

Knowledge, Intellectual Property Rights and Equity. The WTO's TRIPS Agreement and EU Policy.

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What is the problem? It is commonly assumed that *globalisation* is liberalising access to goods and services. The opposite appears, however, to happen with respect to access to knowledge. A growing number of interstate agreements – multilateral and bilateral - are promoting increasing protection of intellectual property rights (IPRs). The Agreement on Trade-Related Intellectual Property rights, *TRIPS*, that was established as part of the World Trade Organization, WTO, has been a prominent part of this trend. It appears to make *knowledge increasingly a private, less and less a public good.*¹ Or as two academics put it: private knowledge goods are globalised, whereas global public goods are being privatized (Maskus and Reichman, 2004).

There are obviously valid arguments in favour of protection. But there is also a strong case for free access (see Table 1). To make a reasonable balance between the two constitutes a difficult and increasingly important dilemma. In order to understand it, knowledge should be broadly perceived and defined. It represents not only ‘abstract’ (highly developed skills, know-how, R&D and innovation capabilities) but also ‘embodied’ knowledge (as technology including process technology) and the relationship between the two (Mokyr, 2002). Knowledge has a social and cultural dimension; it is vital to the economy; and it is political. It offers opportunities to achieve a variety of individual or collective goals – individual health and job careers; improved competitiveness of firms; social welfare and national development; and power. *The key problem is equity: not all these goals can be equally much promoted and with an equitable distribution of access.*

Which are the arguments? It was a group of big corporations that initiated, designed and lobbied to have the TRIPS become part of the World Trade Organization, WTO (Braithwaite and Drahos, 2000; Sell, 2003; Merlin-Bennett, 2004). The agreement sets out minimum protection standards that Members of the WTO must enforce and observe in the areas of patents, copyrights, trademarks, geographical indications, industrial design, confidential business information, and integrated circuit designs. It protects IPR proprietors and restricts and conditions the access of non-proprietors. This is its *raison d'être*. One of the intentions is to stop what is defined as free-riding. This obviously covers a range of practices from non-authorized copying to simple theft and deceit.

The strongest defenders of IP protection probably exaggerate the link between IP and ‘efficiency’ (cf. pro-protection arguments). The trade-off between efficiency and equity that they assume is not necessarily there. We need to focus whether or how less developed societies and poor people are affected by TRIPS. And small and medium scale firms in developed countries. Is strict protection preventing not only spread of knowledge to the less developed societies but also dissemination within the developed? The agreement recognizes the interests of non-proprietors as legitimate although in general terms. Do developing economies that require access to modern technology in order to catch up with the developed world face better or worse prospects? *Can protection and access be reconciled and if so, in what way?*

Table 1. FREE ACCESS OR PROTECTION?

	Contra protection	Pro protection
Argu-	C1/ Knowledge is inherently a	Protection

¹ A good is ‘public’ if there is non-rivalry in its consumption and nobody can be excluded from using it.

ments	<p>collective good, inventions are not a product of a single source but build on the inventions and innovations of others</p> <p>C2/ There is no clear proof that protection (patent) is beneficial for all countries under all circumstances (Maskus, 2000)</p> <p>C3/ Developing countries need cheap, speedy and direct access in order to catch-up with the developed countries</p> <p>C4/ Some patents are made too broad or in other ways designed so as to prevent the spread of an innovation (Arundel, 2001).</p>	<p>P1/ gives the holder of an IPR a stimulus to innovate and develop new products and processes,</p> <p>P2/ makes commercialization feasible as knowledge otherwise would remain non-implemented or be hidden,</p> <p>P3/ stimulates transfer of knowledge through foreign direct investments (FDI)</p> <p>P4/ increases transparency of innovation as patent must be publicly well described²</p>
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Recall history! Patenting, copyright and trademark protection has a long history. Patents were first introduced in the city states of Italy around 1500 in order to stimulate innovative activity. It meant a radical turn with respect to how knowledge was considered: knowledge became ‘commodified’ and commercialised (Penrose, 1951). Patent and copyright laws later played a significant role in stimulating innovation during the industrialization of Great Britain. It also remained a highly political issue, closely related to military interests. IPR regimes have since then been developed within a continuous discourse between those favouring free access to knowledge and those defending particular interests.

The discourse reflects the well-known issue of whether knowledge basically is a private or public good. Throughout history periods of fairly strong protection have alternated with periods of weak protection. Power considerations have always been present. Firms and governments have pursued mixed motives: protect your own advantages (which are considered private or national, respectively), protect against those of others, but try also to obtain the freest possible access to these (Penrose, 1951). The state also protected its own citizens but allowed or even encouraged them to spy on and steal from citizens of other countries (Merlin-Bennett, 2004). Several of the present industrialized countries built their industrial economy by protecting national firms from foreign competition during their build-up (Chang, 2002).

Until the 1980s there was strong support for principles associated with free access in the leading economy, the United States. Patent law protection was limited, entrepreneurs had to innovate in a highly competitive climate, and fairly consistently enforced antitrust laws kept a check on market power and prevented barriers to entry from being erected. Leading technology firms were disciplined. All this paved the way for technological leaps in the 1970s and 1980s (Mowery and Rosenberg, 1993). But at the end of the 1970s a change in policy thinking that amounted to a *paradigm shift* was already underway in the US. It produced a paradoxical political compromise (which politics often do). Two apparently contradictory ideas were pursued in parallel if not in combination: there should be more emphasis on a self-regulating market in general economic policy, but at the same time more regulation for ‘fair trade’ and ‘level the playing field’ in international trade and investment policy.

Politics prevail. The swing towards neo-liberal economic ideas that started in the 1970s was one important factor behind this ideological and political turn. But at least three more factors were causing it. First policy-makers and even academics voiced concern that producers in competing countries copied US technology too easily and in that way had a free ride to improved competitiveness. Congress therefore revised the 1930 trade law in 1974 to strengthen protection of US holders of IPRs and further strengthened it in 1984 by making

² This thesis has been investigated empirically by Yildizoglu (2006) and found not to hold.

offenses 'actionable'. Secondly science and technology issues were defined as priority matters in US foreign policy (US Congress, 1976). The third factor that supported US policy change was the spread of litigation cases in US courts from the 1980s on, assisted by the passing of the Bayh-Dole Act in 1980 and the subsequent creation in 1982 of the Court of Appeals for the Federal Circuit (CAFC) to hear patent appeals. These institutional changes tipped the balance in favour of the patent holders (Mowery and Sampat, 2004). The economic value of holding patent rights went up as punishment for breaches of a patent right was increased.

In *l'ancien regime* patents and copyrights were traditionally granted by national authorities within their respective jurisdiction. The result was considerable variety in the policy and practice pursued by governments. And *unilateralism* as the dominant mode of response whenever US authorities acted on a foreign client they defined as problematic. An important purpose of the TRIPS is to strengthen multilateral handling of problems by providing proprietors with uniform, harmonized rights across national jurisdictions and access to the WTO's Dispute Settlement Mechanism which they get by working through their home governments. IPRs have thus become an integral part of the package deals and the complex multi-issue bargaining so characteristic of the WTO. This turn consolidates and strengthens previous efforts to offer patents, copyrights and trademarks a comprehensive multilateral and global framework of protection.

The *new* international regime was created because US interests wanted it and the EU and the Japanese supported it. It happened after a substantial dose of pressure had been applied on unwilling developing country members of the WTO. It was promoted largely because international competition has increased as a consequence of globalisation and knowledge has become the key factor in creating and maintaining competitive advantage. It has always been an important part of corporate strategy to establish and protect an advantage in key aspects of knowledge – in leading technology or other (Hymer, 1976). This has now become of primary importance.

What are the consequences? More experience with the new regime must be collected before solid conclusions can be drawn, but there are already strong reasons for concern. Some of the most recognised lawyers and economists in the field conclude that there is an increasing likelihood that firms in less developed countries and SMEs in developed countries have reduced ability to break into global, or even domestic, markets and compete effectively.³ Their arguments and the counterarguments are summarized in Table 1 above.

From knowledge creation to dissemination: the missing link? Before policy proposals for equitable dissemination are assessed, capacity for knowledge *creation* should be considered. With some exceptions the trend over the last decades appears to be that the private sector and developed countries get more, the public sector and developing countries less capacity. At present private firms, primarily large transnational corporations (TNCs)⁴, account for half of the world's total R&D budgets and their share is increasing (UNCTAD, 2005; van Tulder and van der Zwart, 2006). As competition has become international and knowledge-based production represents some of the most dynamic sectors, it becomes vital to maintain competitive advantages in knowledge creation. The private sector thus actively recruits migrants, works to strengthen ties to the public sector, and boosts its own R&D efforts. The big corporations are not necessarily the best innovators or the holders of most patents, but they have the financial and organizational resources to acquire or otherwise influence the knowledge creation of SMEs and others. The big are also normally the spiders in transnational production networks and the core in strategic alliances. The public sector – including public universities and publicly financed R&D - has traditionally been a major source of research-based creation, and there has, with some restrictions, been free access to its products. Access is

³ See e.g. the special issue of the *Journal of International Economic Law*, 2004 vol. 7, no. 2, and a report from a European Parliament hearing June 4, 2007 reported by Intellectual Property Watch; see www.ip-watch.org.

⁴ The term used by UNCTAD and the rest of the UN is chosen instead of the widely used 'multinational' which according to UNCTAD is a corporation operating under a management located in several countries.

still relatively free, but recent legislation by the EU such as the Directive on database protection rights,⁵ raises the question *how much* access is becoming limited.

In reality, the picture is still rather complex (Narula and Zanfei, 2004). Firms in developed countries are now actively locating R&D in developing countries and will continue to do so (UNCTAD, 2005). Both the public and private sectors in some of these countries, notably India, China, Singapore and Brazil, make leaps in their capacity to receive, absorb and create knowledge. They are also capable of bargaining with TNCs and the major economies. Price is not the only barrier to overcome; societies must also have the *capacity to absorb knowledge that is disseminated*. The majority of developing countries are lacking such capacity. Many are therefore bypassed by transnational dissemination channels, even though they have implemented TRIPS rules and accepted patent protection e.g. of pharmaceutical patents (Thorpe, 2002). Knowledge is still transferred through temporary migration of students, researchers, skilled employees and others. In addition there is transfer through official development assistance programmes. But it is highly questionable whether these transfers balance the reverse transfer, the permanent brain drain.

When the link is a transnational corporation... The predominant role of TNCs obviously put them in a position to influence these matters. But public policy has also gained new ground: the US and the EU are leading a move towards increased use of *bilateral and regional agreements* to enforce compliance (Okediji, 2004). Being preferential trade or investment agreements (PTAs) they offer market access above and beyond what is available in the WTO in exchange for IP standards and practices that are above and beyond what is required under TRIPS. TRIPS still offers the possibility to make patent laws serve development objectives and promote innovation and technology transfer (Correa, 2000). This possibility, however, “is *dramatically reduced*” under PTAs (Shadler, 2005:11). In fact the disciplining objective that was behind the creation of TRIPS may be pursued more effectively through PTAs as the Most Favoured Nation principle applies (Art 4 of the TRIPS Agreement). With a limited number of PTAs a “set of US-EU defined standards of intellectual property protection are rapidly encircling the globe” (Drahos, 2005:15).

Against this background the question is how knowledge may be disseminated to allow new entrants in markets to compete and development and anti-poverty programmes to benefit. The most publicised test of the latter is the use of TRIPS flexibility rules to obtain affordable medicines for HIV Aids patients in developing countries. The Doha Declaration on the TRIPS Agreement and Public Health in November 2001 responded to a growing global concern that prices on patented medicines prevent most patients from access to them. The declaration confirmed rather than strengthened the rights that governments have to protect public health, if necessary by providing affordable medicines through compulsory licensing. It has been used by several developing countries to lower prices and provide for generic medicines to be produced. But one precondition is that production takes place in the country concerned. An amendment to TRIPS was voted in 2005 to waive this precondition in order that countries should be allowed to import. It has, however, only been incorporated in national law in just a few countries and it has not yet been ratified by a sufficient number of countries. Again the spread of PTAs may be undercutting these multilateral efforts as IPR provisions in the agreements reduce or take away the flexibilities that TRIPS does offer (Khor, 2007), for instance the ability to import generic medicines.⁶ In addition some developed countries appear to be trying ‘forum hopping’ as they turn to the World Intellectual Property Organization, WIPO, to have it adopt stricter IPR protection rules.

⁵ Directive 96/9/EC of the European Parliament and of the Council.

⁶ Letter to the United States Trade Representative from Rep. Henry A. Waxman and other members of the US Congress on March 12, 2007.

What can and should the EU do?

The EU Commission emphasizes the need to protect IPRs in order to support innovation and obtain economic growth.⁸ It follows the logic described above: since knowledge is the major source of competitiveness, it is of primary importance that the EU defends the right of its IP proprietors to protect this source. The motivation offered is to come to grips with pirate copying and deceptions on trademarks. There are obviously ethical and political as well as economic reasons behind such a motivation. But free-riding was widespread when the present developed countries industrialized some decades ago. Policy-makers in these countries should therefore address the question: *If development in the past was dependent on some combination of national industrial policy and allowing access to knowledge created abroad (even by freely borrowing), why is this not the case today?* Maybe one ought to design a more *selective* policy that discriminates the ‘good’ from the ‘bad purposes’? It is difficult, but may be necessary.

Since the establishment of TRIPS, EU members have been engaged in a discourse between supporters of a pro-protection approach and those favouring a more balanced and selective choice between protection and free access. The biotechnology case is one example (Borrás and Ougaard, 2001). The US and EU disagree on several biotechnology issues including the relationship between the Convention on Biological Diversity and TRIPS. EU has moved closer to the position adopted by developing countries and Norway that patent applicants shall declare any use they make of genetic resources and traditional knowledge. The Union may contribute to the implementation of these policies by *offering technical, legal and other governance mechanisms* to ensure that the rules regulating the access and benefit sharing agreement on Plant Genetic Resources for Food and Agriculture (PGRFA) operate effectively.

Another and politically vital issue area is that of making use of the flexibility including the possibility to make licensing compulsory that the TRIPS agreement offers. It is perhaps surprising that so few developing countries have made use of this possibility confirmed by the Doha Agreement. The EU Commission took the lead in the TRIPS negotiations in the wake of the South African HIV/Aids case to advocate a practical way to address the three diseases particularly threatening to populations in poor countries – malaria, tuberculosis and HIV/Aids. The Commission also incorporated the TRIPS amendment on compulsory licensing in EU law in 2006.⁹ But while the US has ratified the Amendment, the European Parliament has not.¹⁰ The EU thus faces a political challenge that it can hardly avoid: *an urgent need to ensure that the TRIPS compulsory licensing provision becomes operational.*

The EU also appears to be facing a particular challenge to strike the right balance between pro-protection interests and those of free access in its strong defence of geographical indicators (GI). It has consistently pursued this line of defence during the Uruguay Round negotiations on TRIPS to protect *champagne* and more from being used by others. Its present work to expand and strengthen GI protection, not the least in PTAs, appears to be aimed at pushing beyond the level of protection allowed by TRIPS.¹¹ The US, Australia and other developed nations are against this line which thus appears to complicate WTO negotiations.¹² However because they are vital to particular interests GIs may put the EU in a position where it is willing to make negotiating deals with the US and other ‘hardline’ protectors on other issues in order to get its own position on GIs accepted in a package agreement with them.

Although the US and EU disagree on several issues the general trend over the last few years, however, appears to be that EU policy and strategy positions converge on those of the US (Pugatch, 2007). They both seek to impose higher standards on IPR applications in other

⁷ I owe Anna George thanks for her suggesting some of the policy proposals contained in this section, but she carries no responsibility for the way they are presented. See also George, 2007.

⁸ *Com (2006)567 Final. Global Europe: Competing in the World.*

⁹ Regulation (EC) 816/2006. The European Parliament has however not yet ratified it and may wish to renegotiate and allow for greater variation in the policy of EU member states.

¹⁰ See http://www.wto.org/english/tratop_e/trips_e/amendment_e.htm

¹¹ This is one reason why the EU's attempt to match the recently concluded FTA between the US and South Korea has been stalled; the South Koreans hesitate to include geographical indicators.

¹² See <http://www.wto.org> and documents IPC/C/W/289 of June 2001 and TN/IP/W/9 of April 2004.

countries and to prevent firms based in the competing major economy from gaining advantages over one's own firms in foreign markets. As a matter of fact the EU itself spearheaded PTAs in the 1990s, but put an 'informal moratorium' on them as the WTO was established.¹³ While continued support of a multilateral approach is official policy, the EU is again actively seeking PTAs in which IP regulations figure prominently.¹⁴ According to civil society groups it is even pursuing its own sectoral interests in domains where the US is not active for example by asking ACP countries¹⁵ accept strict rules for IPRs on seeds.¹⁶ In addition to practising bilateralism in order to have stronger IPR protection both the US and EU demand that implementation of the TRIPS agreement be put high on the agenda of the TRIPS Council, that WIPO be reactivated, and that the regulatory regimes in developing countries be reformed. The weight of these two major economic powers is enough to convince or pressure many governments to abide. The two majors may have wanted to soften this line when the G8 summit in 2007 made an explicit reference to TRIPS flexibilities in its communiqué, but the usual G8 lack of commitment and concreteness applied. With half the members of the G8 in its ranks the EU should feel particularly obliged to follow up on the summit discourse.

A new and effective moratorium on imposing stricter IP rules in PTAs appears not to be politically feasible at the present time. But *the effects of PTAs and other institutional arrangements on access to knowledge should be scrutinized* as a matter of priority. The EU may thus promote systematic expert examination of the functioning of regulatory agencies governing IP within individual countries, such as patent offices and national 'collecting societies' where activity to siphon off income from multiple entertainment sources is now booming on a global level. These steps may set the multilateral approach onto a more politically balanced approach. They are, however, conditioned on at least two major changes. The first is that the developed countries agree to revise or supplement the TRIPS Agreement with a view to implement the flexibilities that it allows and thus strengthen national authority and the right to access. Secondly developing countries should accept that a multilateral approach is to be preferred over PTAs. This is a problematic condition since the developing countries clearly disagree more between themselves than they used to during the Uruguay Round. The proliferation of PTAs has accentuated the division.

The test that should be applied to G8 calls for flexibility should also apply to the private actors, notably TNCs - key actors in most of the various transfer modes. Some corporations have engaged themselves in voluntary schemes to promote corporate social responsibility, 'greening of industry' *etcetera*. In developing countries with bargaining power TNCs do have to make concessions. Still they exercise strong, sometimes dominant market power and even power over regulatory institutions. The implications for competitive markets of their apparent increased power over the 'knowledge economy' ought to be more closely scrutinized by the EU's competition authorities. Having stated this: is it at all conceivable that corporations may deliver on the equity challenge? The answer is conditionally positive. After all corporate actors are also diverse. General Motors left the pro-protection lobby that initiated TRIPS and joined Business for Affordable Medicines because its management realised that the corporation had thousands of workers who might also need access to medicines. In some sectors corporate market power is much less than it is in the pharmaceutical industry. Well targeted lobbying by civil society, trade unions or well organized consumer action may produce changes in corporate strategy including in knowledge transfer. After all some of the transfer actually taking place is not solely dependent on considerations having to do with IPRs, but on other factors some of which may facilitate transfer.

But policy that seeks a better balance between knowledge protection and free access cannot rely completely on voluntary action by the corporations. Public policy intervention is needed. The proposed scrutinizing of arrangements should be used to explore which of the

¹³ See Evenett 2007, at <http://www.evenett.com/articles/ECNewTradePol.pdf>

¹⁴ See footnote 5.

¹⁵ Developing countries in Africa, Caribbean and the Pacific belonging to the association agreement with the EU.

¹⁶ See www.ip-watch.org and www.grain.org.

theses presented by the two sides (see Table 1) actually may be said to be valid and which not. In addition one should investigate more thoroughly the various modes and channels of knowledge access and transfer that may work for different categories of countries, sectors and firms. TRIPS is mostly focussed on market mechanisms whereas modes include non-market transfer of various kinds, from foreign direct investment to R&D alliances, networking and migration.¹⁷ Because of its global reach and its multilateral character it is nevertheless important to maintain TRIPS, but at the same time to change it. Its flexibility must be practiced in order to address the problem of inequitable access. If not TRIPS is likely to face a fatal loss of legitimacy and also lose out to bilateralism. A substantial revision *or* a new treaty that guarantees right of access to knowledge therefore appears as necessary (Drahos 2005).

Table 2. SUMMARY OF POLICY PROPOSALS

General policy principles	<ul style="list-style-type: none"> • Reflect historical experience: do not forget the practice of ‘free-riding’ when present industrialized countries developed in the past • Recognize that some claims to IP rights may be excessive and thus create economic inefficiencies, and provide the political means to draw legal and moral boundaries around them • Make sure that EU policy on competitiveness enhancement on behalf of its own sector interests (<i>Global Europe: Competing in the World</i>) is consistent with its policy to assist in global development, equity and poverty eradication
Specific action proposals	<ul style="list-style-type: none"> • Take steps to ensure that the TRIPS compulsory licensing provision, confirmed in the Doha Agreement of 2001, becomes operational • Contribute to the implementation of pro-development policies by offering technical, legal and other governance mechanisms to ensure that rules regulating access and benefit sharing operate effectively • Initiate independent expert assessment of the effects of current PTAs and other institutional arrangements, including national patent offices, on access to knowledge in particular for developing countries and SMEs in developed countries • Stimulate European corporations and industry associations to engage themselves in CSR and similar agreements with developing country firms that promote transfer and domestic dissemination of knowledge

REFERENCES

Arundel, A. (2001) "Patents in the Knowledge-Based Economy", *Beleidstudies Technologie Economie*, vol. 37, No. .. (Special Issue):67-88.

Borrás, Susanna and Morten Ougaard (2001) "Patentløsninger – intellektuell ejendomsret, EU og WTO", *GRUS*, nr. 64:28-42.

Braithwaite, John and Peter Drahos (2000) *Global Business Regulation*. Cambridge: Cambridge University Press.

Chang, Ha-joon (2002) *Kicking away the Ladder. Development Strategy in Historical Perspective*. London: Anthem Press.

¹⁷ An in-depth survey of the various types and categories of international regulation of knowledge dissemination will be presented in H. Hveem and L. Iapadre (eds.) (forthcoming).

Correa, Carlos (2000) *Intellectual Property Rights, the WTO and Developing Countries; The TRIPS Agreement and Policy Options*. London: Zeed Books.

Drahos, Peter (2005) "Access to Knowledge: Time for a Treaty?" www.ictsd.org (April) no.4

George, Anna (2007) FDI-led innovation, transfer and dissemination of knowledge and multilateral global and regional regulation. Draft Discussion Paper prepared for GARNET JERP 5.3.6 Workshop, Oslo 3 – 5 May 2007

Hveem, Helge and Lelio Iapadre (eds.) *The Multilateral and Regional Regulation of Knowledge Accumulation and Diffusion*. GARNET Survey (forthcoming early 2008).

Hymer, Stephen (1976) *The International Production of National Firms*. Cambridge, Mass.: MIT Press.

Khor, Martin (2007) Patents, Compulsory License and Access to Medicines: Some Recent Experiences. Third World Network.

Maskus, Keith E. (2000) *Intellectual Property Rights and the Global Economy*. Washington D.C.: Institute for International Economics.

Maskus, K.E. and J.H.Reichman (2004), "The Globalization of Private Knowledge and the Privatization of Global Public Goods", *Journal of International Economic Law*, 7(2):279-320.

Médecins sans Frontières (2004), Access to Medicines at Risk across the Globe.

Merlin-Bennett, Renée (2004), *Knowledge Power: Intellectual Property, Information and Privacy*. Boulder and London: Lynne Rienner.

Mokyr, Joel (2002) *The Gifts of Athena. Historical Origins of the Knowledge Economy*. Princeton, N.J.: Princeton University Press.

Mowery, David C. and Nathan Rosenberg (1993), "The US National Innovation System", in Richard R. Nelson (ed.) *National Systems of Innovation: A comparative Study*. Oxford: Oxford University Press.

Mowery, David C. and Bhaven N. Sampat (2004), "Universities in National Innovation Systems", in J. Fagerberg, D.C. Mowery and R.N. Nelson (eds.) *The Oxford Handbook of Innovation*. Oxford: Oxford University Press.

Narula, Rajneesh and Antonello Zanfei (2004), "Globalization and Innovation: the Role of Multinational Enterprises", in J. Fagerberg, D. Mowery and R. Nelson (eds.) *The Oxford Handbook of Innovation*. Oxford: Oxford University Press.

Okediji, Ruth (2004) "Back to Bilateralism? Pendulum Swings in Intellectual Property Protection", *University of Ottawa Law and Technology Journal*. 125

Penrose, Edith (1951) *The Economics of the International Patent System*. Baltimore: Johns Hopkins University Press.

Pugatch, Meir Perez (2007) *A Transatlantic Divide? The US and EU's Approach to the International Regulation of Intellectual Property Trade-Related Agreements*. Brussels: ECIPE, Working Paper no. 2/2007.

Sell, Susan K. (2003) *Private Power, Public Law: The Globalization of Intellectual Property Rights*. Cambridge: Cambridge University Press.

Shadlen, Ken (2005) *Policy Space for Development of the WTO and Beyond: The Case of Intellectual Property Rights*. Boston: Global Development and Environment Institute, Tufts University. Working Paper no. 05-06.

Thorpe, Phil (2002) *Study on the Implementation of the TRIPS Agreement by Developing Countries*. London: Commission on Intellectual Property Rights, Study Paper 7.

UNCTAD (2005) *Transnational Corporations and the Internationalization of R&D. World Investment Report 2005*. Geneva: United Nations.

US Library of Congress (1976) *Science, Technology, and Diplomacy in the Age of Interdependence*. Washington D.C.: Congress (June).

Van Tulder, Rob and Alex van der Zwart (2006) *International Business-Society Management*. London: Routledge.

Vaver, David and Shamnad Basheer (2006): "Popping Patented Pills: Europe and a Decade's Dose of TRIPS". University of Oxford Faculty of Law Legal Studies Research Paper Series, Working Paper No 25/2006, May 2006.

Yildizoglu, Murat (2006) *Reinforcing the patent system? Patent fencing, knowledge diffusion and welfare*. Université Montesquieu-Bordeaux IV, GRES, Cahier no. 23 (October)

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