or medium-term strategy should include working with TRIPS as a given and, perhaps, even as a common reference point and possibly a defence against TRIPS Plus demands in bilateral discussions. TRIPS is not perfect, of course, but there is a significant degree of built-in policy flexibility that developing economies can use. More importantly, by developing a comprehensive strategy, a country can limit the negative impact of moving to higher intellectual property protection and increase its chances of reaping the benefits thereof, including technology-related foreign direct investment (FDI) and growing domestic internet, pharmaceutical or other technology-based industries.

Against this backdrop, Part I of this chapter examines various narratives that have tried to explain the emergence of the TRIPS Agreement. Part I then considers political, economic and cultural factors influencing the profound changes concerning TRIPS-related policy discussions, including the growing importance of traditional knowledge and genetic resources and the relationship between TRIPS and Public Health.

In Part II, the chapter discusses recent economic analyses of the impact of intellectual property protection on bilateral trade flows and FDI. Appropriate distinctions are made between trade and FDI. Wherever possible, lessons about the ‘right’ level of intellectual protection are drawn. Recent efforts in the World Intellectual Property Organization (WIPO) and World Trade Organization (WTO) are also discussed and views concerning the future of TRIPS and its impact on global innovation are expressed.

In the third and final Part, the chapter suggests an analytical model based on a new narrative concerning the place of TRIPS implementation, as part of a broad knowledge-oriented economic strategy.

## **Part I. Understanding TRIPS**

*A. TRIPS Negotiation Narratives*

As Peter Yu's work has shown,<sup>2</sup> accounts and analyses of the history of TRIPS revolve around one of four narratives: a bargain narrative 'in which the Agreement was considered the product of a compromise between developed and less developed countries';<sup>3</sup> a 'coercion' or 'imperialistic' narrative is common among scholars who originate from, or who are sympathetic to, developing countries.<sup>4</sup> According to this narrative, 'the TRIPs Agreement is considered an unfair trade document that developed countries imposed on their less developed counterparts'<sup>5</sup> by threatening to isolate them from the global trading system if they did not accede to the demands of the West<sup>6</sup> and/or to impose punitive unilateral sanctions;<sup>7</sup> an 'ignorance' narrative, in which 'less developed countries are portrayed as countries that did not understand the importance of intellectual property protection during the TRIPs negotiations',<sup>8</sup> in part for many of them this was a first complete multilateral trade negotiation, a difficulty compounded by the lack of intellectual property experts; and a fourth narrative, which Professor Yu refers to as based on 'self-interest' and defended *inter alia* by Alan Sykes<sup>9</sup> and Edmund Kitch,

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<sup>2</sup> Peter K Yu, 'TRIPs and Its Discontents' (2005) 10 Marq Intell Prop L Rev 369.

<sup>3</sup> *Ibid*, 371.

<sup>4</sup> E.g. B I Abdelgafar, The Illusive Trade-Off: Intellectual Property Rights, Innovations Systems and Egypt's Pharmaceutical Industry (Univ. of Toronto Press, 2006), 15-23.

<sup>5</sup> Peter K Yu, note 2 above, 371.

<sup>6</sup> In a similar vein, it has been suggested that TRIPS was perceived by a number of developing nations as a lesser evil than isolation and loss of MFN status. See B Hoekman, "Services and intellectual property rights", in S M Collins and B Bosworth (eds). The New GATT: Implications for the United States (Brookings Institution, 1994), 113.

<sup>7</sup> *Ibid*, 373.

<sup>8</sup> *Ibid*, 375.

<sup>9</sup> Alan O Sykes, 'TRIPS, Pharmaceuticals, Developing Countries, and the Doha "Solution"' (2002) 3 Chicago J Int'l L 47. Professor Sykes suggests that introducing high levels of IP protection in developing countries induces firms to invent products of particular interest to the developing countries (e.g. anti-malaria drugs) and to engage in technology transfer. Without uniform rules, there might be a 'collective action' problem. The problem arises because an individual developing country may benefit more if it chooses to have weak patent laws while the other developing countries have strong patent laws; that way, an individual country can obtain the benefits of inducing the invention of products of particular interest to developing countries without having to pay the costs. TRIPS solves the collective action problem by requiring all member nations to have strong IP protection. Sykes further argues that compulsory licensing reduces the pharmaceutical industry's incentive to undertake research into diseases that are endemic principally to the developing world. *Contra*, TF Cotter, 'Market Fundamentalism and the TRIPS Agreement' (2004) 22 Cardozo Arts & Ent LJ 307, 335-36. Prof. Cotter argues that even in the presence of strong patent rights, the developing nations' willingness to

<sup>10</sup> according to which less developed countries agreed to and/or benefit from stronger intellectual property protection because they found such protection necessary for knowledge development. As Professor Yu rightly noted, these narratives are not mutually exclusive and, as often happens, their proponents were all partly right and partly wrong. In fact, the history of TRIPS may not be the best candidate for Occam's razor. Let us examine each one in greater detail.

### **The coercion narrative**

Beginning with the coercion narrative, in fact it is true that a major concerted lobbying effort led by the United States, with strong support from the European Commission and Japan, and research-based pharmaceutical companies, the entertainment and software industries, was a causal factor in the emergence of TRIPS within the WTO (i.e. trade) framework—client politics at its best, some might say.<sup>11</sup> Respected economists, such as Jagdish Bhagwati and Joseph Stiglitz, were critical of this effort, to which they referred as pure rent-seeking<sup>12</sup> on the part of these companies.<sup>13</sup> In fact, as I shall attempt to demonstrate, that picture is quite incomplete, though the move to the trade arena, while it may have generated substantial benefits for rights holders in terms of enforcement

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pay might be so constrained that little incentive will exist anyway for the pharmaceutical companies to engage in much of this type of research and development. Indeed, several observers who have considered this issue have concluded that it will take much more than strong patent rights to induce this type of research. In the United States, they point to the Orphan Drug Act (21 U.S.C. §§360aa–360ee (2000)). Under this act, the United States government provides funding, tax benefits, and exclusive marketing rights to drug companies undertaking research into diseases affecting relatively small numbers of people. See K Outterson, 'Pharmaceutical Arbitrage: Balancing Access and Innovation in International Prescription Drug Markets' (2003) 5 Yale J Health Policy L & Ethics 193, 215–16.

<sup>10</sup> Edmund W Kitch, 'The Patent Policy of Developing Countries' (1994) 13 UCLA Pac Basin LJ 166, 171 : '...the technology needed by the developing countries is not the same as the technology that is needed by the developed countries. The developing countries have their own, unique needs. The incentive to invent, commercialize and market technologies which address their needs will only exist if there are patents available to protect successful innovators in those markets.'

<sup>11</sup> Which leads to highly concentrated benefits but highly distributed costs. See JQ Wilson, Politics of Regulation (Basic Books/Harper Collins, 1980) 369–72.

<sup>12</sup> See, e.g. Jagdish Bhagwati, In Defense of Globalization (Oxford University Press, 2004) 182–85. Dr. Bhagwati's criticism seems to insist mostly on the fact that TRIPS is not proper subject matter for the WTO.

<sup>13</sup> See Joseph Stiglitz, Making Globalization Work (Norton, 2006), at 116–7.

options, has also made it harder to use absolute, property-based justificatory theories for their intellectual property in the pragmatic, utilitarian/consequentialist world of trade regulation.<sup>14</sup> Some might see some irony in the fact that TRIPS obliges developing countries to document and enforce (private) property rights in intangibles such as copyrights, trademarks and patents, a majority of which are foreign-owned, while approximately 80 per cent of real estate assets in developing countries are ‘extralegal’ and thus not documented in ways that would allow using such assets as collateral.<sup>15</sup>

### **The ignorance and bargaining narratives**

There is some factual basis for the ignorance and bargaining narratives. Developing countries accepted the Agreement in many, if not most, cases because of significant political concessions<sup>16</sup> in other sectors of the Round, such as tariffs on tropical fruit or textiles.<sup>17</sup> They may not have grasped at the time the full extent of their TRIPS

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<sup>14</sup> A good example of this is the extension of the ‘three-step test’, a test originally designed to limit exceptions to the copyright right of reproduction in the Berne Convention (Art. 9(2) of the Paris Act of 1971), to a test that in TRIPS is used to measure the legality of exceptions to all copyright rights (Art. 13), design rights (Art. 26) and patents (Art. 30—in this case exceptions other than compulsory licensing). The test focuses on the economic impact on and interference with ‘normal commercial exploitation’ of an exception to exclusive rights, a staunchly utilitarian test far removed from traditional property-based or natural rights justifications. Berne Convention for the Protection of Literary and Artistic Works, September 9 1886, 25 UST 1341, 828 UNTS 221 [hereinafter ‘Berne Convention’].

<sup>15</sup> See Hernando de Soto, *The Mystery of Capital: Why Capitalism Triumphs in the West and Fails Everywhere Else* (Basic Books, 2006).

<sup>16</sup> For an interesting empirical analysis of how and why developing countries adopt higher intellectual property norms (in many cases not because they believe they need or will benefit from them), see Chapter 3 below (Professor Ostergard).

<sup>17</sup> A key difference between the WTO and organizations such as WIPO is that concessions are made in WTO negotiations across negotiating sectors. IP policy issues may be ‘abandoned’ for lower tariffs of cotton or coffee, for example. Interestingly, these issues are sometimes linked. The protection of intellectual property rights in agricultural products, such as seeds, is becoming an increasingly important issue. U Lele et al, *Intellectual Property Rights in Agriculture: The World Bank’s Possible Future Role in Assisting Borrower and Member Countries* (World Bank, Environmentally and Socially Sustainable Development Series: Rural Development, 1999). Stiglitz argues that ‘while TRIPs would reduce developing countries’ access to knowledge and force them to pay billions in royalties, it was meant to be part of the “Great Bargain”...in which the developing countries would get greater access in agriculture and reduced agricultural subsidies by the advanced industrial countries. The developed countries did not keep their side of the bargain.’ Stiglitz (note 10 above) 311 n 7.

commitments.<sup>18</sup> At the time, there were very few people arguing that TRIPS qua TRIPS was good in the short term for all developing countries. Developing countries accepted it as part of a package. In fact, all GATT multilateral rounds were ultimately ‘bargains’, though obviously the bargaining power of each participant was very uneven.<sup>19</sup> Still, the story might be written differently today. As the Doha Round discussions have shown, when a group of developing countries do not feel that their end of the bargain justifies the concessions asked of them, which may include higher levels of intellectual property protection and enforcement, the bargain may not be struck—especially when industrialized nations refuse to reduce trade, significantly distorting agricultural subsidies and their egregious export subsidies. But the political economic landscape has changed significantly since 1994.

The Doha Development Round, which started in Qatar in November 2001, is also a reflection of the political changes since 1994 (at the multilateral level at least) in the world of intellectual property, which resulted from alliances among developing nations informed by better data and analyses on the benefits and costs of intellectual property protection. In the three paragraphs concerning TRIPS in the Doha Ministerial Declaration, there are very few hooks on which to hang demands to increase IP protection.<sup>20</sup> First, paragraph 17 states that TRIPS should be implemented ‘in a manner

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<sup>18</sup> A point made in rather dramatic fashion by the same author: ‘[a]s they signed TRIPs [in Marrakech], the trade ministers were so pleased that they had finally reached an agreement that they didn’t notice they were signing a death warrant for thousands of people in the poorest countries around the world.’ Stiglitz (note 10 above) 105.

<sup>19</sup> Namely the ‘founding’ GATT (Havana) Round of 1947—though it never led to the formation of the International Trade Organization as originally planned; the Annecy Round of 1949; the Torquay Round of 1950; the Geneva (Fourth) Round of 1956; the Dillon Round of 1960–61; (named after C Douglas Dillon, then US Under-Secretary of State); the Kennedy Round of 1962–7; the Tokyo Round which lasted from 1973–9, where participation increased dramatically from 47 initial participants to 99; and the Uruguay Round which was launched in Punta del Este in 1986 and ended in Marrakech in 1994 with 125 participants, and which established the World Trade Organization to replace the ‘contractual’ GATT. The current Round started in Doha (Qatar) in 2001. As of this writing its future is uncertain. See generally JJ Jackson, The World Trading System (2<sup>nd</sup> ed, MIT Press, 1997).

<sup>20</sup> World Trade Organization, Ministerial Declaration of 14 November 2001, WT/MIN(01)/DEC/1, 41 I.L.M. 746 (2002), available at <[http://www.wto.org/english/thewto\\_e/minist\\_e/min01\\_e/mindecl\\_e.htm](http://www.wto.org/english/thewto_e/minist_e/min01_e/mindecl_e.htm)> [hereinafter Doha Declaration]. On the Doha process generally, see Daniel J Gervais, The TRIPS Agreement: Drafting History and Analysis (Sweet & Maxwell, 2003) 43–51.

supportive of public health, by promoting both access to existing medicines and research and development into new medicines...'. In the following paragraph, the Declaration addresses a mostly North–North issue, the completion of the negotiations over geographical indications on wines and spirits. The third and perhaps most well-known of the paragraphs instructs the TRIPS Council to ‘examine, inter alia, the relationship between the TRIPS Agreement and the Convention on Biological Diversity, the protection of traditional knowledge and folklore,’ and other new developments. In undertaking this work, the Declaration says, ‘the TRIPS Council shall be guided by the objectives and principles set out in Articles 7 and 8 of the TRIPS Agreement and shall take fully into account the development dimension’. In other words, apart from the possible increase in protection for the names of wines and spirits, the Doha Declaration essentially reflects the concerns of developing countries. The first paragraph insists on the balance between the need for access to IP and its protection.<sup>21</sup>

The separate Declaration on the TRIPS Agreement and Public Health, also adopted at Doha, emphasizes what had already been said in the Declaration itself—that the TRIPS Agreement should not prevent WTO Members from taking measures to protect public health.<sup>22</sup> Such an interpretation means that the TRIPS Agreement should be interpreted in light of its objective and purpose, as expressed in the Agreement itself: ‘[e]ach Member has the right to grant compulsory licenses and the freedom to determine the grounds upon which such licenses are granted’; ‘[e]ach member has the right to determine what constitutes a national emergency or other circumstances of extreme urgency’ (where public health crises may represent national emergency); and ‘[t]he effect of the provisions in the TRIPS Agreement that are relevant to the exhaustion of intellectual property rights is to leave each Member free to establish its own regime for such exhaustion without challenge, subject to the [Most Favored Nation] and national treatment provisions of Articles 3 and 4’.<sup>23</sup>

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<sup>21</sup> See LD Tully, ‘Note, Prospects for Progress: The TRIPS Agreement and Developing Countries After the Doha Conference’ (2003) 26 BC Int’l & Comp L Rev 129.

<sup>22</sup> World Trade Organization, ‘Ministerial Declaration on the TRIPS Agreement and Public Health of 14 November 2001,’ WT/MIN(01)/DEC/2, 41 I.L.M. 755 (2001), available at <<http://docsonline.wto.org/>>.

<sup>23</sup> *Ibid.*, paras 5(b), (c) and (d).

After intensive, and difficult, negotiations, the WTO General Council adopted an Implementation of Paragraph 6 of the Doha Declaration on the TRIPS Agreement and Public Health in 2003.<sup>24</sup> It allows WTO members, under certain conditions, to export generic versions of drugs used to treat diseases, such as HIV/AIDS, to countries that can neither afford nor manufacture these pharmaceuticals. While a compulsory license may reduce the patent (royalty) cost, it does not eliminate the production costs, nor the problems associated with distribution and timely administration of the medicines.<sup>25</sup> However, if patents are indeed more a part of the problem than of the solution for certain developing countries living with HIV/AIDS or other epidemics, then the Decision may help them overcome that obstacle. Be that as it may, even if the Declaration is imperfect, it unquestionably draws attention to a process essentially designed to take the needs of developing countries into account.<sup>26</sup>

True, the Uruguay Round bargain was based on incomplete information as a result of three main causes. First, most developing countries participating in the negotiation had no experts in international intellectual property norms. The few available experts (from countries such as Egypt, India and Brazil) had to carry a heavy burden. This expertise and resource asymmetry put them at a disadvantage when discussing detailed and arcane drafting points, especially those linked to the specific history of existing treaties such as

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<sup>24</sup> World Trade Organization, 'Decision of the General Council of 30 August 2003,' WT/L/540 (2003), available at <[http://www.wto.org/english/tratop\\_e/trips\\_e/implem\\_para6\\_e.htm](http://www.wto.org/english/tratop_e/trips_e/implem_para6_e.htm)>. It will be added as an Article 31bis, together with an Annex and an Appendix, thus preserving the format of the 2003 Decision.

<sup>25</sup> See A Attaran and L Gillespie-White, 'Do Patents for Antiretroviral Drugs Constrain Access to AIDS Treatment in Africa?' (2001) *J of the Amer Med Assoc* 286, 15, 1886–1906.

<sup>26</sup> See Carlos M Correa, 'Supplying Pharmaceuticals to Countries Without Manufacturing Capacity: Examining the Solution Agreed Upon by the WTO on 30th August, 2003' (2004) 1 *J Generic Meds* 105–19; BC Mercurio, 'TRIPS, Patents, and Access to Life-Saving Drugs in the Developing World' (2004) 8 *Marq Intell Prop L Rev* 211, 236–37. As of April 2007, no country had made the necessary notification to the WTO Secretariat to be able to invoke the Decision. See Cotter (note 6 above), 310–19; KM Gopakumar, 'The WTO Deal on Cheap Drugs: A Critique' (2004) 7 *J World Intell Prop* 99; D Matthews, 'WTO Decision on Implementation of Paragraph 6 of the Doha Declaration on the TRIPS Agreement and Public Health: A Solution to the Access to Essential Medicines Problem?' (2004) 7 *J Int'l Econ L* 73. For a view saying that the Declaration goes too far in favour of developing countries and acts as a disincentive to research, see Sykes (note 6 above).

the Berne and Paris Conventions.<sup>27</sup> Second, developing countries in most cases could not know what effects TRIPS implementation would have because of a dearth of empirical evidence. The TRIPS text was (or is) based on Western norms. In fact, by and large, the so-called ‘North’ imposed its, then most advanced, set of norms on the ‘South’. Major industrialized countries made relatively few concessions, despite their disagreements on some issues, except in relation to the need to submit their intellectual property compliance level to the scrutiny of a new, binding dispute settlement.<sup>28</sup>

### **The self-interest narrative**

The self-interest narrative offers an interesting viewpoint and has been discussed by a minority of scholars. Their analysis points to the benefits of (localized)<sup>29</sup> innovation for developing nations. Innovation (the generation and application of new ideas) is one of the five main drivers of economic development, and in the longer term perhaps the strongest one.<sup>30</sup> The proponents of this view assume, not only (as the Uruguay Round negotiators from major trading powers did) that TRIPS was necessary to maximize the rent that could be extracted from emerging foreign markets, and a difficult yet essential

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<sup>27</sup> Berne Convention (note 11 above); Paris Convention for the Protection of Industrial Property, March 20 1883, 21 UST 1583, 828 UNTS 303 [hereinafter ‘Paris Convention’]; see also PJ Heald, ‘Mowing the Playing Field: Addressing Information Distortion and Asymmetry in the TRIPS Game’ (2003) 88 *Minn L Rev* 249.

<sup>28</sup> The United States could not accept the Rome Convention for the Protection of Performers, Producers of Phonograms and Broadcasting Organizations, which protects neighbouring (related) rights. Therefore, the wording of TRIPS only refers to Rome with respect to exceptions. TRIPS Art. 14; see also Gervais (note 17 above), 99–100. Also on this list are moral rights, the protection of biotechnological inventions (which was not settled in Europe at the time), plant varieties, and geographical indications. Given the comparable clout of the industrialized countries involved in discussions of these issues, they were solved either by introducing exceptions (as in Art. 9 on moral rights or Art. 27 for biotechnology) or by rather vague undertakings to negotiate further (as in Art. 24 concerning geographical indications).

<sup>29</sup> For example, MA Lemley, ‘The Economics of Improvement in Intellectual Property Law’ (1997) 75 *Tex L Rev* 989, 1008–13 (discussing the reverse doctrine of equivalents which may apply to certain improvements).

<sup>30</sup> The other drivers are trade, finance, migration and aid. See I Goldin and K Reinert, Globalization for Development, Revised Edition: Trade, Finance, Aid, Migration, and Policy (revised ed., World Bank/. Palgrave Macmillan, 2007).

measure to jump-start global economic development;<sup>31</sup> but more importantly, that the intellectual property rules that had worked over decades or centuries of normative escalation towards high levels of intangible property protection would work if parachuted into emerging economies. IP as policy ‘castor oil’, in other words: developing countries should overlook the distasteful aspects of introducing or increasing IP protection and enforcement in exchange for longer-term economic health. As I shall attempt to show, this narrative was partly correct, but also partly misinformed and woefully incomplete.

The TRIPS Agreement is the poster child for the so-called Development Theory, according to which developing economies should import the normative, judicial and administrative infrastructure of more industrialized nations to achieve a similar level of economic development. According to this theory, copying the infrastructure will lead to increased foreign investment, availability of capital and economic growth.<sup>32</sup> However, Development theorists cannot fully prove their point now and were even less able to do so during the Uruguay Round. The data suggesting that developing countries may benefit from properly calibrated intellectual property norms was published after the end of the

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<sup>31</sup> This debate was present in China when it was first considering the adoption of a ‘Western-style’ patent law. As Professor Alford explains:

Proponents of a patent law placed primarily emphasis on its likely salutary economic effects, arguing that China needed to smash the [ . . . ] mentality of the Cultural Revolution that rewarded all equally, irrespective of the quality of their work [ . . . ]. This could only be accomplished, they contended, by adopting a patent system that provided meaningful material incentives. By permitting those who had so contributed to reap the fruits of their labours, a patent law would also, it was suggested, allow China’s most innovative organizations to accumulate additional capital and strengthen their management, which would spur further inventive activity [ . . . ] Opponents of a patent system [ . . . ] expressed concern about Western ‘literary-industrial complex,’ which some believed might patent so broadly in China as to stifle the development of indigenous science and so leave the nation dependent on the outside world economically, scientifically, and militarily. It would be foolhardy, they argued, to risk draining China’s limited foreign exchange reserves to pay royalties—especially when the same technology could be acquired at no cost, albeit without authorization.

WP Alford, To Steal a Book Is an Elegant Offence: Intellectual Property Law in Chinese Civilization (Stanford University Press, 1995) 67–8.

<sup>32</sup> The intellectual backdrop for this theory is the Washington Consensus, according to which the recipe for economic development is to reduce the role of government, emphasize privatization, trade and capital market liberalization, and deregulation. According to this view, governments must mostly protect property rights and avoid corruption. While acknowledging that there is no guarantee of fairness in wealth distribution that comes with this world view, Washington Consensus advocates generally believe in trickle-down economics, i.e. that all or most citizens will benefit from GDP growth. Some commentators, including Joseph Stiglitz (Nobel Prize winner in economics) have questioned the evidence to support this view. Stiglitz (note 13 above) 27.

Round and thus, as an explanatory tool for the Uruguay Round this narrative is anachronistic and skips the logical step of demonstrating that the TRIPS regime is optimally calibrated.<sup>33</sup>

One should also mention, in this context, the related beliefs that the misuse of intellectual property was comparable to theft (or ‘piracy’). The piracy discourse cannot be elevated to the level of a theory, however, and is more properly viewed as a lobbying tool, one especially powerful in the US Congress where private property has sacrosanct status. Yet, despite its shortcomings the self-interest narrative points to something exceedingly important by asking how developing economies can take advantage of intellectual property norms. I shall come back to this point later.

### ***B. TRIPS Implementation Narratives***

#### **The polarized narratives**

The four negotiation narratives, which try to explain the history of TRIPS, can be followed to the implementation phase. The TRIPS demanders believed that adding high intellectual property norms and enforcement measures in developing countries would not only generate higher rents for them but eventually for industries in developing countries as well, notably by increasing inward FDI. One could label this approach an addition narrative. Their decision to use the multilateral forum may be explained by the lack of alternatives: They could not easily lobby developing countries individually (having, in most cases, little to offer in exchange for higher intellectual property protection).

Not surprisingly, those who support the coercion and ignorance narratives, or consider that TRIPS was a misinformed, uneven bargain for developing nations because of TRIPS

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<sup>33</sup> Stiglitz is critical of ‘one size fits all’ development strategies and intellectual property regimes (ibid, at 119). While TRIPS does contain Western norms (those that the industrialized nations could agree among themselves) as of 1990, as this chapter and Chapter 15 (Epilogue) will attempt to demonstrate, there are flexibilities in TRIPS and ways to optimize its implementation in developing countries.

costs in comparison to the meagre benefits stemming from other negotiation areas of the Uruguay Round, have ‘fought’ TRIPS and recommended maximum flexibility leading to minimalist implementations of the Agreement (to the extent that this is possible).<sup>34</sup> In short, the idea was to obliterate as much of TRIPS as possible both as an international normative vector and in its country-by-country implementation, hence the label subtraction narrative. Proponents of this approach often support norm-making efforts in other fora<sup>35</sup> that may be used to interpret TRIPS (notably in a dispute-settlement context) in a way that is perceived to be more favourable to developing countries.<sup>36</sup> The value of these exercises as potentially relevant norms of public international law has not been fully tested before WTO dispute-settlement panels.<sup>37</sup> However, one may consider, in the longer term, that TRIPS is not static. TRIPS will evolve, and the exact scope of its provisions will become clearer with each panel and Appellate Body interpretation. The Appellate Body has indicated, for instance, that TRIPS should not be read in ‘clinical

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<sup>34</sup> See generally the recommendations outlined in the UNCTAD–ICTSD Resource Book on TRIPS and Development (Cambridge University Press, 2005), which notes (at p 21) that ‘[o]n the whole, the TRIPS Agreement that was concluded allows substantial flexibility in the specific implementation of IPR rules’. The report suggests, for instance, that bilateral negotiations aimed at securing ‘TRIPS Plus’ norms may contravene TRIPS: An important interpretative question is whether a Member that demands the adoption of TRIPS-plus standards in the bilateral or regional context might be failing to perform its TRIPS Agreement obligations in good faith. The argument on behalf of a Member’s being subjected to such demands would be that it accepted its TRIPS obligations as part of a set of reciprocally negotiated commitments that represent a balance of rights and obligations on which that Member is entitled to rely. Bilateral pressure to exceed the agreed upon commitments is contrary to the object and purpose of the WTO Agreement and TRIPS Agreement to provide a secure framework for the conduct of international trade relations.

<sup>35</sup> Graeme B Dinwoodie & RC Dreyfuss, ‘TRIPS and the Dynamics of Intellectual Property Lawmaking’ (2004) 36 Case W Res J Int’l L 95, 121. (‘[D]eveloping countries have recently seen regime-shifting as a bulwark against the established power balance in international lawmaking, and over time user groups might likewise view the ability to shift forum as a valuable defensive technique.’).

<sup>36</sup> Examples include the Convention on Biological Diversity (UN Conference on Environment and Development: Convention on Biological Diversity (5 June 1992) 31 ILM 818)(see Gervais (note 20 above) 228–232); and the International Treaty on Plant Genetic Resources in Food and Agriculture (ITPGRFA), Arts 6.2 and 12.3(d) of which may be interpreted as prohibiting the patenting of genes in certain cases. See Impacts of the IPR Rules on Sustainable Development (November, 2006) Queen Mary University, 72–74, available at: <<http://www.ip4development.org>>.

<sup>37</sup> Indeed, in interpreting WTO Agreements, including the TRIPS Agreement, the Appellate Body repeatedly relied on the provisions of the Vienna Convention of the Law of Treaties as a primary source for interpretative guidance. In India – Patent Protection for Pharmaceutical and Agricultural Products, doc. WT/DS50/AB/R, paragraph 46, the Appellate Body confirmed the general principle of applicability of Article 31 of the Vienna Convention on the Law of Treaties in interpreting the WTO Agreement, including the TRIPS Agreement, as established in United States – Standard for Reformulated and Conventional Gasoline, doc. WT/DS2/AB/R.

isolation' from public international law.<sup>38</sup> Norms negotiated elsewhere may be used to try to interpret TRIPS as forming part of a broader normative regime.<sup>39</sup> Developing and other countries can coalesce to develop alternative sets of norms and the inclusion of TRIPS and WTO rules in the broader framework of public international law. The potential role of national courts in shaping the interpretation of international intellectual property norms should not be underestimated. Based on the old principle of ensuring domestic laws comply with international norms by which a state is bound, national courts are called upon to interpret TRIPS and other instruments, and their exegesis may, in turn, influence the approach taken by international tribunals and WTO dispute-settlement panels.<sup>40</sup> The self-interest theorists have challenged the subtraction narrative head on.<sup>41</sup>

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<sup>38</sup> US – Standards for Reformulated and Conventional Gasoline, Report of the Appellate Body, doc. WT/DS2/AB/R, para. III. B. This principle was reflected in this and the subsequent decision, which relied on the case law of other international tribunals, namely the International Court of Justice, the European Court of Human Rights and the Inter-American Court of Human Rights, in interpreting the provisions of the WTO Agreement (US – Gasoline, *ibid*, paragraph III.B, footnote 36; Japan – Taxes on Alcoholic Beverages, document WT/DS8/AB/R, part D., footnote 19).

<sup>39</sup> See Dinwoodie and Dreyfuss, note 35 above.

<sup>40</sup> Graeme B Dinwoodie, 'The International Property Law System: New Actors, New Institutions, New Sources' in Proceedings of the 98th Annual Meeting of the American Society of International Law (2004); Daniel Gervais, 'The Role of International Treaties in the Interpretation of Canadian Intellectual Property Statutes' in O. Fitzgerald (ed), The Globalized Rule of Law: Relationships Between International and Domestic Law (Irwin Law, 2006), 549–572; and R Slate, 'Judicial Copyright Enforcement in China: Shaping World Opinion on TRIPS Compliance' (2006) 31 NCJ Int'l L & Com Reg 665.

<sup>41</sup> As Edmund Kitch notes :

There are three reasons why the no patent strategy does not in fact benefit the country that adopts it. The first reason is that the argument that a no or anti-patent strategy benefits the country that adopts it depends upon particular views of technology and of the patent system that are inconsistent with reality. The argument implicitly likens technology to a collection of food recipes and the patent system to a cookbook. Neither metaphor is right. Technology does not simply consist of a collection of instructions as to how to proceed, and patents do not, standing alone, contain the necessary information.

The second reason is that the technology needed by the developing countries is not the same as the technology that is needed by the developed countries. The developing countries have their own, unique needs. The incentive to invent, commercialize and market technologies which address their needs will only exist if there are patents available to protect successful innovators in those markets.

The third reason is that the ability of patent owners to charge for the use of their patent rights, either in the form of royalties or through end product prices is constrained by the ability of the country granting the patent rights to pay. Poor countries will inevitably pay proportionately less than wealthy countries for the use of patent rights.

Kitch, (note 7 above) 171; see also Walter G Park and Douglas Lippoldt, 'International Licensing and the Strengthening of Intellectual Property Rights in Developing Countries' (2005) OECD Economics Studies.

## **Subtraction and the Dependency theory**

A group of theories linked to the subtraction narratives is generally referred to as the Dependency theory, which argues that adopting an advanced intellectual property regime and a related Western-style infrastructure, while this may produce growth, in fact leads to greater economic dependency by making it easier for foreign companies to invest in, and take control of, the fledgling economies of developing nations. Proponents of the Dependency theory argue that high trademark protection, for example, creates mostly low-paying jobs in franchises or retail outlets and does not contribute to innovation. Some have called it the Americanization (or more colourfully, if not tastefully, the ‘McDonaldization’) of the economy in developing countries.<sup>42</sup> They point out, in that connection, that of the 100 top global marks, 64 are American and 34 more are from Western Europe or Japan. In other words, 98 of the world’s top 100 marks are all based, and profits repatriated to, a very small group of heavily industrialized countries. They also argue that the positive impact on economic growth generated by higher IP protection is greatly reduced by repatriation of profits and huge inequalities in the distribution of the new riches.

Dependency theorists propose a number of alternative world views, including at one end of the spectrum Marxist-leaning authors rejecting capitalist and existing IP and economic models entirely, but also several others one could call ‘proportionalists’, who argue that developing countries should adapt the intellectual property models of industrialized nations to their own needs and circumstances. Advocates of an IP model adapted to the specific needs of developing countries point out that none of the industrialized nations had intellectual property rules, at their current high level of protection, when their per

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<sup>42</sup> See Chapter 8 below (Professor Khoury). Hernando de Soto notes that franchising in itself is not productive:

Widely accessible legal property systems are the silt from upriver that permits modern capital to flourish. This is one of the principal reasons macroeconomic reforms are not working. Imitating capitalism at the level of the [river] delta, by importing McDonald’s and Blockbuster franchises, is not enough to create wealth. What is needed is capital, and this requires a complex and mighty system of legal property that we [in the West] have all taken for granted.

de Soto, note 12 above, at 66. That said, in the Middle East alone, the international franchise industry reached US\$14 billion in 2006 and was growing at more than 25 per cent annually. R Ditcham, ‘Mideast Franchise Industry Touches \$14b’ Gulf News, March 31 2007, 29.

capita GDP was comparable to that of a developing economy. We could call this the ‘parallelism argument’.<sup>43</sup> Those who hold this view favour the adoption of a variety of measures, such as the protection of indigenous intellectual property on the same level as ‘Western’ IP; price controls in appropriate cases; rules on franchises and profit repatriation. They also suggest counteracting the negative impact of high protection of foreign IP with subsidized import substitutions and local manufacture.

### **The calibration narrative**

It may be time to move beyond simplistic narratives and leave the sycophantic echo chambers. I suggest that that a calibration narrative is a better approach. Drawing from previous narratives, it recognizes that the introduction of TRIPS-compatible norms in the legal system of a developing country will not in and by itself generate massive developmental gains and may indeed entail substantial welfare costs. I will suggest the contours of this narrative in Part III of this chapter. Before doing so, let us continue our tour of the changing landscape by looking at traditional knowledge and other factors influencing the current changes, including bilateral agreements.

### ***C. TRIPS and Traditional Knowledge***

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<sup>43</sup> D Drache, ‘Trade, Development and the Doha Round: A Sure Bet or a Train Wreck?’ (March 2006) Centre for International Governance Innovation Working Paper No. 5, 25, available at [http://www.igloo.org/community.igloo?r0=community&r0\\_script=/scripts/folder/view.script&r0\\_pathinfo=%2F%7B7caf3d23-023d-494b-865b-84d143de9968%7D%2FPublications%2Fworkingp%2Ftradedev&r0\\_output=xml&s=cc>:](http://www.igloo.org/community.igloo?r0=community&r0_script=/scripts/folder/view.script&r0_pathinfo=%2F%7B7caf3d23-023d-494b-865b-84d143de9968%7D%2FPublications%2Fworkingp%2Ftradedev&r0_output=xml&s=cc>:)

The current intellectual property regime suffers from patents of poor quality and overly restricted access to copyrighted materials that are critical for innovation and economic growth. In the US the Federal Trade Commission has concluded that a wholesale revision of the patent system’s impact on innovation is needed. In the pharmaceutical area, patent challenges involving many important drugs and the challenger has won more than 70 percent of the cases according to a prominent US intellectual property lawyer. In the nineteenth century in the US and on the continent, infringement and unauthorized borrowing were an important part of American industrial development. [...] US entrepreneurs borrowed, adapted and stole British patented processes whenever they could.

Not much need be said here on traditional knowledge (TK),<sup>44</sup> particularly in light of detailed contributions on this topic in this book.<sup>45</sup> Nevertheless, the issue should be mentioned here. It necessarily forms part of the global intellectual property policy picture.

The protection of traditional knowledge has been discussed in international fora over the last few years;<sup>46</sup> however, the Doha declaration has now put it at centre stage.<sup>47</sup> There are several reasons for the issue's sudden move to the forefront. First, a large number of countries believe that up to now they have not derived great benefits from 'traditional' forms of intellectual property, yet find themselves rich with traditional knowledge, especially genetic resources and folklore. They would like to exploit these resources and several major companies share this interest. The second reason is the growing political importance of Aboriginal communities in several countries. While pharmaceutical and biotechnological companies are looking at ways to exploit indigenous medicinal knowledge, plants and other resources that are often found in developing countries, the internet is progressively allowing creators of folklore or folklore-based copyrighted material to disseminate their material worldwide at very low cost.

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<sup>44</sup> Traditional knowledge is a shorter form of 'traditional knowledge, innovations and practices'. See, e.g. the Convention on Biological Diversity, 5 June 1992, Art. 8(j). The Draft U.N. Declaration on the Rights of Indigenous Peoples, UN Doc E/CN.4/1995/, uses the expression 'indigenous knowledge, cultures and traditional practices'. In its more recent documents, WIPO uses the expression 'traditional knowledge, innovations and creativity'. See Intellectual Property Needs and Expectations of Traditional Knowledge Holders (1998–1999) WIPO Report on Fact-finding Missions on Intellectual Property and Traditional Knowledge (Geneva: WIPO, 2000) 21–22. Traditional knowledge includes a broad range of subject matters, for example traditional agricultural, biodiversity-related, and medicinal knowledge and folklore. Daniel Gervais, 'Traditional Knowledge and Intellectual Property: A TRIPS-Compatible Approach' (2005) Mich St L Rev 137.

<sup>45</sup> See especially Chapter 11 below (Professor Drahos), as well as the relevant section of Chapter 9 below (Jean Homere).

<sup>46</sup> For WIPO activities in this area, see: <<http://www.wipo.int/tk/en/>>. See also C Raghavan, 'ASEAN for Protecting Indigenous/Traditional Knowledge' (May 5 2000) Third World Network; and A Cosbey, 'The Sustainable Development Effects of the WTO TRIPS Agreement: A Focus on Developing Countries' (March 1999) available at <[http://www.tradeobservatory.org/library.cfm?filename=Sustainable\\_Development\\_Effects\\_of\\_the\\_WTO\\_TRI.htm](http://www.tradeobservatory.org/library.cfm?filename=Sustainable_Development_Effects_of_the_WTO_TRI.htm)>.

<sup>47</sup> Paragraph 19 reads in part as follows: '[ministers] instruct the Council for TRIPS, in pursuing its work programme [...] to examine, *inter alia*, the relationship between the TRIPS Agreement and the Convention on Biological Diversity, the protection of traditional knowledge and folklore, and other relevant new developments raised by members pursuant to Article 71.1'.

In addition to the development of treaty provisions under the aegis of WIPO, which could serve, at least initially, to produce norms on a regional basis, work in the Doha Round might lead to political recognition of the validity of some of the demands made by TK-rich developing countries.<sup>48</sup>

One question that is necessarily posed by the introduction of TRIPS-compliant intellectual property norms in environments rich in traditional knowledge and genetic resources, is whether these norms are adequate to deal with communally-held knowledge or genetic resources usually protected only once exploited by ‘Western’ scientific and industrial entities.<sup>49</sup> There was little attention paid to traditional knowledge and, more broadly, little in terms of economic analysis at the time those norms were developed, and there was hardly any hard evidence until at least the 1970s to justify their expansion and revision. Yet the last revision of the two major intellectual property treaties dates back to 1967–8.<sup>50</sup> The somewhat adventitious nature of intellectual property norms makes justification for such introduction (in its detailed characteristics at least) more difficult, and ultimately dependent either on political arguments or, where available, emerging empirical data (which may offer at best a blurred picture and not a precise set of justifications). It also tends to obscure problems, often considered very lightly in the West, that result from the fact that law and legal ideologies are a facet of culture, especially if culture is defined as the ‘interactive aggregate of common characteristics that influence a human group’s response to its environment’.<sup>51</sup> Creativity and innovation

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<sup>48</sup> WIPO Draft Provisions on the Protection of Traditional Knowledge (TK) and Draft Provisions on the Protection of Traditional Cultural Expressions/Expressions of Folklore (TCEs). Available at: <[http://www.wipo.int/tk/en/consultations/draft\\_provisions/draft\\_provisions.html](http://www.wipo.int/tk/en/consultations/draft_provisions/draft_provisions.html)>. At its tenth session (held from November 30 to December 8 2006), the Intergovernmental Committee Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore was still looking for ways to move the debate forward on both TK protection, and access to and protection of genetic resources.

<sup>49</sup> Gervais, ‘Traditional Knowledge & Intellectual Property’ (note 44 above).

<sup>50</sup> The Berne Convention (see note 11) was last revised in substance at the Stockholm conference of 1967, together with the Paris Convention (see note 24). In Paris in 1971 an Appendix was added to the Stockholm text to allow developing countries to issue compulsory reproduction and translation licenses (under certain conditions). The last Act of the Berne Convention is thus the Paris Act (1971).

<sup>51</sup> G Hofstede, ‘Culture’s Consequences: International Differences in Work-Related Values 25’ (1980) quoted in N V Demleitner, ‘Combating Legal Ethnocentrism’ (1999) 31 *Ariz St LJ* 737, 739. See also L Ross Meyer, ‘Unruly Rights’ (2000) 22 *Cardozo L Rev* 1, 49–50. The difficulty was the focus of the so-called Bellagio declaration, which argues that intellectual property, and copyright law especially, ‘unduly emphasizes the role of individuals in knowledge creation. Consequently,

are so interwoven into the social and cultural fabric that it is fair to ask whether they can easily all be regulated by a single set of norms developed in eighteenth century Europe and then amplified in negotiations between Western nations until 1989, when a photograph of all such norms that industrialized nations could agree upon was included in the WTO framework as the TRIPS Agreement, giving developing countries little other than a few additional years to comply.<sup>52</sup>

#### *D. External Factors Affecting the TRIPS Policy Landscape*

##### **Changes reflected in the Doha texts**

The changing landscape of international intellectual property, in respect of traditional knowledge, is confirmed *inter alia* by the reference in the Doha Declaration to Articles 7 and 8 of TRIPS, i.e. the two provisions inserted originally to reflect the concerns of developing countries. Though they have been given little regard up to now in dispute-settlement proceedings in the WTO, these two provisions could be given a somewhat higher normative profile in future disputes because of what is a possible ‘special status’ in the Doha text.

TRIPS Article 7 is cut from the same tree as paragraph 17 of the Doha Declaration embodying the idea of balance between protection and access. This need for balance is voiced, of course, by many people in industrialized countries, which is another factor

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intellectual property laws fail to reward those knowledgeable communities and collaborators that provided the raw intellectual material that formed the true basis for the copyrighted work or patented invention.’ See <[http://college.hmco.com/english/amore/demo/ch5\\_r2.html](http://college.hmco.com/english/amore/demo/ch5_r2.html)>.

<sup>52</sup> See also K McLeod, ‘Owning Culture: Authorship, Ownership, and Intellectual Property Law’ (2001) Vol. 1 *New York: P.Lang* ; R.J Coombe, ‘Critical Cultural Legal Studies’ (1990) 10 *Yale Journal of L & the Humanities* 463. Also consider economist Max Wirth’s objection to the ownership of patents: ‘[i]nventions do not belong in the category of intellectual property, because inventions are emanations of the current state of civilization and, thus, common property. . . inventions are merely blossoms on the tree of civilization’. See R E Meiners, ‘Patents, copyrights, and trademarks: property or monopoly?’ (1990) 13 *Harv JL & Pub Pol’y*, 916; and Christopher May and Susan Sell, *Intellectual Property Rights: A Critical History*, (Lynne Rienner Publishers, 2005), 43.

contributing to the fundamental change of the intellectual property landscape. There is increasing recognition that, while intellectual property regulation is necessary in certain areas to justify research and development expenditure, the optimal configuration of intellectual property norms cannot be readily ascertained on the basis of available empirical data, as is discussed below in Part II of this chapter. Any *ex ante* analysis of the ‘optimal system’ is problematic and even *ex post* adjustments to the system are often difficult to justify conclusively based on available data. There is, in other words, an unavoidable element of (hopefully somewhat educated) guesswork in making intellectual property policy.

### **The role of new stakeholders**

The international intellectual property landscape was altered radically over the last few years. This change was ostensibly driven by three main factors. First, many newcomers at the intellectual property table, those who might not have fully grasped the scope and depth of TRIPS obligations when they signed up to in 1994, now possess much more sophisticated knowledge in the area of intellectual property norms. That knowledge is provided in part by movements in ‘civil society’ against intellectual property regulation, or at least against higher IP norms, which have led to a number of studies and alternative proposals.<sup>53</sup> Better knowledge about intellectual property has also prompted the development of research into the second factor, namely, a more complete recognition that theoretically, at least, intellectual property has an optimal protection point.

### **The need to avoid overprotection**

More intellectual property does not necessarily work better when measured in terms of

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<sup>53</sup> For a fairly comprehensive view, see A K Sanders, ‘The Development Agenda for Intellectual Property’, Inaugural Lecture, Universiteit Maastricht, May 2005. Scholarly work on the impact and optimal structure of intellectual property regulation did not start with TRIPS, but with the clash between copyright and privacy on the internet (see Daniel Gervais, ‘Use of Copyright Content on the Internet: Considerations on Excludability and Collective Licensing’, in M. Geist (ed) Copyright Reform in Canada (Irwin Law, 2005), and the very public debacle over pharmaceutical patents on HIV and malarial drugs in Brazil and South Africa have taken the issue out of (only) specialized circles and into the public spotlight.

the effectiveness of implementing the policy objective of incentivizing (ex ante) or rewarding (ex post) innovation. To quote the Supreme Court of Canada on this point: ‘Excessive control by holders of copyrights and other forms of intellectual property may unduly limit the ability of the public domain to incorporate and embellish creative innovation in the long-term interests of society as a whole, or create practical obstacles to proper utilization.’<sup>54</sup>

Falvey, Foster and Greenaway explain that balancing act as follows:

A role for IPR protection arises because intellectual property displays many of the characteristics of a public good. It is typically non-rival and can be non-excludable. In the extreme these characteristics could remove the incentive to invest in R&D, and IPR protection can therefore restore that incentive. The importance of R&D and innovation has been emphasised by new growth theory [...]. In these models entrepreneurs invest in R&D in the expectation of profiting from their inventions. In addition to new products, innovation adds to a public stock of knowledge which lowers the cost of future innovation. Besides rewarding innovation, IPR protection stimulates the acquisition and dissemination of knowledge, since the information in patent claims is then available to other potential inventors. The rate of growth depends upon the rate of innovation and the stock of knowledge. Strong IPR protection need not always yield higher innovation and growth, however. Giving innovators too much protection may limit the spread of new ideas and lead to monopoly. Entry by rivals may be impeded, and successful innovators may have reduced incentives for developing and exploiting subsequent innovations.<sup>55</sup>

### **The search for policy equilibria**

The analysis above allows us to posit that there must be both an intrinsic and an extrinsic

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<sup>54</sup> Théberge v Galerie d’Art du Petit Champlain Inc, [2002] 2 SCR 336, para. 32.

<sup>55</sup> R Falvey, N Foster and D Greenaway, ‘Intellectual Property Rights and Economic Growth’ (2004). Internationalisation of Economic Policy Research Paper No. 2004/12, available at: <<http://ssrn.com/abstract=715982>>, at 2.

equilibrium in intellectual property policies. Ideally, given the broader societal interests at play, one should not protect beyond what is necessary to achieve the policy objective(s) because the risk of negative welfare impacts is too high. However, as we will see below, it is extremely difficult to pinpoint that exact level, and thus governments have to make rules based on other criteria. One must also consider that many developing countries no longer agree that TRIPS is a negative that must be accepted because of cross-sectoral concessions in the Uruguay Round. They want to learn how to benefit from intellectual property, maximizing the positives while minimizing the negatives in terms of higher consumer prices, job losses, and other welfare costs.<sup>56</sup> They also have a better understanding of the trade-strategic game in which they are necessarily players.<sup>57</sup>

Externally, the increasingly visible intersection between intellectual property and other rights broadens the base of the search for balance. The search for an extrinsic equilibrium then becomes unavoidable. The interplay between the intrinsic and extrinsic equilibria is apparent in a recent Canadian Supreme Court decision:

Our Court has often spoken of ‘the balance struck under the Patent Act’ in which the public gives an inventor the right to prevent anybody else from using his or her invention for a period of 20 years in exchange for disclosure of what has been invented. As a general rule, if the patent holder obtains a monopoly for something which does not fulfil the statutory requirements of novelty, ingenuity and utility, then the public is short-changed. [...]

In the present appeal, the Court is required to consider this ‘balance’ in the much-litigated field of patented medicines, where Parliament is concerned not only with

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<sup>56</sup> Professor Yu explains that intellectual property may appeal to leaders in developing countries because it holds out the promise of new jobs, FDI, tax revenues, technology transfer and the development of local artists, inventors and indigenous industries. Peter K Yu, ‘From Pirates to Partners: Protecting Intellectual property in China in the Twenty-First Century’ (2000) 50 Am U L Rev 131, 192–3.

<sup>57</sup> S Scotchmer, Innovation and Incentives (MIT Press, 2004), 329:  
...intellectual property rights are no longer a way to encourage domestic innovation. They also become a strategic instrument to affect profit flows among nations. To affect profit flows favorably, each country wants the strongest possible protections in foreign countries, and the weakest possible protections for foreigners in its own domestic market.

the balance between inventors and potential users, but between the protection of intellectual property on the one hand and, on the other hand, the desire to reduce health care costs while being fair to those whose ingenuity brought the drugs into existence in the first place.<sup>58</sup>

Indeed, it seems difficult to contradict the position that intellectual property policy should be solidly based on economic grounds. It would seem almost absurd to limit the analysis of intellectual property to the traditional natural right theories, such as the Lockean view of a right in one's labour, or a Kantian/Hegelian view of (mostly copyright) creations being imbued with their author's personality (creating an inextinguishable link between the creator and the creation).<sup>59</sup> Once the societal impacts of intellectual property are factored into the policy equation, those philosophical views seem to provide insufficient justifications when the debates focus not on whether intellectual property should exist<sup>60</sup> but on exactly what it should protect, in what circumstances and for what period of time. That debate tends to be more productive when participants accept an instrumentalist version of utilitarianism as the proper starting point. This foundation recognizes that intellectual property regulation is essential to avoid certain market failures, because (without legal protection) ideas, creations and inventions are non-exclusive and non-rivalrous—not the case with profits. In other words, while many people can share an idea, in many cases the same cannot be said of companies seeking to profit from the making and selling of creations or inventions embodying the same idea. By the same token, however, intellectual property rules should aim to improve general welfare and be fair to social interests at play even if this cannot be or is not measured at the level of

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<sup>58</sup> Bristol-Myers Squibb Co v Canada (Attorney General), 2005 SCC 26, paras 1–2.

<sup>59</sup> 'Natural rights are those which always appertain to [human beings] in right of [their] existence. Of this kind are all the intellectual rights, rights of the mind, and also all those rights of acting as individuals of [their] own comfort and happiness, which are not injurious to the rights of others.' (Thomas Paine, The Rights of Man). For a general overview of the various theories, see WT Fisher, 'Theories of Intellectual Property' in S Munzer, ed., New Essays in the Legal and Political Theory of Property (Cambridge University Press, 2001).

<sup>60</sup> A debate at that level is not altogether helpful. It often rests on a rejection of the dominant neo-liberal model and/or emphasizes the fact that corporations are only thinking of profits and those who manage them are only driven by greed and power. That said, the higher-level critiques of the 'system' may lead to better 'corporate citizenship'. Cynics are quick to argue that those efforts are themselves usually marketing-driven, so as to allow the corporation to make more profit (and hence tending to demonstrate that profit and good 'corporate citizenship' are not incompatible).

individuals. That is, in fact, the apparent paradox of intellectual property: the law grants a monopoly to allow society to gain access to new creations and inventions: to ensure that we can gain access, we limit access.

### **The Impact on TRIPS**

I suggest that the two results of the above analysis, namely the recognition of the two equilibria (intrinsic/extrinsic) and the adoption of an instrumentalist view of intellectual property, are here to stay for the predictable future. Future multilateral discussions will necessarily have to take that into account. That may explain why, as other chapters of this book demonstrate, the best escape for those who do not want to explore this new policy terrain is quickly to move their ammunition to the bilateral field.<sup>61</sup>

Perhaps efforts to dilute intellectual property norms may succeed in part, but the bilateral tightening towards TRIPS Plus is more likely to have significant normative impacts.<sup>62</sup> Besides, there can be no definitive answers given to questions such as whether the optimal term for a patent is 20, 18, or 22 years. Or is it 5 or 35? For copyright, is it 10 years, or life of the author plus 50 or 70 years?<sup>63</sup> What rights would achieve the policy purposes better than those now in place?<sup>64</sup> One would probably conclude that, for certain

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<sup>61</sup> See Ruth L Okediji, 'Back to Bilateralism? Pendulum Swings in International Intellectual Property Protection' (2003–2004) 1 Univ Ottawa L & Tech J 125, available at: <<http://www.uoltj.ca/articles/vol1.1-2/2003-2004.1.1-2.uoltj.Okediji.125-147.pdf>>.

<sup>62</sup> See Part 1.E below.

<sup>63</sup> See *Eldred v Ashcroft*, 537 US 186, 193 (2003). It has been argued that the current US and European term of 'life plus 70 years' is the economic equivalent of perpetual protection. See Ch Sprigman, 'Reform(aliz)ing Copyright' (2004) 57 Stan L Rev 485, 522. Sprigman writes:

The copyright term is now sufficiently long that the net present value to the rightsholder of a copyright is practically indistinguishable from what it would be under a perpetual term. In an amicus curiae brief submitted to the Supreme Court in support of the petitioners in Eldred v. Ashcroft, a group of economists that included Nobel Prize winners George Akerlof, Kenneth Arrow, James Buchanan, Ronald Coase, and Milton Friedman argued that the current, post-CTEA copyright term of life plus seventy years has a net present value that is 99.88% of the value of a perpetual term.

<sup>64</sup> By which I mean copyright (and the bundle of rights it contains, together with exceptions and a long term of protection) for literary and artistic works; a twenty-year patent for new, useful and non-obvious inventions (to use North American terminology, reflected in the footnote to Article 27 in TRIPS), etc.

forms of invention or creation—indeed for specific inventions or works—a certain term is optimal, while a different one is more adequate in a different context.<sup>65</sup> This analysis could depend, for example, on the added value of the invention, which depends in turn on the size of its inventive step and the degree to which this step overlaps the predictable industrial or commercial applicability of the invention.<sup>66</sup> One could add to the equation the degree of true competition in the industrial or economic sector impacted by the invention and, correlatively, whether there are dominant players by market share. This interesting theoretical discussion led one Canadian economist to suggest a protection term based on the social value of non-lifestyle pharmaceutical inventions.<sup>67</sup> However, even if such a proposal could pass the test of transaction costs, experts could only guess the future utility of the invention. In terms of predictability, time, and transition/protection costs, a single term may be a better, if theoretically less refined solution. It is certainly simpler.

The question here is not whether rights holder organizations will continue to push national and regional governments to adopt higher levels and longer terms for protection of intellectual property rights—they will. Not indefinitely, because most creators and inventors are also ultimately users of the intellectual property of others, but, when facing

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One could in theory devise a different system from scratch but the global spreading of any such new system would not be without very significant transition costs, and there is no guarantee that one could do better on the basis of available ‘performance indicators’ for the various types of IP protection. The temptation to build *sui generis* systems thus far has not met with complete success, as the database and computer chip examples demonstrate. That being said, the existing traditional structures of protection are far from perfect and can be improved upon, but most likely only in an incremental fashion. See Daniel Gervais, ‘The Internationalization of Intellectual Property: New Challenges from the Very Old and the Very New’ (2002), 12:4 *Fordham Intel Prop, Media & Ent LJ* 929–990.

<sup>65</sup> One *ex post* sign would be whether the invention is still actively being exploited at the expiry of the patent. However, if only inventions whose value had lapsed fell into the public domain, the societal value of granting a 20-year monopoly would come into question. In the United States, there is a long history of extending the term of specific patents by private bills. CL Stanley, ‘A Dangerous Step Toward the Over Protection of Intellectual Property: Rethinking *Eldred v Ashcroft*’ (2003) 26 *Hamline L Rev* 679, 694–5. Historically, the term of a patent was set by private bill until a standard term was introduced into federal law. See ThB Nachbar, ‘Intellectual Property and Constitutional Norms’ (2004) 104 *Colum L Rev* 272, 338–39.

<sup>66</sup> In the area of pharmaceuticals, a difference is often made between pioneer drugs and so-called ‘me-too’ drugs. The latter are variations on a molecule developed by another laboratory which tend to have the same physiological/therapeutic effect, but without infringing the ‘pioneer’s’ patent. See *US v Generix Drug Corp.*, 460 US 453 (1983).

<sup>67</sup> See A Hollis, ‘An Efficient Reward System for Pharmaceutical Innovation’ (2004), available at <<http://econ.ucalgary.ca/fac-files/ah/drugprizes.pdf>>.

a policy doubt, they tend to err on the side of (and lobby for) more protection. The size of their effort will depend on the perceived benefit of better and/or longer protection. Conversely, user groups (with their myriad forms and mandates) will no doubt continue to argue for less protection or broader exceptions. Thus, the question for policy makers here is what precise level of rights within the range of TRIPS-compatible implementations would achieve the policy purposes (better than those now in place).<sup>68</sup>

Indeed, while TRIPS is undeniably here to stay, it only harmonizes national laws to a degree.<sup>69</sup> This is not the place for a summary of the content of TRIPS.<sup>70</sup> Evidently, it contains more than simple ‘wishes’, in contrast to many provisions of the Paris Convention.<sup>71</sup> A country must provide protection of copyrights, certain related rights, trademarks (as defined), industrial designs, certain geographical indications, patents on most classes of inventions, certain forms of confidential information, and, last—and in this case least—topographies of integrated circuits, in each case for a specified period of time. On the other hand, however, there is some measure of flexibility in how some of the protected subject matter is defined,<sup>72</sup> owned,<sup>73</sup> managed,<sup>74</sup> or subject to exceptions.<sup>75</sup> In the area of enforcement, the Agreement recognizes that the implementation in a given WTO member may be impacted by the availability of resources.<sup>76</sup> In 2005 the United Nations Conference on Trade and Development (‘UNCTAD’) published a detailed

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<sup>68</sup> See Chapter 15 (Epilogue) below.

<sup>69</sup> See Jerome H Reichman, ‘The TRIPS Agreement Comes of Age: Conflicts or Cooperation with the Developing Countries?’ (2000) 32 Case W Res J Int’l L 441.

<sup>70</sup> See generally Gervais, The TRIPS Agreement (note 20 above).

<sup>71</sup> For a trademark-related example, see the Paris Convention (note 27 above), Art. 6(1) (‘[t]he conditions for the filing and registration of trademarks shall be determined in each country of the Union by its domestic legislation.’).

<sup>72</sup> For example, while Art. 27 states that WTO members must protect ‘inventions, whether products or processes, in all fields of technology, provided that they are new, involve an inventive step and are capable of industrial application’, the terms ‘new’, ‘inventive step’, and ‘capable of industrial application’ are not defined.

<sup>73</sup> See Appellate Body Report, United States – Section 211 Omnibus Appropriation Act of 1998, paras. 215–21, WT/DS176/AB/R (January 2 2002), available at <<http://www.tripsagreement.net>>.

<sup>74</sup> For instance, rules as to the ownership of collective marks, or whether and how copyright and related rights are to be managed (collectively or otherwise), are not explicitly mentioned in the Agreement.

<sup>75</sup> Many exceptions are only limited by the ‘three-step test’ contained in TRIPS Arts 13, 26(2), and 30. See Daniel Gervais, ‘Towards a New Core International Copyright Norm: The Reverse Three-Step Test’ (2005) 9 Marq Intell Prop L Rev 1.

<sup>76</sup> TRIPS, Art 41(5).

document on the flexibility of TRIPS.<sup>77</sup>

Admittedly, developing economies may need a partly different set of rules, depending on their level of development. As UNCTAD put it,

experience shows that there is a need for policy instruments specifically designed with the aim of helping countries at lower stages of development to converge on the levels of efficiency and affluence achieved by the more advanced economies, and to improve the welfare of all groups of the population. Making this the principle for policy design at both the domestic and the international level requires recognition of the fact that successful development and integration of the developing countries is in the mutual interest of all countries, as longer-term growth and trading opportunities of the more advanced economies also depend on the expansion of industrial capacity and markets in the poorer economies.<sup>78</sup>

There is a degree of normative elasticity within TRIPS that allows for several different types of implementation, even though the major concession to developing countries other than least-developed ones was a set of transitional periods. For such countries, these transitional periods expired in January 2000, and in January 2005 for pharmaceutical patents.<sup>79</sup> The real question is how these flexibilities should be used. I return to this point when discussing the various implementation narratives in Part II of this chapter.

### **E. Bilateral Treaties**

Despite UNCTAD's suggestion that insofar as countries negotiating trade or investment treaties demand TRIPS Plus norms they may violate TRIPS, it seems unlikely that a

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<sup>77</sup> UNCTAD–ICTSD Resource Book, note 34 above.

<sup>78</sup> UNCTAD, Trade and Development Report 96 (2004), available at <[http://www.unctad.org/en/docs/tdr2004\\_en.pdf](http://www.unctad.org/en/docs/tdr2004_en.pdf)> [hereinafter 'Trade and Development Report'].

<sup>79</sup> TRIPS, Art 65(2), (4). A TRIPS Council decision of 29 November 2005 gives the WTO's 32 least-developed countries until July 2013 to implement TRIPS and, in the case of pharmaceutical patents, least-developed countries now have until 2016. See note 116 below and Reichman (note 69 above) 442 n.3.

WTO panel would arrive at such a conclusion.<sup>80</sup> WTO and GATT law have always allowed for ‘plus’ agreements to be negotiated. Often, a ‘new baseline’ is established on the basis of those discussions. It is true, however, that post-TRIPS development has been going into two (arguably diverging) ways. TRIPS-related developments within WTO, as well as the recent developments in WIPO, have tried to be more responsive to the perceived needs of developing countries and the interests of users in securing access to protected content and material on terms they consider reasonable, including broad exceptions to obligations to obtain permissions and licenses. On the other hand, intellectual property developments in recent bilateral and regional trade agreements mirror the so-called maximalist approach.<sup>81</sup> The latter trend to regulate intellectual property rights through bilateral regimes may not be immediately threatening to the approach of the WTO and the WIPO, but these bilateral initiatives likely will have a significant impact in the long run.<sup>82</sup>

## **Part II Measuring the Impacts of TRIPS on Development<sup>83</sup>**

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<sup>80</sup> UNCTAD–ICTSD Resource Book, note 34 above.

<sup>81</sup> For example, recent US Trade Agreements ‘export’ the Digital Millennium Copyright Act, Pub L No 105–304, 112 Stat 2860 (1998), a specific piece of legislation concerning the protection and circumvention of technological protection measures (TPMs) that fits into the whole of the US Copyright Act, with its various safeguards, including constitutional protections stemming from the Bill of Rights. DMCA-like provisions are or will soon be part of national legislations in Central America and Asia as something of a stand-alone legislative instrument. See United States Bilateral Trade Agreements with Morocco, Chile, Bahrain, Australia and Central American Free Trade Agreement, available at <[http://www.ustr.gov/Trade\\_Agreements/Section\\_Index.html](http://www.ustr.gov/Trade_Agreements/Section_Index.html)>. These provisions are also being negotiated in a number of other agreements as well as within the Free Trade Area of the Americas. See Susan Sell, *Private Power, Public Law: The Globalization of Intellectual Property Rights* (Cambridge University Press, 2003), 121–162. Joseph Stiglitz notes that in preparing the bilateral agreement between the United States and Morocco, ‘there wasn’t much negotiations involved’, and that ‘the US negotiators were mostly interested in having their way—and they wanted the new agreement to protect US drug companies’. Stiglitz, note 13 above, 104.

<sup>82</sup> Professor Yu labels this approach ‘the double backdoors in international intellectual property lawmaking’. If a number of countries import higher level of intellectual property protection, it is likely that that high level will be codified as the existing norm in any revision of TRIPS. See also Gervais, *The TRIPS Agreement* (note 20 above) 68.

<sup>83</sup> A full economic analysis is contained in Chapter 3 below (Professor Ostergard). This Part of this chapter is based on a paper by the author published at (2005) 74 *Fordham L Rev* 505 and republished at (2006) 5:4 *ICFAI Journal of Intellectual Property Rights* 39–61. The Part focuses on policy impacts, though it uses some economic tools to do so.

The introduction, or updating, of intellectual property norms in all member countries and territories of the World Trade Organization (WTO), as a result of the Uruguay Round's TRIPS Agreement, sparked a relatively new field of study, namely the impact of the introduction of intellectual property norms on the social, cultural and economic development of developing and least-developed countries. Two notable institutional efforts include the World Bank's report on the impact of intellectual property on economic development,<sup>84</sup> and a report published by the UK Commission on Intellectual Property Rights.<sup>85</sup> There have also been initiatives concerning the origins of the push to have intellectual property included as part of the Uruguay Round package<sup>86</sup> and to provide a deeper understanding of the impact of intellectual property on developing and emerging economies.<sup>87</sup>

The purpose of this Part is to examine insights offered by economic analysis and to understand the impact of introducing TRIPS-compliant norms.

### **A. Overview of Recent Analyses**

A number of recent studies offer a blurred and complex picture of the advantages of (high) IP protection in developing economies.<sup>88</sup> It now seems clear that since TRIPS was

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<sup>84</sup> Intellectual Property and Development, C Fink & KE Maskus eds. (World Bank, 2004)

<sup>85</sup> Commission on Intellectual Property Rights, Integrating Intellectual Property Rights and Development Policy (2002), available at <[http://www.iprcommission.org/papers/pdfs/final\\_report/CIPRfullfinal.pdf](http://www.iprcommission.org/papers/pdfs/final_report/CIPRfullfinal.pdf)> [hereinafter 'UK IPR Commission Report'].

<sup>86</sup> See Gervais, The TRIPS Agreement (note 20 above); Sell (note 81 above) 96–120; C May, A Global Political Economy of Intellectual Property Rights: The New Enclosures? (Routledge, 2000); Peter Drahos and J Braithwaite, Information Feudalism : Who Owns the Knowledge Economy? (New Press, 2003); and A Koury Menescal, 'Those Behind the TRIPS Agreement: The Influence of the ICC and the AIPPI on International Property Decisions' (2005) 2 Intell Prop Q, 155.

<sup>87</sup> Many of the contributors to this book have published extensively on this topic. One could also mention S Scotchmer, 'The Political Economy of Intellectual Property Treaties' (2004) 20 J L Econ & Org 415, 435–36.

<sup>88</sup> 'The Impact of Trade-Related Intellectual Property Rights on Trade and Foreign Direct Investment in Developing Countries', OECD Working Party of the Trade Committee, Document TD/TC/WP(2002)42/FINAL, May 28 2003, available at <<http://www.oecd.org/dataoecd/59/46/2960051.pdf>>; Park and Lippoldt, note 41 above; UK IPR Commission Report, note 85 above; Fink and Maskus, note 84 above; The Uruguay Round and the

informed more by the belief that introducing ‘Western’ IP norms would induce development than by actual supporting analyses and data, TRIPS put the policy cart before the empirical horse.<sup>89</sup> We now know that a simple equation cannot be drawn between an increase in trade following the introduction of TRIPS-compatible IP protection, on the one hand, and economic development on the other, especially when measured in terms of welfare increases.<sup>90</sup>

### **Selecting Proper Indicators**

There are (at least) two principal indicators that are helpful to analyze the impact of increasing protection, namely (a) the increase of trade flows in goods that include a significant IP component (as compared to the physical value of the material and components—for example, a music CD or a patented pharmaceutical molecule; such areas may be referred to as ‘intellectual property sensitive’); and (b) the increase in FDI in goods or services that require a high level of IP protection. It is essential to measure both because, to a certain extent, they cancel each other out: a company in country A (export) may have the ability to send goods to country B, but instead opt for local production (under license) in country B. The analysis by Maskus and Fink is based on data available from 89 countries. Their main conclusion is that higher levels of IP protection are useful in areas other than fuel (and, presumably, raw resources pre-value-

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Developing Economies, W Martin and LA Winters (eds) (World Bank, 1995), available at <<http://econ.worldbank.org>>; Scotchmer, ‘Political Economy of IP Treaties’ (note 83 above), 435–36. OECD Science, Technology and Industry Outlook 2004 (2004); OECD, ‘Patents, Innovation and Economic Performance: OECD Conference Proceedings (2004)’; C Brenner, ‘Intellectual Property Rights and Technology Transfer in Developing Country Agriculture: Rhetoric and Reality’ (March 1998) OECD Development Centre Working Paper 133, CD/DOC(98)3.

<sup>89</sup> As Park and Lippoldt noted (in *ibid*, Executive Summary, page 1):

Reform of the global IPR framework over the last decade has been at least partly motivated by the premise that developing economies will benefit from increased technological inflows as a consequence. However, the theoretical literature does not provide unambiguous predictions about this premise and the empirical evidence is scant, particularly at the firm or enterprise level.

<sup>90</sup> C Fink & CA Primo Braga, ‘How Stronger Protection of Intellectual Property Rights Affects International Trade Flows’ in Fink and Maskus, (note 84 above) 21. (‘The implications of IPRs for economic welfare are complex. The simple fact that trade flows rise or fall in response to tighter IPRs is not sufficient for drawing conclusions regarding economic welfare. Both static and dynamic effects need to be considered.’) Obviously, an increase in overall economic development may not translate into a reduction of poverty. Other factors, such as wealth distribution and corruption, are relevant.

added transformation) and, perhaps surprisingly, high technology.<sup>91</sup>

Maskus and Fink suggest<sup>92</sup> five possible explanations as to why there is no measurable positive impact in the case of high technology goods:

- (1) strong market power may offset the positive market expansion effects of higher protection;
- (2) higher FDI may lower international trade (as discussed above);
- (3) it is possible that the impact of intellectual property protection was not accurately measured;
- (4) factors in the destination country (country of export) may matter more than intellectual property (including first mover advantage); and
- (5) finally, tariff and non-tariff barriers may impede trade flows.

It may be also, perhaps mainly, because intellectual property and especially patents are not a dominant consideration in many high technology industries. Waiting three years or more for a patent to be issued may not be a major consideration in deciding whether to develop new software, for instance.<sup>93</sup> Other factors may include the nature of the innovation process in that industry.<sup>94</sup>

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<sup>91</sup> In fact, those results seem at odds with Professor Mansfield's 1994 study of US business executives (E Mansfield, 'Intellectual Property Protection, Foreign Direct Investment, and Technology Transfer', Int'l Fin Corp Discussion Paper No 19 (1994)), which found that IP protection influenced mostly executives in high tech industries. For a discussion, see PJ Heald, 'Misreading a Canonical Work: An Analysis of Mansfield's 1994 Study' (2003) 10 *J Intell Prop L* 309.

<sup>92</sup> See note 84 above, 28.

<sup>93</sup> And in fact has given rise to the anti-innovative creatures known as patent trolls. See RE Thomas, 'Vanquishing Copyright Pirates and Patent Trolls: The Divergent Evolution of Copyright and Patent Laws' (2006) 43 *Am Bus LJ* 689. Professor Thomas notes (at 730–31):

The negative impact on small-entity inventors and patent consolidators is why restrictions on a court's ability to grant injunctions are attractive to info-tech companies. Info-tech and other companies that employ low development costs and fast-depreciating patents are strong supporters of this provision because the number of potential patent infringement claims they face is high. In many cases the only requirements for developing info-tech patents are programming knowledge, access to a computer, and time. [...]

The reasons that info-tech companies wish to restrict injunctive relief are the same reasons that biotech/pharma oppose such restrictions. Biotech/pharma's interests tend to be closer to those of copyright content holders in that their business model is based on selling products to end users that embody one or a very limited number of patents, whereas info-tech companies are more likely to use their intellectual property as production inputs. (footnotes omitted)

<sup>94</sup> 'ICTs and Economic Growth in Developing Countries', OECD Development Assistance Committee, DCD/DAC/POVNET(2004)6/REV1, Dec. 10, 2004. Park and Lippoldt (note 41 above) suggest that in the biotech and electronics groups, stronger patent reform has generally led to greater

## The link between IP and FDI

The traditional view on the effect of intellectual property, supported by case studies in countries such as postwar Japan, is that higher IP protection, especially of patent rights, will lead to higher inward FDI, which often has a significant technology transfer/intellectual property component.<sup>95</sup> However, in a recent analysis of the FDI component and its relation to IP, Professor Maskus concluded that many other factors influence FDI and technology transfer decisions, including market liberalization and deregulation, technology development policies and competition regimes, and a low level of corruption.<sup>96</sup> That said, as is shown by Professor Yu in Chapter 5, as regards China,

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increases (or fewer decreases) in licensing deals. However, in the computer group, the ‘medium’ reformers attracted the greatest increase in deals, whereas in the communications group, both the high and low reformers had the most gains in deals. Modest patent reform may be of some benefit to licensing activities in technological fields, such as computers and communications, where the innovation process is cumulative and sequential. Modest patent strength may better enable opportunities for knowledge diffusion and sharing of common pool resources (such as internet tools and data networks). Agreeing with Tim Berners-Lee, Stiglitz notes that in the software field, ‘patents stifle innovation’, adding that Amazon.com’s patent on one-click online purchases is ‘not the kind of major intellectual breakthrough that deserve[s] patenting’. (Stiglitz, note 13 above) 113–5.

<sup>95</sup> Park and Lippoldt explain that licensing transactions are a means by which technology can be transferred from one party to another. Although the details of individual licensing agreements vary, they can include terms referring to technical support, training and other assistance to be provided by the licensor to the licensee. They can enable the licensee to acquire the right to use new technology (subject to specific conditions) without having to undertake costly research and development (R&D), and to capitalize on the licensor’s reputation and expertise. In exchange, the licensor derives fees and royalties, can capitalize on the licensee’s local reputation and knowledge, and may obtain reciprocal licenses to any technical improvements made by the licensee (e.g. grant-backs). Thus, licensing transactions can provide for technology transfer to developing countries, while yielding mutual benefits to both parties. (See note 37 above, Executive Summary, page 2)

See also KE Maskus, ‘Intellectual Property Rights and Economic Development’ (2000) 32 Case W Res J Int’l L 471, 481–85; and KE Maskus and C McDaniel, ‘Impacts of the Japanese Patent System on Productivity Growth’ (1999) 11 Japan & World Econ 557.

<sup>96</sup> KE Maskus, ‘Intellectual Property Rights in Encouraging FDI and Technology Transfer’, in Fink and Maskus (note 84 above) 70–71; see also C Fink, ‘Patent Protection, Transnational Corporations, and Market Structure: A Simulation Study of the Indian Pharmaceutical Industry’ in *ibid*, 250–51. In his summary of a study by Ginarte and Park (JC Ginarte & WG Park, ‘Determinants of Patent Rights: A Cross-National Study’ (1997) 26 Res Pol’y 283, 285–86) Professor Maskus notes that those authors found that the strength of patent rights across countries and over time depended positively on real GDP per capita, the share of R&D in GDP, openness to international trade, and a measure of the freedom of markets from arbitrary and non-transparent government regulation. Human capital, measured by the secondary school enrolment ratio in an earlier period, was a positive and marginally significant contributor to patent rights. (Maskus, ‘IPR and Economic Development’, note 92 above, 477).

the growth of FDI does not seem to be correlated to increases in the level of intellectual property protection or political reforms, suggesting that in some cases at least, there are considerations of geopolitical or 'geocommercial' realities that trump intellectual property concerns.<sup>97</sup>

The received wisdom is that foreign firms invest internationally if there are location advantages and if it is more profitable for them to produce in that country rather than licensing their IP. Firms are more apt to invest in countries that implement strong IP protections (and to bring their IP or allow for licenses in such countries). Transnational firms may also choose to invest in vertical FDI (where different plants produce products that can be used by the plant 'above' it as an input to their product).<sup>98</sup> Yet the IP/FDI correlation is not universally supported by available data, probably because there are several other key factors at play.

The conclusions of Professor Maskus' above-mentioned study are based on data from the International Monetary Fund showing increases in inward and outward FDI between the years 1987 and 1995. Pre-2000 data may not offer ideal parameters to do a full analysis of the current situation. In many cases, IPR protection increased sharply after the TRIPS Agreement entered into force in developing countries, which, except for the least-developed ones, had until January 2000 to comply.<sup>99</sup> Interestingly, in China's case, the date of TRIPS compliance coincided with its becoming a WTO member: on December 11 2001. Another developing-country-specific study that compared African countries to India and China found significantly lower FDI numbers in Africa despite higher levels of

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<sup>97</sup> See also Y Li, 'Pushing For Greater Protection: The Trend Toward Greater Protection of Intellectual Property in the Chinese Software Industry and the Implications for Rule of Law in China' (2002) 23 U Pa J Int'l Econ L 637, 638-41; KE Maskus, 'The Role of Intellectual Property Rights in Encouraging Foreign Direct Investment and Technology Transfer' (1998) 9 Duke J Comp & Int'l L 109, 115-19 (noting that FDI increased tenfold in China prior to the introduction of TRIPS-compatible norms); M Schiappacasse, 'Intellectual Property Rights in China: Technology Transfers and Economic Development' (2004) 2 Buff Intell Prop LJ 164; Peter K Yu *et al*, 'China and the WTO: Progress, Perils, and Prospects' (2003) 17 Colum J Asian L 1.

<sup>98</sup> See CA Primo Braga & C Fink, 'The Relationship Between Intellectual Property Rights and Foreign Direct Investment' (1998) 9 Duke J Comp & Int'l L 163, 172-73.

<sup>99</sup> TRIPS, Art 65. For patents on pharmaceuticals in countries where patents were previously unavailable for inventions of that type, the transitional period ended on January 1 2005 (TRIPS Art 65(4)).

IP protection.<sup>100</sup>

The World Investment Report 2005 prepared by UNCTAD shows that FDI peaked in 1999–2000 (before or coterminous with the TRIPS implementation deadline) and then actually declined significantly in 2001, 2002 and 2003 (by 41 per cent, 13 per cent and 12 per cent respectively, before increasing by 2 per cent in 2004).<sup>101</sup> However, UNCTAD also note that ‘[t]he difference between inflows to developed countries and developing countries shrank to \$147 billion—a significant narrowing of the gap compared with previous years’.<sup>102</sup>

Another study, this one concerning the situation of FDI in so-called ‘transition economies’,<sup>103</sup> is perhaps more illuminating because those countries were, for the most part, closed to FDI until approximately 1990. The study confirmed intuitive conclusions, in particular that in IP-sensitive areas FDI is discouraged when IP protection is weak, and that, across all sectors, low IPR protection encourages foreign firms to focus on distribution rather than local production.<sup>104</sup>

In the specific area of pharmaceuticals, available data analyzed in another study illustrates that, at least for the large Indian market, the introduction of patent protection is likely to lead to increased R&D, price increases, and related welfare effects. However, research also shows that only 10.9 per cent of the top five hundred pharmaceuticals in this market are patented. Additionally, the government retained certain tools including price controls and, in cases where Article 31 of TRIPS allows, compulsory licenses.<sup>105</sup>

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<sup>100</sup> S Ragavan, ‘The Jekyll and Hyde Story of International Trade: The Supreme Court in PhRMA v Walsh and the TRIPS Agreement’ (2004) 38 U Rich L Rev 777, 789; and RM Sherwood, ‘Global Prospects for the Role of Intellectual Property in Technology Transfer’ (2002) 42 IDEA 27, 33–34 (emphasizing the need for proper enforcement mechanisms).

<sup>101</sup> Available at <[http://www.unctad.org/en/docs/wir2005\\_en.pdf](http://www.unctad.org/en/docs/wir2005_en.pdf)>.

<sup>102</sup> *Ibid.*, at 3.

<sup>103</sup> Essentially, these are countries in Central and Eastern Europe that formed part of the former Soviet bloc. Art 65(3) of the TRIPS Agreement refers to them as ‘[m]ember[s] which [are] in the process of transformation from a centrally-planned [economy] into a market, free-enterprise economy and which [are] undertaking structural reform of [their] intellectual property system[s]...’

<sup>104</sup> B Smarzynska Javorcik, ‘The Composition of Foreign Direct Investment and Protection of Intellectual Property Rights: Evidence from Transition Economies’ (2004) 48 Eur Econ Rev 39.

<sup>105</sup> Fink (note 96 above) 250–51.

The UK IPR Commission Report<sup>106</sup> presents a picture consistent with the above findings but also stresses that it is important not to consider developing countries as a homogeneous group.<sup>107</sup> In fact, a fairly well developed sequencing phenomenon exists. In an impoverished country, there is little rent that foreign firms can extract and limited innovation potential—with the possible exception of the exploitation of genetic resources or traditional knowledge, a topic to which I shall return below. Furthermore, technology to copy or improve on high technology goods is scarce, and it is unlikely that the country in question can benefit as an innovator from technology transfer. FDI is unlikely because of factors unrelated to IP, such as infrastructure, or absence of a viable domestic market. International firms take notice when a country becomes both a piracy threat and a potential market, even if the threat is limited to a fairly small percentage of the population.<sup>108</sup> While countries that implement IP norms may benefit from increased local development and inward FDI, they may also incur job losses in established copycat industries and welfare costs associated with higher local prices. However, consumers benefit from knowing they are purchasing the genuine product, especially in areas where the quality of the goods is essential.

In sum, economic analysis tends to demonstrate that sufficient IP protection is an essential component of increased inward FDI and trade flows in IP-sensitive goods for countries above a certain economic development threshold.<sup>109</sup> The trade regime

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<sup>106</sup> Note 85 above.

<sup>107</sup> Ibid, 2–3.

<sup>108</sup> For a discussion on the situation in Kenya, see JM Migai Akech, ‘The African Growth Opportunity Act: Implications for Kenya’s Trade and Development’ (2001) 33 NYU J Int’l L & Pol 651.

<sup>109</sup> A point made by Professor Cottier:

[TRIPS] rules apply (subject to extended time periods for implementation) across the board and irrespective of real competitive relations. In reality, lack of protection, or inadequate protection, is mainly felt in relation to highly competitive economies and sectors, while it remains without much impact in relation to non-competitive products. Despite lack of protection, they are not in a position to harm and displace competitive products. Intellectual property does not really matter in such constellations that may frequently be found in DCs, in particular LDCs. On the one hand, the matter could therefore be left to benign neglect of failure to fully comply with obligations. Reality largely follows this model. It is not an accident that WTO disputes on IPRs mainly exist between developed countries.

T Cottier, ‘From Progressive Liberalization to Progressive Regulation in WTO Law’ (2006) 9 J Int’l Econ L 779, 802.

(especially tariffs and non-tariff barriers), tax, and competition laws are also potent influences.

### **B. Policy Lessons of Recent Analyses**

When higher IP rules allow foreign firms to begin exporting IP-sensitive goods and services to a country, local consumers and industries gain lawful access to those products and services. This may result in welfare gains. It may also, however, lead to price increases, especially when goods whose status changes to ‘pirate’ or ‘counterfeit’ after the introduction of IPR protection are displaced by genuine goods sold at a higher price. Increased trade flows may lead to new jobs in distributorships and the retail sector, but these are likely to be low-skilled, low-paying positions. There may also be significant gains in terms of product quality and reliability, most notably in the area of pharmaceuticals.

Inward FDI is a more powerful development lever than trade. It transfers technology and usually creates jobs requiring a higher skill level. This may be the case for the manufacturing of technology-intensive goods, which requires engineering and quality-control positions, as well as management and other softer skill sets. In the best-case scenario, some research and development jobs are created, which might have spill-over effects in areas such as higher education, or local laboratories.

### **Copyright**

In the absence of sufficient rights and enforcement options in the copyright arena, one may reasonably conclude that music, films, and books are unlikely to be distributed and national cultural industries are unlikely to develop. In these areas, the gains generated by establishing sufficient protection are ‘unambiguous’.<sup>110</sup> However, the introduction or beginning of enforcement of copyrights may also lead to the closure of businesses that

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<sup>110</sup> KE Maskus, ‘Strengthening Intellectual Property Rights in Lebanon’, in Fink and Maskus (note 84 above) 286–289.

rely on copying, thus displacing (mostly unskilled) workers. Ideally, some of these workers will be able to find work in the new, creative industry jobs made possible by the adequate protection of copyrights. There is little economic benefit to be derived from selling counterfeit luxury goods (whether in terms of jobs or income or sales taxes, which might not be paid) but there are clear risks in selling counterfeit pharmaceuticals or spare parts for automobiles. In addition, new jobs created by new IP-based industries are likely to pay higher wages and stimulate creativity and reduce the need felt by local creators to live in higher protection countries as exiles.<sup>111</sup>

## **Trademarks**

Trademark protection is an essential ingredient for generating higher inward FDI. The purpose of trademarks is manifold. Trademarks protect the public by indicating the source of goods and services so that purchasers can identify the desired level of quality and receive a similar product or consistent service over time. Trademarks protect the trademark owner against commercial misappropriation of the mark and/or the goodwill associated with the mark. The value of a mark stems from the mental link between particular goods or services and a particular source that is created over time in the minds of prospective buyers. Many people will buy a product or service because, consciously or unconsciously, they associate qualities such as value, excellence, or efficiency with the trademark. A strong trademark is invaluable because the ability of a mark to raise these associations directs a potential buyer towards a company's own product or service rather than those of a competitor. Trademarks are influenced both by sellers' perceptions about buyers' psychology and the public's marketing-influenced perceptions of how goods and services are differentiated. Trademarks also serve an informational purpose: the legal protection of marks gives companies an incentive to invest in making their marks more recognizable and easier to remember so consumers can more easily identify which particular good or service they want.

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<sup>111</sup> If not physically, at least industrially. For example a book published by an author who is not a national of a Berne (or WTO) member country may still be protected if the book is first published in a member country, thus benefiting the industry of the country of publication.

As in the case of copyrights, introducing trademark protection will lead to the closure of businesses producing counterfeit goods. Some of the higher-end former counterfeiters may be able to produce non-counterfeit goods (either legal goods of the same class or licensed goods legally bearing the trademark). Counterfeit economic activity may thus be replaced by jobs in distribution, retail, and franchises.<sup>112</sup> These are, however, often low-level, low-skilled jobs. Trademark protection will also benefit consumers who will have access to ‘genuine’ goods, i.e. goods that come with the perceived assurance of quality associated with the mark via domestic or international advertising and reputation. Over time, the experience in product assembly, delivery, servicing, and management acquired through franchise and distributorship arrangements may be transferred to new, local businesses.

## **Patents**

Patents are also directly relevant. Patents do not ensure that new products will be supplied in the short term. When patent protection is unavailable, products that would otherwise infringe a patent could be made available legally for the domestic market. In terms of FDI, however, the impact is exactly the opposite, because global firms relying on patent protection need assurances about the level of protection and enforcement before considering any significant technology transfer. Fully exploiting a patent often requires expertise that is not completely disclosed in the published patent or patent application. Ongoing research and variants of the patented inventions may also exist. For this reason, firms also consider the level of trade secret protection in relation to information that, for strategic or other reasons, is not disclosed in a patent. In fact, for certain process patents, even in the presence of a presumption that a product not previously available results from a new patented process, many companies prefer not to disclose new processes in patent applications.<sup>113</sup> Direct patent-related inward FDI is often the best way to create high-

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<sup>112</sup> See Chapter 8 below (Professor Khoury).

<sup>113</sup> Art 34(1) of the TRIPS Agreement reads in relevant part: ‘if the subject matter of a patent is a process for obtaining a product, the judicial authorities shall have the authority to order the defendant to prove that the process to obtain an identical product is different from the patented process’. See [A Patent System for the 21st Century](#), SA Merrill et al (eds) (Joseph Henry Press, 2005) 20,23, available at <http://www.nap.edu/html/patentsystem/0309089107.pdf>.

paying, highly skilled jobs, and it is therefore highly sought-after by many governments willing to go to great lengths to attract foreign firms.<sup>114</sup>

Introducing patent protection produces a shock to the economy. Like trademark protection, it will lead to closures of businesses that (legally before patents were issued) were copying products or using processes developed by foreign inventors. In certain cases, as in the area of trademarks, these businesses may become legal manufacturers. In other cases, it may lead economic players to move from imitation-based models to innovation-based models, thus adding to the TRIPS Displacement Effect.<sup>115</sup>

### **C. The Displacement Effects of TRIPS**

#### **The role of the demanders**

The multinational companies that successfully lobbied to establish a linkage between IP and trade, first in the domestic U.S. context and then in the WTO, did so because of their desire to increase profit and markets or, to put it differently, to maximize rent extraction and increase the number of foreign territories into which they could consider expanding their commercial or industrial activities. Imposing this harsh medicine on developing countries created difficult situations, especially in less industrialized nations.<sup>116</sup>

However, it also created, or is leading to the emergence of, new competitors for the same companies that lobbied for TRIPS, as more developing nations at the receiving end of technology transfers and inward FDI develop the ability to innovate and compete.

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<sup>114</sup> Javorcik (note 104 above) 60.

<sup>115</sup> Introducing patents may not help R&D efforts based on imitation, because it means that exploitation of the results of imitation (at least beyond experimental use) would in many cases require a license. Moving from a lax indigenous imitative base to a “foreign seed” base model thus arguably favours countries (mostly in the West) that currently own the bulk of global patented knowledge. But shifts remain possible as innovation grey matter builds up faster in some parts of the developing world, where in addition research costs are lower.

<sup>116</sup> Now subject, however, to the postponement until July 2013 of the deadline to implement TRIPS accorded least-developed nations (TRIPS Council Decision of November 29, 2005, Extension of the Transition Period Under Article 66.1 For Least-Developed Country Members, document IP/C/40.)

Combined with a healthy dose of economic nationalism, the medium-term impacts of TRIPS, and related measures such as free trade agreements and bilateral investment treaties, the purpose of which is to bring developing countries into the Western IP system, are certainly worth pondering.<sup>117</sup> Compare Japan after World War II and now, or China in 2000 and China circa 2025.<sup>118</sup>

Then again, under pressure to increase profits and shareholder value, the multinational companies that sowed the TRIPS seed probably had no choice but to pursue this course of action.<sup>119</sup> A cynic might add that this also explains a possible tendency on the part of some of those companies—and the United States Trade Representative (‘USTR’) in bilateral agreements—not to accompany TRIPS implementation with strong measures destined to optimize local research, development, and innovation in developing countries, and thereby support the argument that patents in developing countries are best viewed as market creation tools rather than as innovation incentives (in those countries). In other words, with high intellectual property regulation in place, those companies consider these countries first and foremost as new export markets, and possibly lower-cost production centers, while maintaining the technological superiority of the West (where R&D is based), and hence, continued economic dominance. According to this view, as Professor Scotchmer noted, ‘intellectual property rights are no longer a way to encourage domestic innovation. They also become a strategic instrument to affect profit flows among nations. To affect profit flows favourably, each country wants the strongest possible protections in foreign countries, and the weakest possible protections for foreigners in its own domestic market.’<sup>120</sup>

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<sup>117</sup> KJ Vandeveld, ‘The Political Economy of a Bilateral Investment Treaty’ (1998) 92 Am J Int’l L 621, 621–23.

<sup>118</sup> J Straus, ‘The Impact of the New World Order on Economic Development: The Role of the Intellectual Property Rights System’, (2006) 6 J Marshall Rev Intell Prop L 1, 5–9, where Professor Straus describes ‘China’s commanding, complex, and almost scary development’.

<sup>119</sup> Multinational (or perhaps more accurately transnational) corporations ‘account for a major share of global R&D. Indeed, with \$310 billion spent in 2002 (United Kingdom, DTI 2004), the 700 largest R&D spending firms of the world—of which at least 98% are TNCs—accounted for close to half (46%) of the world’s total R&D expenditure and more than two-thirds (69%) of the world’s business R&D.’ UNCTAD, World Investment Report 2005 (note 101 above) 119.

<sup>120</sup> Scotchmer, Innovation and Incentives, note 53 above, 329.

The displacement of innovation is not a zero-sum game, however. In other words, it is not possible to say that for every new research dollar in the developing world, a dollar of research will leave the West. Measures on the global scale, innovation may accelerate and cross-fertilization between industrialised and developing nations will occur. The transfer of research and development to developing countries, where costs are lower and skilled and innovative labour abundant, should cause a tectonic shift in the geopolitical plates of intellectual property policy

### **The transfer of R&D to developing countries**

The demanders' plan was totally understandable from a business standpoint.<sup>121</sup> Yet, it may very well be that the powers of innovation, once unleashed and properly supported, may cut Western dominance short. From this perspective, the end result of TRIPS for many developing countries, and global welfare, would be very positive overall, especially compared with otherwise bleak economic outlooks. As Michael Ryan noted:

In the foreword to the 1998/99 World Development Report: Knowledge for Development, [then]World Bank president James Wolfensohn states that 'economies are built not merely through the accumulation of physical capital and human skill, but on a foundation of information, learning, and adaptation' and declares that in this new world economy ... the 'globalization of trade, finance, and information flows is intensifying competition, raising the danger that the poorest countries and communities will fall behind more rapidly than ever before'. ... The

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<sup>121</sup> RM Sherwood, 'Some Things Cannot Be Legislated' (2002) 10 Cardozo J Int'l & Comp L 37, 39–40. Sherwood explains that:

a robust intellectual property regime may indeed not be the objective sought for developing countries by some global elites. The TRIPS level of protection may serve their interests enough to protect their sales into those countries without requiring a level of protection sufficiently robust to encourage local firms and individuals to conduct research and make inventions. In other words, from their perspective, half a loaf for developing countries is just fine. Another way of putting this is to suggest that developing countries are asked by TRIPS to go only half way in protecting intellectual property (primarily the intellectual property of others) without going far enough to fully encourage their own inventors and investors to build national intellectual property prowess.

See also by the same author 'Global Prospects', note 96 above, 34 ('robust protection will release a great deal of energy into the economies of many of these countries').

WDR recommends that closing knowledge gaps depend upon (1) the acquisition of knowledge through trade, foreign direct investment, and licensing, (2) the absorption of knowledge through education,<sup>122</sup> and (3) the communication of knowledge through advanced information technologies. Developing countries intent upon closing knowledge gaps and reducing information problems will do so with the help [of] intellectual property institutions—trademark to facilitate consumer knowledge, patent to facilitate technology transfer, copyright to facilitate literary, artistic, and informational expression.<sup>123</sup>

In other words, and as India's 'silicon valley' centered around Bangalore has begun to demonstrate, the appropriation process that began by the limited outsourcing of low innovation coding or other functions (e.g. 'customer care' call centers) tends to evolve to progressively more complex coding tasks and higher innovation activities, leading to significant innovations in the recipient (outsourced-to) country.<sup>124</sup> The outsourced low innovation becomes a form of technology transfer and serves as a stepping stone to higher innovation functions and eventually to world-class competitiveness.<sup>125</sup> Also, while a majority of the initial client base of India's programming powerhouse may have been foreign (most US and European) entities, the potential for home-grown innovation-based industries has now risen very significantly. The same could be said of China's manufacturing industries and more recently of the exponential growth of its information

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<sup>122</sup> Learning to learn, learning to imitate, and then to adapt and innovate.

<sup>123</sup> MP Ryan, 'Knowledge-Economy Elites, the International Law of Intellectual Property and Trade, and Economic Development' (2002) 10 Cardozo J Int'l & Comp L 271, 303.

<sup>124</sup> According to one well-known commentator, the acceleration of outsourcing to India is due to the need of Western companies to deal with the Y2K 'bug', which required extensive but fairly straightforward coding. In that case, the deadline was self-evidently immovable. See TL Friedman, The World Is Flat: The Globalized World in the Twenty-First Century (Penguin Books, 2005), 131–7.

<sup>125</sup> As UNCTAD's World Investment Report 2005 notes (note 101 above), 102:

Research and development (R&D) is one source of innovation. In the early stages of technological activity, enterprises need not set up formal R&D departments. As they mature, however, it becomes increasingly desirable to monitor, import and implement technologies. R&D as a distinct activity may appear as early as the second level of complexity, where multifaceted technologies are involved or if local conditions demand significant adaptation. In a developing country, such R&D is feasible once the operation is fairly large scale and the necessary technical skills are available. The role of formal R&D then grows as the firm attempts significant technological improvements to introduce new products or processes.

technology and telecommunications sectors.<sup>126</sup>

China's R&D efforts are increasingly rapidly, and it plans to match the US innovation levels (relative to GDP) by 2020,<sup>127</sup> and should have the largest number of researchers of any country by that date.<sup>128</sup>

The possibility of very rapid growth of a country to the top of the global innovation scale is perhaps best exemplified by Israel. As Professor Trajtenberg has shown, Israelis filed less than 100 patent applications per year in the United States Patent and Trademark Office (USPTO) before 1970. That number now surpasses 1,200.<sup>129</sup> In terms of patents issued per year by the USPTO to foreign nationals, Israel's rate of growth between 1968 and 1997 was 13.3 per cent, compared to 5.5 per cent for Canada and Ireland, 2.4 per cent for Germany, and 3.1 per cent for the UK. Among the few countries that did better than Israel over this period are New Zealand (16.9 per cent); South Korea (27.9 per cent) and Taiwan (15.7 per cent). More importantly perhaps, Israel has the fourth largest number of patents per capita (after the United States, Japan and Taiwan).<sup>130</sup> Another reason for the success of the Israeli innovation strategy is its focus, with 20 per cent of more of all patents issued in only three areas: electronics, computers & communications, and

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<sup>126</sup> Christine Zhen-Wei Qiang China's Information Revolution: Managing the Economic and Social Transformation. (World Bank, 2007).

<sup>127</sup> According to the China Blawg, 'The OECD (see <[http://www.oecd.org/document/26/0,2340,en\\_2649\\_201185\\_37770522\\_1\\_1\\_1\\_1,00.html](http://www.oecd.org/document/26/0,2340,en_2649_201185_37770522_1_1_1_1,00.html)>) recently announced that this year, China's R&D spending will surpass that of Japan. Estimates have China's 2006 spending of US\$136 billion edging out Japan's US\$130 billion investment. ...The rapid increase in R&D spending in China is one aspect of its current economic development policy that is designed to make China a major innovative force in the near future. The government announced a 15-year plan last February that has R&D spending rising to 2% of GDP by 2010 and 2.5% of GDP by 2020. This would put China's R&D spending as a percentage of GDP at U.S. levels by 2020.' Available at <<http://blawg.lehmanlaw.com/english/archives/2006/12/05/199.html>>.

<sup>128</sup> According to the same OECD report, 'China, the number of researchers increased by 77% between 1995 and 2004. China now ranks second worldwide with 926,000 researchers, just behind the United States (more than 1.3 million),' The Gartner Group recently ranked India's Infosys as the most innovative software company worldwide.

<sup>129</sup> M Trajtenberg, 'Innovation in Israel 1968–1997', in AB Jaffe and M Trajtenberg, Patents, Citations and Innovations: A Window on the Knowledge Economy (MIT Press, 2002), 337–376.

<sup>130</sup> *Ibid*, 347–8. Taiwan's per capita number surpassed Israel in 1996. Taiwan would be another interesting case study.

pharmaceuticals.<sup>131</sup>

### **Developing countries as global competitors**

It is not unrealistic, therefore, to see a future where Indian, Chinese and other companies compete head-to-head with innovation-based Western enterprises (in fact, in certain industries, this process has begun). This innovation displacement effect of TRIPS and TRIPS Plus agreements may be accelerated when considering that a very significant proportion of researchers in Western laboratories are nationals of developing countries (such as India).<sup>132</sup> Since the West cannot compete on manufacturing costs and less so on productivity than before, if (when) it loses its competitive innovation advantage, the picture of the global economy may be profoundly altered, with a shift of the gravity centre. To a certain extent that would prove that those who pushed for the application of TRIPS-compliant norms to the developing world were right (at least for countries counted as success stories). As we have seen, those demanders were largely US- and Europe-based multinationals. It would amount to historical irony if they should end up losing their economic dominance as a result.<sup>133</sup>

Perhaps the plan is that, through investment and acquisition, the same capital will remain dominant in most industries, though geographically reconfigured (an issue for Western tax authorities—who may have to move massively to sales-based taxes to replace income-based revenues—but not for the companies involved).<sup>134</sup> That would explain

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<sup>131</sup> Ibid, 353. Mechanical and chemical patents constitute approximately 10 per cent (each) of the total. As of 1994, mechanical patents were still the largest category overall in the USPTO filings, with electronics, computers & communications, and pharmaceuticals standing at 15 per cent or less.

<sup>132</sup> The *Financial Times* reports that in order to compensate for the shortage of first-rate talent, the ‘clamour for brains is driving elite employers in the UK to behave like football talent scouts in India and elsewhere’. A Clegg, ‘In Hot Pursuit of the Best Brains,’ *Financial Times*, March 14 2007.

<sup>133</sup> Joseph Stiglitz reports that both the Council of Economic Advisers and the Office of Science and Technology Policy in the White House had deep reservations about TRIPS, and that he believes that ‘the way the intellectual property regime has evolved is not good for the United States and the EU; but even more, I believe it is not in the interests of the developing countries’. (Stiglitz, note 13 above, 116–7).

<sup>134</sup> One author argues that, once the proper legal system and protection is in place—and especially what he refers to as the invisible infrastructure of ‘asset management’—the conditions required for

why, both in bilateral discussions and multilaterally (to the extent that the WTO remains a viable negotiation forum for new areas), there is such an emphasis on investment liberalization.<sup>135</sup> However, it may call into question the assumption that governs US bilateral and multinational intellectual property negotiations, that US domestic interests are co-extensive with those of multinational corporations.<sup>136</sup> Multinational corporations that label themselves as American companies, rightly or not, still need the US government (and occasionally its military arm) to spur growth of new markets and level their outsourcing playing field.

In light of the high mobility of capital and innovation, the relative lack of scientists (especially compared to very high enrollment in science and engineering programs in a number of developing countries including China)<sup>137</sup>, and the higher level of business regulation in the United States and associated compliance costs,<sup>138</sup> is it fair to ask

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the 'Western' capitalist model to be moveable and innovation fully to emerge will be present. See de Soto, note 12 above.

<sup>135</sup> UNCTAD maintains a database of bilateral investment treaties. The list is impressive. As of June 1 2006 it listed 48 bilateral treaties involving the United States alone. Available at [http://www.unctadxi.org/templates/DocSearch\\_779.aspx](http://www.unctadxi.org/templates/DocSearch_779.aspx).

<sup>136</sup> CJ Forster, China's Secret Weapon: Science Policy and Global Power (The Foreign Policy Center, London, 2006) 29–30: '[w]hile policymakers regard S&T [science and technology] as a race between nations in a zero-sum game, businesses see themselves as part of a global information network ... Government officials are more concerned about stemming the flow of technologies to competitors and possible rivals who might use it for military objectives ... However, firms and businesses prefer a system that leads to the dissemination of knowledge, including to political rivals.'

<sup>137</sup> World Investment Report 2005 (note 101 above) 159ff. One should also consider the number of students from developing countries enrolled in programs in industrialized countries. The World Investment Report notes annual growth of employment in R&D in developing countries (by local and foreign entities) of 20 per cent compared to approximately 2 per cent in the West. The cumulative effect of this growth over 20 years seems to support the displacement effect theory.

<sup>138</sup> One well-known example would be the Public Company Accounting Reform and Investor Protection Act of 2002 (Pub L No 107–204, 116 Stat 745—also known as 'Sarbanes–Oxley'). According to the Financial Times, the severe restrictions on immigration after the September 11 attacks, including the major cuts in student and H1-B visas, are contributing to the shifting of research and development overseas. (This trend is also affected by the extremely unfriendly attitude of immigration officers and excessive, arbitrary deportations—their poll shows that 66 per cent of foreign travellers agreed with the statement that a simple mistake or single wrong thing could lead to detention or deportation.) The newspaper notes that 'presenting an unwelcoming face to the world has political as well as economic implications'. G Rachman, 'How to help the huddled masses through immigration,' Financial Times blog entry, March 13 2007. Available at [http://blogs.ft.com/rachmanblog/2007/03/how\\_to\\_help\\_the.html#more](http://blogs.ft.com/rachmanblog/2007/03/how_to_help_the.html#more). Rachman notes: 'A McKinsey report into America's financial services industry, also published in January, warned that New York risks losing its status as the "financial capital of the world" within 10 years. The first two

whether US prominence in innovation (and its insistence that other countries continually increase their levels of IP protection) will endure?<sup>139</sup> Is it clear that the pharmaceutical companies that drive US foreign intellectual property policy will forever remain ‘US companies’? As Chris Patten, former Governor of Hong Kong and European Commissioner for External Relations noted recently, ‘[i]f the Western front has fundamentally changed, or been broken by events and cultural disjuncture, what international configuration will emerge during the short interval of years before the rise of China and India reshapes the world’s power politics?’<sup>140</sup>

#### **D. Intellectual Property in the Future World Economy**

The latest developments in China, India and others such as Brazil and perhaps Russia<sup>141</sup>

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problems it cited were over-regulation and fear of litigation. But problem three was US immigration restrictions which are shutting out highly skilled workers.’

<sup>139</sup> As of 2003, United States was (still) home for 42.3 per cent of the top 700 R&D firms worldwide (World Investment Report 2005, note 101 above, 121). But the figure is based on dollars spent, which obscures two key factors: how efficiently the research dollars are spent, and how far can a research dollar be stretched in one country compared to another—per-employee expenditures of US firms are significantly lower in their overseas laboratories (ibid, at 122), and recent surveys show that cost and lack of manpower in industrialized nations (which slows time to market) have become major drivers of decisions about the location of R&D (ibid, 159). The recent announcement by Intel that it was moving design and manufacturing operations to Dalian (China) at a cost of \$2.5 billion (though at this stage at least, not for the most advanced chips) is yet another example of a trend that is likely to accelerate. See ‘Intel given green light for 2.5-billion-U.S.-dollar wafer facility in NE China’, People’s Daily, March 15 2007 (available at <[http://english.people.com.cn/200703/15/eng20070315\\_358013.html](http://english.people.com.cn/200703/15/eng20070315_358013.html)>). Intel set up Intel China Labs in 2000 and in April 2006 also formed an alliance with Baidu.com, a major Chinese search engine, to develop search applications for laptops, mobile phones, and home PCs. See ‘Intel, Baidu to jointly develop search apps’, InfoWorld, April 13 2006 (available at <[http://www.infoworld.com/article/06/04/13/77407\\_HNintelbaidusearch\\_1.html](http://www.infoworld.com/article/06/04/13/77407_HNintelbaidusearch_1.html)>).

<sup>140</sup> Chris Patten, Not Quite the Diplomat (Penguin, 2006), 2. Mr Patten also questions the recent move by the United States government away from multilateral forums: ‘[t]here are other and better ways of asserting the primacy of values in which America has always believed than ultimate dependence on exceptionalism: doing whatever America wishes to do because she can get away with it. ... international agreements and the rule of law offer more effective ways of guiding the international community and protecting America’s interest’ (ibid, at 307).

<sup>141</sup> The four so-called BRIC countries. It seems the term was first prominently used by Goldman Sachs investment bank in 2001 in Global Economics Paper No. 99: ‘Dreaming with BRICs: The Path to 2050’, available at: <<http://www2.goldmansachs.com/insight/research/reports/99.pdf>>. See also ‘The BRICs Dream: Web Tour’, July 2006, available at: <<http://www2.goldmansachs.com/insight/research/reports/report32.html>>. See also RC Bird, ‘Defending Intellectual Property Rights in the BRIC Economies’ (2006)43 Am Bus LJ 317, 347.

beg the question whether imitation is a necessary phase of industrial development (defined here as a movement towards Western-style capitalism with a strong emphasis on innovation).<sup>142</sup> It could be argued that the imitation phase is essential to internalize the ‘global’ state of the art in any given field. In other words, before one can begin to innovate, one must know what the most advanced thinking is around the world.<sup>143</sup> Then, perhaps, one can invent improvements and obtain intellectual property protection. Naturally, one must have the intellectual, technical and material tools to access and process this global state of the art before improvements or adaptations can be envisaged. This explains the heavy emphasis on education in technical assistance analyses and in the last part of this chapter.

To take an example, the notion of novelty in patent law is generally defined as worldwide novelty, meaning that any element of prior art anticipating the invention claimed anywhere in the world will be sufficient cause to refuse the application. As a result, and also owing to the global nature of trade flows (especially in ideational goods and services), innovation is necessarily a global business and a huge step up for most developing countries. A possible exception are products and services, including variants of existing ones, developed to cater to the needs of consumers in a specific developing country or region. If that is correct, then those countries that had begun their growth and the imitation phase prior to TRIPS implementation may have benefited from a head start. For now, however, large exporting firms are the clearest winners.<sup>144</sup>

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<sup>142</sup> Imitation is still widely practiced in the West, as art of the innovation process, notably in the form of reverse engineering.

<sup>143</sup> To benefit from the patent system, innovators must be aware of the global state of the art. To become so, they should familiarize themselves with published patents and applications (most of which are published 18 months after filing). As Jaffe and Trajtenberg’s research has shown (see note 122 above), patents are a window on the process of technological change and a powerful tool for research on the economics of innovation. Patent records contain a wealth of information, including the inventors’ identity, location, and employer, as well as the technological field of the invention. Patents also contain citation references to previous patents, which allow one to trace links across inventions. On the impact on national innovation policy, see D Archibugi and S Iammarino. *The Globalization of Technology and National Policies*, in D Archibugi and B-A Lundvall. *The Globalizing Learning Economy* (Oxford, 2002).

<sup>144</sup> E Su, ‘The Winners and the Losers: The Agreement on the Trade-Related Aspects of Intellectual Property Rights and Its Effects on Developing Countries’ (2000) 23 *Hous J Int’l L* 169, 214.

Another, related question worth asking is whether the Western economic institutions and capitalism are coterminous, or whether they are just an instantiation of a (somewhat ‘free’) market economy. Perhaps technological innovation can be woven into different social and economic fabrics, thus creating what Charles Taylor refers to as ‘multifaceted’ capitalism—the South may be redefining capitalism, and the broadly-held assumption that a free market may not exist without certain rights and freedoms (e.g. freedom of expression) may very well be proven wrong. Arguably, China, which is much less free than India, for instance, has been doing better over the past ten years.

What seems inescapable, however, is the move towards modernity, which I would define for the purposes of this chapter, and using Taylorian terminology again, as moving to a rational moral order in which, following neo-Stoic teachings (Grotius) and Locke, ‘economic (i.e. ordered, peaceful, productive) activity has become the model for human behaviour and the key to harmonious existence’.<sup>145</sup> Ideology- or religion-based social orders, including those interpreted as excluding women or social classes or fearing innovation and change, cannot hope to succeed in this scenario.<sup>146</sup> This child of the Enlightenment we call modernity is not something that innovative societies can easily avoid inviting to their economic dinner table. ‘The Eighteenth-century transition is in a sense a crucial one in the development of Western modernity...[it] generated new, stadiial theories of history, which saw human societies developing through a series of stages, defined by the form of their economy (e.g. hunter–gatherer, agricultural), culminating in the contemporary commercial society.’<sup>147</sup>

Globalization also has a potential impact on governance worth mentioning here. The globalization of media, in particular the internet, feeds the various social imaginaries. For one thing, it provides new images of what is, and of what is possible. This is crucial because, as Taylor’s insightful analyses have shown, a perception of what is possible widens the array of norms that are realizable. In other words, people don’t fight for

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<sup>145</sup> Charles Taylor, *Modern Social Imaginaries* (Duke University Press, 2005), 15.

<sup>146</sup> To quote Taylor again, ‘[i]ndividualism and mutual benefit are the evident residual ideas that remain after you have sloughed off the older religions and metaphysics’ (ibid, 18).

<sup>147</sup> Ibid., 48.

utopia, but can move into action for something they know they can achieve.

The passage of time likely will show that some of the (Western) institutions we associate with an innovation-based capitalist economy are not in fact a necessary ingredient of a society that is able to compete (using the same science of course) with the West. It will be interesting to see whether Western-style democracy is but an idiosyncratic variant of modernity. Put differently, while stadial analysis is indeed inexorable, there may not be a single path forward and the very direction of technological progress may be altered as a result.

### **Part III Towards a Comprehensive Knowledge and Innovation Strategy**

Wealth in the age of flatness will increasingly gravitate to those countries who get three basic things right: the infrastructure to connect as efficiently and speedily as possible with the flat world platform, the right education programs and knowledge skills to empower more of their people to innovate and do value-added work on that platform, and, finally, the right governance—that is, the right tax policies, the right investment and trade laws, the right support for research, the right intellectual property laws, and, most of all, the right inspirational leadership.<sup>148</sup>

#### **A. Developing a Calibrated Innovation Policy**

Many of the studies cited in Part II of this chapter insist on the fact that sufficient and adequate intellectual property protection is but one ingredient in a complex recipe to achieve innovation-based economic development. IPR protection is essential, but in itself insufficient to ensure growth. As Hernando de Soto noted in that respect:

By stabilizing and adjusting ‘the book,’ the globalizers’ macroeconomic programs

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<sup>148</sup> Friedman, note 124 above, 329.

have dramatically rationalized the economic management of developing countries. But because their book does not address the fact that most people do not have property rights, they have done only a fraction of the work required to create a comprehensive capitalist system...Because they concentrated only on policies dealing with the aggregates, they did not inquire whether people had the means to participate in an expanded market system.<sup>149</sup>

### **Refocusing the policy lens**

Every developing country (or perhaps in some cases, region) wishing to succeed in a global knowledge-based economy should aim to develop a national innovation (eco)system,<sup>150</sup> which is “constituted by elements which interact in the production, diffusion and use of new, and economically useful, knowledge”.<sup>151</sup> Unfortunately, there has been a myopic focus on the IP norms themselves which resulted in narratives being devised to justify minimalist or maximalist interpretations of TRIPS and related implementations and technical assistance initiatives. Yet intellectual property is but one train in a comprehensive knowledge and innovation policy, and the trains of surrounding norms and policies must also make it to the station if the objective is to be attained. By themselves, intellectual property rules arguably benefit mostly major owners of intellectual property, who are largely concentrated in a few highly industrialized countries.<sup>152</sup>

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<sup>149</sup> de Soto, note 12 above, 211.

<sup>150</sup> A term popularised by Bengt-Åke Lundvall. B-Å Lundvall (ed.) National Innovation Systems: Towards a Theory of Innovation and Interactive Learning, (Pinter, 1992).

<sup>151</sup> Ibid, at 2. Stan Metcalfe provides a more complete definition: “ set of distinct institutions which jointly and individually contribute to the development and diffusion of new technologies and which provides the framework within which governments form and implement policies to influence the innovation process. As such it is a system of interconnected institutions to create, store and transfer the knowledge, skills and artefacts which define new technologies.” JS Metcalfe “The Economic Foundations of Technology Policy: Equilibrium and Evolutionary Perspectives”, in P. Stoneman (ed.), Handbook of the Economics of Innovation and Technological Change, (Blackwell, 1995). See also Organisation for Economic Co-operation and Development. National Innovations Systems (OECD, 1997), available at <http://www.oecd.org/dataoecd/35/56/2101733.pdf> .

<sup>152</sup> According to UNIDO, 94 per cent of all privately-funded research and development was located in those countries during the 1990s. See UNIDO, Industrial Development Report 2002/03 (Vienna: UNIDO, 2002).

Most of the narratives that try to explain the emergence of TRIPS (discussed in Part I.A of this chapter) often focus on the negative context for developing countries. Not surprisingly, they gave birth to implementation narratives I categorized as ‘subtractive’ because of their insistence on minimalist TRIPS implementation. In the meantime, certain lobbies, with the support of key players, insist on increasing the protection to TRIPS Plus levels in bilateral and regional discussions. Both approaches are flawed. To successfully exploit intellectual property, to maximize its economic growth in areas that are information- and intellectual property-intensive, and to be able to produce goods and services with a higher ideational content (which is what intellectual property rules tends to protect), each country needs a comprehensive knowledge optimization strategy. This may include using to the maximum extent TRIPS flexibilities in certain areas, but not in others.

Innovation often proceeds along the following sequence: first a country imitates foreign technology (the *imitation* phase) which itself requires some technical skills); then it modifies the foreign technology to suit domestic needs and markets (the *local innovation* phase); then it produces innovations (whether new products or processes or improvements of existing ones) which are globally competitive (the *global innovation* phase). A strong intellectual property system will be required to support phase III. It will also be particularly helpful in phase II. Conflicts which may arise due to the need to license the foreign technology to which an improvement is made or applied often can be solved through licensing (market forces) or if that fails, by the issuance of a dependent patent compulsory license (as allowed under TRIPS Article 31(1)).

Policy makers, especially those from more advanced developing and merging economies, may be well advised to focus more on developing domestic innovation than to limit rent-seeking efforts by foreign multinationals.<sup>153</sup> The latter is a short-term fix in a much more

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<sup>153</sup> Shari L Boyd *et al*, ‘Agricultural Biotechnology Innovations *Versus* Intellectual Property Rights: Are Developing Countries at the Mercy of Multinationals?’, (2003) 4 *J World Inv* 211, 212, where the authors note:

...the real question is not how to prevent multinational biotechnology firms from exploiting developing countries, but rather, how to induce them to want to exploit developing countries. Multinationals lining up to extract monopoly rents from developing countries would be the surest sign that investments in the desired innovations are taking place. Unless developing countries or aid-givers are willing to subsidize biotechnology tailored to developing countries—and there is no evidence to suggest they will—the investment will simply not take

complex, longer-term effort to establish, maintain or enhance competitiveness in an increasingly intangible world trading system. In other words, the adequate (not minimal) protection of commercially or industrially relevant knowledge forms part of an optimal strategy.

If the above seems a fair conclusion in light of the studies discussed in Part II of this chapter, then those studies are also illuminating by what they do not and perhaps cannot show. It is extremely difficult to isolate the importance of the intellectual property factor in the growth of bilateral trade flows and FDI. It is even more difficult to determine ex ante what the optimal level of protection is. This is partly due to the fact that the TRIPS Agreement imposes global minimum standards, and there remain very few statistically significant options to compare various levels of protection below that floor. Ex post analysis is not a policy panacea either due to the uneven quality of econometric studies, in turn due to the quality of available (versus ideal) field of empirical data. However, I suggest that what is a problem in theory actually forms part of the solution once we shift to policy setting.

### **The future of TRIPS**

The TRIPS Agreement is the strongest normative vector in setting intellectual property policy. In other words, because WTO members cannot legislate below the TRIPS levels without incurring the risk of dispute-settlement proceedings under the Dispute-Settlement Understanding,<sup>154</sup> and because it is unlikely that TRIPS norms will be diluted in the Doha Round,<sup>155</sup> it would seem to be pragmatically justified to take TRIPS as a given quantity in

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place.

<sup>154</sup> WTO Agreement, Annex 2, Understanding on Rules and Procedures Governing the Settlement of Disputes, Annex 2, Legal Instruments—Results of the Uruguay Round, Vol 31, 33 ILM 112 (1994). See also Gervais, The TRIPS Agreement, note 20 above, 340–44. One should note that not all countries are equal when it comes to the DSU. The EU and US have resisted applying decisions of the DSU that found their legislation incompatible with their WTO obligations. The long-standing dispute between the EU and the so-called ‘dollar banana’ countries (Conditions for the Granting of Tariff Preferences to Developing Countries, document WT/DS246/AB/R) is an example, while in the United States a panel decision concerning the incompatibility of exceptions contained in s. 110(5)(b) of the Copyright Act rendered in 2000 remains unimplemented as of this writing (May 2007).

<sup>155</sup> Gervais *ibid.*, 43–51.

the policy equation. The remaining parts of the equation are to determine how the reasonably available flexibility in implementing the Agreement should be used, which should only be done, I would submit, as part of a comprehensive domestic strategy. I argue that integrating TRIPS norms into such a strategy is tactically sound because (a) by and large TRIPS strikes an adequate balance if properly implemented and (b) TRIPS is here to stay.

And TRIPS is working in a number of emerging economies, to the extent that it has brought innovators based in those countries to the global IP table.<sup>156</sup> For example, in Korea PCT applications have jumped from 196 in 1995 to 4,422 in 2005;<sup>157</sup> in China, from 103 to 2,501 over the same period; in Brazil, from 67 to 275; and in India, from 0 to 675.<sup>158</sup> Trademark applications have also shown significant increases.<sup>159</sup>

What emerges below as a strategy is thus a series of measures designed to nominally implement TRIPS rules and find loopholes that essentially shrink the protection away. Certain proposed interpretations of Articles 27 and 30 of TRIPS,<sup>160</sup> or the fact that the Agreement in many cases imposes no clear rules as to the ownership of IPRs, may mean that a country can formally implement TRIPS while systematically disempowering parts of it through legal ‘gimmickry’, while ‘getting away with it’ as far as the WTO dispute-settlement system is concerned. The objective of this chapter is not to suggest ways to

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<sup>156</sup> Owing to the postponement until 2013 of the implementation deadline, the discussion really should focus on developing, not least-developed countries. See note 79 above.

<sup>157</sup> WIPO Statistics. Available at <<http://www.wipo.int/ipstats/en/statistics/pct/index.html>>.

<sup>158</sup> Ibid,

<sup>159</sup> WIPO Statistics. Source: <<http://www.wipo.int/ipstats/en/statistics/marks/>>.

<sup>160</sup> For example, UNCTAD recently suggested that

The exclusions in Article 27:3 are framed more narrowly, yet again leave substantial room for interpretation. For example, Article 27:3(a) permits the exclusion of ‘therapeutic methods’ for the treatment of humans. The use of pharmaceuticals is a method of therapy for treating human health conditions, and so arguably ... a Member could exclude the use of drugs for medical treatment from patent protection.

UNCTAD. Course on Dispute Settlement: WTO: Module 3.14 TRIPS, UNCTAD/EDM/Misc.232/Add.18, <[http://www.unctad.org/en/docs/edmmisc232add18\\_en.pdf](http://www.unctad.org/en/docs/edmmisc232add18_en.pdf)> (2003), 20.

I do not believe that a WTO DS panel would agree with this interpretation. On Article 30, the same report indicates that ‘[t]he ordinary meaning of the terms in Article 30 would appear to allow considerable flexibility to Members in adopting exceptions to the rights of patent holders’ (ibid, 22) which may create a sense of ‘flexibility’ that many a panel might not necessarily agree with.

avoid being found ‘guilty’ by a WTO panel. Rather, it is to optimize knowledge and economic development using TRIPS rules as an ingredient. This may involve some flexibility in the TRIPS implementation process but as part of a comprehensive strategy.

## **B. Striking the Right Balance**

...our goal, which we hope is one that can be shared by all Member States, of ensuring that the international IP system functions for the good of all, with benefits outweighing any costs and in a way which encourages, and does not hinder, sustainable economic, social and cultural development.<sup>161</sup>

### **Defining balance**

Balance is ostensibly what every policy maker is striving towards.<sup>162</sup> But what is it? It is not, contrary to what one often reads or hears in policy debates concerning intellectual property, a simple axis with rights holders at one end and users of intellectual property on

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<sup>161</sup> Proposal by the United Kingdom to the Inter-Sessional Intergovernmental Meeting on a Development Agenda for WIPO (Annex), WIPO Document IIM/2/3, June 14, 2005.

<sup>162</sup> Examples include: Federal Trade Commission, ‘To Promote Innovation: The Proper Balance of Competition and Patent Law and Policy Executive Summary’ (2004) 19 Berkeley Tech LJ 861; S Rodriguez Hurley, ‘Failing to Balance Patent Rights and Antitrust Concerns: The Federal Circuit’s Holding in In Re Independent Service Organizations Antitrust Litigation’ (2003–4), 13 Fed Circuit BJ 475; PJ Gardner, ‘US Intellectual Property Law and the Biotech Challenge: Searching for an Elusive Balance’ [2003] BJ 28; H Soehnge, ‘The Drug Price Competition and Patent Term Restoration Act of 1984: Fine-Tuning the Balance Between the Interests of Pioneer and Generic Drug Manufacturers’ (2003) 58 Food & Drug LJ 51; KE Maskus and EV Wong, ‘Searching for Economic Balance in Business Method Patents’ (2002) 8 Wash U JL & Pol’y 289; A Lacayo, ‘Seeking A Balance: International Pharmaceutical Patent Protection, Public Health Crises, and the Emerging Threat of Bio-Terrorism’ (2002) 33 U Miami Inter-Am LR 295 ; JS Golian, ‘Without a Net: The Supreme Court Attempts to Balance Patent Protection and Public Notice in Festo Corp v Shoketsu Kinzoku Kogyo Kabushiki Co’ (2003) 36 Creighton LR 541; J Langenfeld, ‘Intellectual Property and Antitrust: Steps Toward Striking a Balance’ (2001) 52 Case W Res L Rev 91 ; JA Harrelson, ‘TRIPS, Pharmaceutical Patents, and the HIV/AIDS Crisis: Finding the Proper Balance Between Intellectual Property Rights and Compassion’ (2001) 7 Widener L Symp J 175; T Klein, ‘The Uncertain Balance Between Parody and Trademark Rights’ (2001) 12 J Contemp Legal Issues 356; RG Frenkel, ‘Intellectual Property in the Balance: Proposals for Improving Industrial Design Protection in the Post-TRIPS Era’ (1999) 32 Loy LA L Rev 531; AN Littman, ‘Restoring the Balance of Our Patent System’ (1997) 37 IDEA 545; JC Yates and MR Greenlee ‘Intellectual Property on the Internet: Balance of Interests Between the Cybnauts and the Bureaucrats’(1996) 8:7 J Proprietary Rights 8.

the other. For one thing, there is no uniform categorization that holds up to serious scrutiny. All rights holders have to get their ‘inspiration’ from somewhere or someone.

How can a government who wishes to do so adopt a ‘balanced’ innovation policy? Should that government err on the side of high protection or rather protect the ‘public domain’ and limit protection until a need for protection is shown? Should it take the policy gamble of increasing protection to see if it produces positive results without major or even overwhelming negative externalities? Clearly, it seems easier to make intellectual property ex post facto and adjust the framework, rather than wait for a perfect model to emerge from theoretical analyses. That analysis is complex, inter alia, because of the many sectors of intellectual property (and sub-sectors: should industrial machines, business models, biotechnology, HIV drugs and chemical agricultural products be treated the same because they are protected by patents?). I suggest that not only should a government favour a ‘balanced’ approach, it must also decide where to intervene and when.<sup>163</sup>

Balance, then, is far from being a simple game of ‘pulling covers’ and trying to please the often short-sighted demands of lobbies representing rights holders or various users or public interest groups. Balance means achieving an optimal degree of protection, which appropriately protects and rewards creativity and ingenuity, thus providing a good incentive to continue, while not deterring others’ creativity and inventiveness. That optimal point is hard to define, and in fact will likely vary from country to country based on socio-economic, industrial and even cultural factors.

### **A balanced TRIPS implementation**

Because TRIPS establishes a uniform normative ‘common denominator’, its implementation should be a combination of a careful analysis of the proper intellectual

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<sup>163</sup> Stiglitz suggests that in developing countries he sees ‘government having a more active role, in both promoting development and protecting the poor... While markets are at the center of any successful economy, government has to create a climate that allows business to thrive and create jobs. It has to construct physical and institutional infrastructure—laws ensuring, for instance, a sound banking system and securities markets in which investors can have confidence...’ (note 13 above, 27).

property policy of a country or region, and use of flexibility left in TRIPS to achieve this policy objective. That determination of the most appropriate TRIPS-compatible legal framework must then be combined with corresponding policies in relevant sectors, use of systems such as compulsory licensing but only where appropriate, etc, as well as training of government and private sector players. Developing countries gain more by integrating TRIPS norms in a broader innovation and knowledge optimization strategy. As with market openness, intellectual property rules per se are at best a catalyst.

The suggested approach is not incompatible with the views of, e.g. UNCTAD, which wrote in its 2004 Trade & Development Report:<sup>164</sup>

...most of the evidence suggests that the impact of trade openness has been highly uneven, and contingent on a variety of institutional factors, and that there is room for discretionary policy measures at the micro and macro level.

A more balanced perspective, also taking its cue from Adam Smith, links a process of successful integration back to productivity gains from specialization, gains that are amplified through innovation, the use of better equipment, scale economies at the firm level and by ‘externalities’ such as learning and improvements in human capital. This ties economic success to a heightened degree of economic interdependence through the mutually reinforcing interactions between expanding markets and an increasingly complex division of labour. Extending and deepening such interactions depends on new investments under conditions of objective uncertainty. To improve and expand existing capacity as well as to introduce new products and processes, a ‘profit-investment nexus’ is needed that requires supporting financial arrangements, including accommodative monetary policy and relatively stable legal institutions.<sup>165</sup>

And further:

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<sup>164</sup> UNCTAD (note 78 above).

<sup>165</sup> Ibid,79.

...the openness agenda has perpetuated a lopsided view of the forces driving economic integration. It stresses the potential gains from participation in international markets while downplaying adjustment costs, and it stresses convergence tendencies while ignoring potential sources of cumulative divergence. As the previous sections have suggested, this approach has its limitations. Trade is just one among several interrelated factors shaping integration. Its impact is largely contingent on the presence of dynamic forces—specialization, learning and innovation, scale economies and capital formation—that do not respond in a simple or predictable way to the incentives generated from rapid opening up. Strengthening these forces requires a series of complementary institutional reforms and discretionary macroeconomic, industrial and social policy measures. This implies considerable diversity in the pattern of integration, even among countries at similar levels of economic development.<sup>166</sup>

True, importing intellectual property rules wholesale into the legislative and industrial fabric of a developing economy is insufficient for that country to succeed.<sup>167</sup> However, it is fair to assume that a country's technology imports and inward FDI are unlikely to grow without intellectual property rules. We can conclude that (a) intellectual property rules are required but insufficient; (b) it is more pragmatic to accept TRIPS (which does not mean that efforts to develop alternative sets of norms are ill-founded); and (c) intellectual property rules must be properly calibrated as part of a broader domestic innovation and knowledge optimization strategy.

Except perhaps in specific areas such as traditional knowledge protection, it would be

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<sup>166</sup> Ibid, 95.

<sup>167</sup> That point was well articulated in the Report of the UK Commission on Intellectual Property Rights, note 85 above, Executive Summary, 5:

...it may be unwise to focus on TRIPS as a principal means of facilitating technology transfer. A wider agenda needs to be pursued, as is currently being done in the WTO. Developed countries need to give serious consideration to their policies for encouraging technology transfer. In addition, they should promote more effective research and cooperation with and among developing countries to strengthen their scientific and technological capabilities..

counterproductive to focus all efforts on the development of new and independent rules, for at least two reasons. First, there is little if any evidence that a new form of intellectual property or even variations on known themes would work better. Second, there would be huge transition costs and friction in convincing foreign partners of the validity of such new or customized rules. For multinational corporate investors, there is value in predictability and dealing with a known set of regulatory parameters.

The policy flexibility needed by developing economies is partly there in TRIPS. More importantly, by developing a comprehensive strategy, a country can limit the negative impact of moving to higher intellectual property protection and increase its chances of reaping the benefits thereof, including technology-related FDI and growing domestic internet, pharmaceutical or other technology-based industries.

### **C. Towards a National Knowledge and Innovation Strategy**

Intellectual property rules per se do not automatically lead to better or more innovation and (commercially exploited) creativity. By themselves, they do not even achieve the limited purpose of increasing inward FDI. This is what has prompted many developing countries to insist on the technology transfer part of the TRIPS bargain, which is enshrined in Article 66.2,<sup>168</sup> as well as capacity building under Article 67. This is linked to the quest for an intrinsic equilibrium in the way intellectual property protection is implemented, measured country by country (even in the face of uniform multilateral rules).<sup>169</sup>

Granted, the task at hand is not a simple one. Yet, instead of devoting major efforts to

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<sup>168</sup> Which reads as follows: ‘Developed country Members shall provide incentives to enterprises and institutions in their territories for the purpose of promoting and encouraging technology transfer to least-developed country Members in order to enable them to create a sound and viable technological base.’ The Council for TRIPS is actively following the implementation of this provision, notably by requiring reports on technology transfer initiatives taken by developed countries. See the WTO Annual Report 2005, 13 (available at <[http://www.wto.org/english/res\\_e/booksp\\_e/anrep\\_e/anrep05\\_e.pdf](http://www.wto.org/english/res_e/booksp_e/anrep_e/anrep05_e.pdf)>). See also WTO document IP/C/W/431 and addenda for a summary of the information provided.

<sup>169</sup> Note 56 above and accompanying text.

turning back the clock on extant liberalization and intellectual property rules, I suggest that they can be put to good use. There is no room in this chapter to cover all aspects of a comprehensive knowledge optimization strategy, the primary purpose of which would be to strengthen a country's economy and its growth. Indeed, each one of the headings below could be the topic of an entire book (and some in fact have been). However, the following paths are probably some of those that could be followed.

### **Priority setting and Enhancing Domestic Innovative Capabilities**

'IPRs without technology capacity building can do little.'<sup>170</sup>

Based on existing industrial infrastructures, successes, education programs, available natural and human resources, and potential domestic and regional markets, what are the realistic areas that a country should prioritize<sup>171</sup>? The primary target of a National Knowledge and Innovation Strategy should not be to obtain new imports, though they may be useful, but rather to build domestic intellectual property generating activities, in part through FDI (which almost always includes a knowledge and technology transfer component) and technology transfer and acquisition.<sup>172</sup>

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<sup>170</sup> H Salar Amoli and A Shamsavari, 'Modernisation of national Intellectual Property legislation in IR Iran and its effect on technology transfer through Foreign Direct Investment' (2006) 3:3 World Review of Science, Technology, and Sustainable Development 223.

<sup>171</sup> Some scholars (eg H Ergas, *The Importance of Technology Policy*, in: Dasgupta, P., Stoneman, P. (eds.), Economic Policy and Technological Performance, (Cambridge University Press, 1987) have used a taxonomy which 'distinguishes *mission-* and *diffusion-oriented policy designs* to classify and analyse national systems of innovation. Mission-oriented systems are characterised by centralisation and the concentration of policy support on a small number of technologies and larger firms, unlike diffusion-oriented systems which concentrate their policy efforts on increasing an economy's capacity of innovating by concentrating on the scientific infrastructure, technology transfer and cooperation, i.e. formal and informal relationships between different actors etc.' U Cantner and A Pyka. *Classifying Technology Policy from an Evolutionary Perspective* (Thesis, Augsburg Economics Institute, 1999). Available at <http://www.wiwi.uni-augsburg.de/vwl/institut/paper/184.pdf>. The taxonomy is useful bit for most developing countries, I suggest that concentrating on specific sectors may be required to optimize the use of available resources.

<sup>172</sup> The Arab countries' proposal to WIPO on its Development Agenda (Proposal by the Kingdom of Bahrain on the Importance of Intellectual Property in Social and Economic Development and National Development Programs, WIPO document IIM/2/2, June 14 2005, Annex, at p 6 of Annex) contained the following:

As a first step, Member States should be encouraged to and assisted in setting up national strategies on intellectual property, which identify areas of strength and weakness in dealing

Developing WTO members who want to maximize the benefits of TRIPS (while minimizing negative effects and associated welfare costs) should apply outcomes of priority-setting exercises to idea-management strategies and help provide their domestic enterprises with idea management tools. As Professor Hargadon noted, the purpose of idea-management strategies is to 'link people, ideas, and objects together in ways that form effective and lasting communities and technologies'.<sup>173</sup> Another commentator suggested that 'a network-based idea management tool can be understood as a mechanism for transforming tacit, intangible human capital into explicit, tangible structural capital. Intellectual capital in explicit form can be managed, manipulated, exposed to and combined with other tangible and intangible resources and objects—people, funds and other ideas, for example. This is the intended function of idea management...'.<sup>174</sup>

A strategy should include ways to develop the ability of the local economy to network private and public sector stakeholders, thereby increasing its ability to integrate and internalize innovative processes. As the OECD noted in its well-known report on national innovation systems:

“New types of policies are needed to address systemic failures, particularly policies directed to networking and improving firm absorptive capacities. Networking schemes put emphasis on improving the interaction of actors and the interplay of institutions within national innovation systems. Such policies stress the role of joint research activities and other technical collaboration among enterprises and with public sector institutions.”<sup>175</sup>

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with intellectual property systems. Remedies should be found for weak areas and areas of strength should be further enhanced with a view to attaining a successful and efficient functioning of the intellectual property system.

<sup>173</sup> A Hargadon, How Breakthroughs Happen: The Surprising Truth about How Companies Innovate (Harvard Business School Press, 2003).

<sup>174</sup> JC Stratton, 'Idea Work Style—A Hypothetical Web-Based Approach to Monitoring the Innovative Health of Organizations' in J T Yao and P Lingras (eds). WSS 2003: WI/IAT 2003 Workshop on Applications, Products and Services of Web-based Support Systems (Halifax, 2003), 69, 70.

<sup>175</sup> OECD. National Innovation Systems, note 151, at 41.

Technology transfers can and should be part of this type of strategy. Technology transfers related to FDI are subject to appropriation, within the boundaries of applicable contracts and intellectual property rights. In certain countries they have become major stepping stones for domestic innovation. In order to compete in a knowledge-based global economy, emerging and developing countries must be able to innovate by improving on the worldwide state of the art and/or adjusting existing products and processes to local and regional preferences. The notion of novelty in patent law is a global one and presents no less of a challenge to policy makers. Innovators must be able to go forward and not forced to reinvent the wheel.<sup>176</sup> According to economic theory, innovation policies should be designed to balance the incentives to invest in innovative activity with the promotion of technology transfer.<sup>177</sup> An appropriate research exemption should thus be considered.<sup>178</sup> However, innovation should also be encouraged by providing venture capital and seed investments funnelled through innovation incubators. This type of early capital to bring innovation to the marketplace is often the most difficult step for innovators, and appropriate assistance is generally required.<sup>179</sup>

### **Education and Institutional Capacity Building**

This is probably the most important aspect once priorities have been set. Education, both in the country and abroad, is the cornerstone of a viable, long-term knowledge strategy and economic growth in the information society. Technical education is necessary to understand the state of the art in any technological field. Training is also required to understand how to use patent search and other intellectual property-related tools.<sup>180</sup>

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<sup>176</sup> AJ Glass, 'Costly R&D and Intellectual Property Rights Protection' (2000) 19:1–2 International Journal of Technology Management.

<sup>177</sup> C Dent, P Jensen, S Waller & B Webster, 'Research Use of Patented Knowledge: A Review', OECD Directorate for Science, Technology and Industry (STI), STI Working Paper 2006/2.

<sup>178</sup> See Chapter 15 (Epilogue) below.

<sup>179</sup> In fact, Hernando de Soto argues that the ability to leverage assets to raise capital, in particular through efficient property documentation (which allows assets to acquire a financially fungible nature using a representational system not functionally limited to identifying ownership), linked to a reasonably transparent and enforceable securitization process, is what differentiates the Western economies from most developing countries (note 12 above). He also notes that many developing countries are 'very much like the United States of a century ago' (ibid, 9).

<sup>180</sup> Patent databases are publicly available. By mining recent patents and published applications (which typically implies an 18-month delay after the initial filing—unfortunately, in certain industries,

Universities play a crucial role in the development of a national innovation system, and in any innovation infrastructure. Universities are ‘relied on for the training and retraining of scientists, engineers, and technically qualified personnel. [...] Universities and public laboratories are relied on for undertaking basic research. [...] In the early stages of technological development, public R&D institutions play a particularly critical role by assimilating and diffusing foreign technologies at a time when dependence on such technologies is strongest. [...] Finally, public research institutes and university laboratories affect innovation through their interaction with industry and society at large.’<sup>181</sup>

Initially, a country could send some of the best students to the top foreign universities, especially in fields where the knowledge brought back can directly contribute to the strategy in light of priorities set. This could include engineering, biology, chemistry, physics, and all other sciences, but also in almost all cases management and law. In science, engineers, scientists, and technicians are equally important.<sup>182</sup> Financial mechanisms might be used to ensure that trained graduates will return to their country of origin—if a country does not have patent protection, it will have a hard time attracting technology-oriented employers and will have a hard time retaining nationals that have studied in this area.<sup>183</sup> As a second step, world-class universities and research centers may then be established in the country, directly or in partnership with major foreign

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much can happen in 18 months) and providing copies to local companies with product development abilities, a number of upward technological steps may be taken fairly rapidly. Of course the obligation to comply with TRIPS means that if the patent is granted in the developing country in question, the technology cannot be used directly, but even a reasonable license cannot be obtained, the knowledge could be used, e.g. for non-commercial research. As was noted by the UK Commission on Intellectual Property Rights, TRIPS allows a WTO Member to determine an appropriate interface between intellectual property and competition law (Arts 8 and 40). However, many countries that implemented TRIPS recently did not and still do not have competition legislation.

<sup>181</sup> B I Abdelgafar, note 4 above, 68-9.

<sup>182</sup> See JH Barton, ‘New Trends in Technology Transfer (ICTSD Issue Paper No. 18)’ (ICTSD, 2006), at viii: ‘The reduction of inventions to commercial application usually also requires skilled entrepreneurs and, depending on the particular field, skilled mechanics, lab technicians, or software writers. Many of the same skills are needed for the thoughtful adoption and application of a technology developed elsewhere. Hence, a broad range of scientific and technological skills is absolutely crucial for a nation to participate effectively in the international technological economy.’

<sup>183</sup> Kitch, note 7 above, 166.

institutions.<sup>184</sup> In short, a country cannot invest too much in good education.

In the past, technological innovation and artistic creativity were separate fields of endeavour. Scientists and artists used different tools and generally found it difficult to communicate, let alone work together. Parallels were sometimes mentioned (between mathematics and music, for example), and sometimes realized by geniuses (Leonardo da Vinci), but those were rare, mostly theoretical discussions. This has now changed dramatically. The focus of education should be heavily biased towards computer technology, because code and computers have become a horizontal link between art and science.<sup>185</sup> To take a simple example, both artists and scientists (engineers) use three-dimensional design software. The future of innovation and creativity should bring art and science closer together and this should inform the design of any forward-looking educational policy.

At a more technical level, training for policy makers, judges, high officials and other persons involved in economic development projects should similarly be organized. It cannot be stressed enough that successful education program outcomes will depend on selecting the best candidates for each program, and not basing decisions solely or mainly on other factors.

Developing educational institutions and services is naturally very costly. Developing intellectual property institutions such as patent and trademark offices is perhaps even more so, but it is essential to be able to benefit from the international IP regime.<sup>186</sup> Yet

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<sup>184</sup> As an example of the latter, the Sorbonne established its first overseas campus in 2005 in Abu Dhabi (UAE). See <<http://www.paris-sorbonne-abudhabi.ae/index.htm>>. An example of the former would be the higher education system in India which attributes the necessary resources to elite home-grown institutions that attract the best students and soon will rival the intellectual output and level of their Western counterparts.

<sup>185</sup> A good example is the Montreal-based Society for Art and Technology. Using the design of artist Luc Courchesne's 'Panoscope', a three-dimensional spherical installation, the Canadian Space Agency was able to solve an issue concerning the robotized arm of the US Space Shuttle (often referred to as the 'Canada arm'). See <[http://www.sat.qc.ca/article.php?lang=en&id\\_article=479](http://www.sat.qc.ca/article.php?lang=en&id_article=479)>.

<sup>186</sup> As noted in a study published recently by Queen Mary University; 'The implementation of international agreements is often hindered through a lack of institutional structures that would serve as a basis for or facilitate the implementation of new legislation. In many cases this leads to incomplete

developing countries can either delegate these roles to foreign institutions, a majority of which are located in the 'First World', thereby losing the some of their ability to customize the services; or take the policy bull by the horns and pay the price. Ideally, more industrialized nations should fund training and establishment of local patent and trademark offices, also because of their educational role with local businesses and research facilities. Absent this kind of funding, another option, used in some parts of Africa for example, is to build regional offices.<sup>187</sup>

Building intellectual offices is an extremely complex task. As discussed as part of the Development Agenda process, WIPO may assist in providing technical knowledge. Developing countries should also consider regionalizing certain operations where appropriate, and working with offices in industrialized countries. Here, working with countries that do not necessarily have a leaning towards maximum intellectual protection may make it easier to separate the policy issues from the actual functioning of the office to be set up in or for each WTO Member.

The capacity-building effort should not be limited to officials working in the intellectual property office. Typically, intellectual property is also of direct relevance to the work of ministries such as agriculture, education, health, and international trade. In addition to training and capacity building within those ministries, countries should consider establishing a governance structure that coordinates intellectual property discussions among the various stakeholders, and ensures that policy making is based on as broad a consensus as possible, which also allows countries to speak with a single voice in international and bilateral negotiations.

### **Research subsidies and innovation (venture) capital**

Innovation requires funding, though not all types of innovation will require funding of the

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implementation or adverse effects...' The Impact of IPR Rules on Sustainable Development (note 36 above) 3.

<sup>187</sup> For example, the African Regional Industrial Property Organization, available at: <<http://www.aripo.wipo.net/index.html>>.

same magnitude (compare, say, computer programming and biotechnological research). To obtain the necessary 'venture' or development funding, innovators may rely on public funds, private funds, or both. It has even been argued that the ability to document the ownership of assets (tangible and intangible) and to use them as security to obtain financing is a key to economic growth in the West, rather than cultural or other factors.<sup>188</sup> What is certain is that mechanisms must be in place to allow innovators to obtain appropriate funds to prototype, develop and market new technologies and ideas.

Within WTO and other applicable rules, there is room for subsidies in the form of tax breaks or otherwise. Subsidies and publicly-funded and/or supported training, research, and development are an essential ingredient in any successful innovation policy.<sup>189</sup> Subsidies may also be used to attract FDI. By granting merit-based research subsidies or grants to local creators, especially in universities and public research institutes,<sup>190</sup> an incentive is given to local innovators and creators. By rewarding significant achievements at, e.g. an annual award ceremony, successful innovators and creators are recompensed and also a strong social signal is sent about the value of creation and innovation, which then functions as an additional incentive for others.

### **FDI promotion**

FDI is not an economic panacea, but in the game of economic growth and development it seems a better solution than a simple increase in imports. FDI generally comes with formal or informal knowledge and technology transfer creating more, and better, local jobs than simple distributorships. Each country (and may be doing it aggressively already) should thus market its advantages bilaterally, at international fairs, through

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<sup>188</sup> de Soto (notes 12 and 179 above).

<sup>189</sup> Barton, note 182 above, 32: 'the subsidy criterion described previously must be the basis for all national technology policy. It clearly favors strong support for scientific education and for basic research in areas that are important to the particular nation and neglected by world technological research. The criterion favors academic research in areas of local interest, and, where the nation has specific capability, of global interest.'

<sup>190</sup> Many economists believe that matching loans or loans to be repaid only if a project succeeds are inefficient and undesirable and may run afoul of WTO rules, including national treatment. S Ostry and R Nelson, Techno-Nationalism and Techno-Globalism : Conflict and Cooperation. (Brookings Institution, 1995), 30.

graduate students, etc. It could survey multinational companies operating in its priority areas to determine their perception of the country's strengths and weaknesses, address shortcomings identified in the survey and provide information on positive aspects that are simply not known in interested circles.

### **Non-IP-Regulatory Adaptation**

Based on WTO and other rules and surveys, regulatory shortcomings should be addressed. 'Political stability, desirable geographic location, adequate infrastructure, human capacity, functioning legal institutions, enforceable contract rights, open trade policies, [...] intellectual property protection',<sup>191</sup> a competitive tax system and access to a qualified workforce will rate fairly high in the list of FDI preconditions, as will a low level of corruption.

These are of course only examples of the components of a full strategy.

### **Conclusion**

Without adequate intellectual property protection, economic development will not happen. Moreover, from a certain level it is unclear whether intellectual property rules have any positive effect on the development of the truly poorer nations. In addition, we now know that while intellectual property regulation is an essential ingredient, it does not an economic plan make—many more elements are needed. Both for practical reasons, and on the basis of available empirical data, TRIPS should be seen, and fully accepted, as a given in the intellectual property policy portfolio, in spite of its potentially dynamic nature. It may also be defended as an appropriate reference point for developing nations in the context of TRIPS Plus bilateral trade discussions.

TRIPS does contain a number of rules that WTO Members must implement, but it also

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<sup>191</sup> K Kennedy, 'The 2005 TRIPS Extension for the Least-Developed Countries: A Failure of the Single Undertaking Approach?' (2006) 40 *Int'l Law* 683, 699.

affords a fair margin of 'policy flexibility.' Implementing TRIPS should be viewed as part of a broader knowledge and innovation strategy resting initially on priority setting, but then mostly on education and institutional capacity building and, to a certain extent, also on regulatory adaptation and FDI promotion.