

Chicago-Kent Law Review

Volume 72

Issue 2 *Symposium on Global Competition and Public
Policy in an Era of Technological Integration*

Article 2

December 1996

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Recommended Citation

Frederick M. Abbott, *Public Policy and Global Technological Integration: An Introduction*, 72 Chi.-Kent L. Rev. 345 (1996).
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PUBLIC POLICY AND GLOBAL TECHNOLOGICAL INTEGRATION: AN INTRODUCTION

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Technological innovation and intellectual property are playing an increasingly important role in the international economy.¹ The most compelling evidence of this phenomenon is the evidence of our own senses. Our office environments appear increasingly like photos of NASA mission control on launch day. Average homes are moving beyond cable access and into direct satellite link-up to media networks. Visitors to Shanghai are struck not by slogans urging commitment to the revolution, but by slogans urging commitment to Hitachi, Volkswagen, and Nike. Microsoft teamed Windows with the Rolling Stones for what may be the single most visible and successful product introduction in global history—a product introduction starting at the international dateline and spreading across the planet in an hour-by-hour progression.

The premise of the GATT Uruguay Round negotiations concerning trade-related aspects of intellectual property rights (“TRIPS”) was that technology-based and intellectual property rights (“IPRs”) dependent businesses in the industrialized countries were suffering at the hands of IPRs “pirates” in the developing countries. Data was amassed by the affected industries to prove this case. This data led the Organisation for Economic Co-operation and Development (“OECD”) government policy-makers to the conclusion that IPRs-related losses were hurting the industrialized countries. They pursued

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1. Keith E. Maskus, *Trade-Related Intellectual Property Rights*, in COMMISSION OF THE EUROPEAN COMMUNITIES, *EUROPEAN ECONOMY*, No. 52, at 157 (1993), details the extent to which trade in technology-based products and technology itself has increased as a component of international trade. The emergence of advanced technology as a key component of economic growth in the industrialized countries is a major theme of both LAURA D'ANDREA TYSON, *WHO'S BASHING WHOM?* (1992) and LESTER THUROW, *THE COMING CLASH* (1992). Statistics assembled by WIPO indicate far higher growth in the internationalization of patent applications than in “first filings” for patents. See Francis Gurry, *The Evolution of Technology and Markets and the Management of Intellectual Property Rights*, 72 CHI.-KENT L. REV. 369, 371-72 (1996). The annual White Paper of the Japanese Ministry of International Trade and Industry, JETRO, *WHITE PAPER ON INTERNATIONAL TRADE: JAPAN 1992*, at 103 (1992) [hereinafter MITI WHITE PAPER], notes that within Japanese international work sharing arrangements, the higher value-added high technology component of manufacturing processes tends to take place in Japan, while the lower value-added labor intensive components are performed in Southeast Asian countries.

the establishment of high standards of IPRs protection, and legitimized the imposition of trade sanctions on countries which fail to uphold these standards. The Uruguay Round's IPRs protection effort succeeded well beyond the initial expectations of industrialized country industry groups and governments.² The basis for this success was an aggressive trade and IPRs policy pursued by the United States and, to a lesser extent, the European Union, coupled with promises of concessions to the developing countries in non-TRIPS Agreement Uruguay Round sectors such as agriculture.³

The WTO Agreement on Trade-Related Aspects of Intellectual Property Rights ("TRIPS Agreement") that came into force on January 1, 1995, is not an isolated phenomenon with respect to IPRs protection.⁴ The main arena for global IPRs administration is the World Intellectual Property Organization ("WIPO"). WIPO-predecessor activities in the international IPRs field date back to the late 1800s, during which the first efforts at quasi-harmonized IPRs protection were initiated. A modest system of global IPRs protection based largely on

2. Industry groups did not believe that it would be possible to negotiate a TRIPS Agreement that would establish high standards of IPRs protection and be agreed to by developing countries. Thus they initially proposed the negotiation of a limited TRIPS code (this was also the initial proposal of the USTR). See Frederick M. Abbott, *Protecting First World Assets in the Third World: Intellectual Property Negotiations in the GATT Multilateral Framework*, 22 VAND. J. TRANSNAT'L L. 689, 715-17 (1989) (regarding proposals).

3. Examples of aggressive U.S. IPRs-related actions during the Uruguay Round negotiations are numerous. Regarding long-running IPRs-related disputes and trade threats vis-a-vis, inter alia, Argentina, Brazil, and Thailand, see *USTR Report Takes Aim at Japan in Outlining Foreign Trade Barriers*, 8 World Intell. Prop. Rep. (BNA) 131 (May 1994); *Senate Passes Copyright Bill; House Expected to Follow Suit*, 8 World Intell. Prop. Rep. (BNA) 324 (Nov. 1994) (Thailand). It certainly occurred to some developing country commentators that in the final analysis the developing countries gave more in the negotiations than they got. See Dr. Eduardo Conesa, Remarks made to Panel on Implications of the Uruguay Round, ILA Biennial Conference (Aug. 1994) (author's notes).

The United States continues its aggressive stance toward countries that it regards as failing to adequately protect IPRs. See, regarding the Peoples' Republic of China, for example, *China, U.S. Announce Eleventh Hour Agreement Averting Costly Trade War*, 10 World Intell. Prop. Rep. (BNA) 209 (July 1996); *Statement by Acting U.S. Trade Representative Charlene Barshefsky Concerning Trade Talks with China on IP Rights, and Fact Sheet on Chinese Implementation of 1995 IPR Enforcement Agreement*, 10 World Intell. Prop. Rep. (BNA) 213 (July 1996) (released June 17, 1996); USTR, *Determination of Action Concerning the People's Republic of China's Protection of Intellectual Property and Provision of Market Access to Persons Who Rely on Intellectual Property Protection*, USTR Docket No. 301-92, Feb. 4, 1995.

4. See Agreement on Trade-Related Aspects of Intellectual Property Rights, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization [hereinafter WTO Agreement], Annex 1C, LEGAL INSTRUMENTS—RESULTS OF THE URUGUAY ROUND vol. 31; 33 I.L.M. 81 (1994) [hereinafter TRIPS Agreement]. Regarding the TRIPS Agreement as concluded, see Adrian Otten, *Improving the Playing Field for Exports: The Agreements on Intellectual Property, Investment Measures and Government Procurement*, in GATT URUGUAY ROUND 67 (Thomas Cottier ed., 1995); J.H. Reichman, *Universal Minimum Standards of Intellectual Property Protection Under the TRIPS Component of the WTO Agreement*, 29 INT'L LAW. 345 (1995).

the national treatment principle was created at the end of the nineteenth century. Only in the past decade, though, has WIPO truly begun to flower as an international IPRs clearinghouse, facilitating in great measure the effective grant of global IPRs. These activities are rooted in the Patent Cooperation Treaty ("PCT"), which provides a mechanism for an international prior art report on a patent application, coupled with a procedure for multiple national patent applications accompanied by that report.⁵ Though the international patent system continues to be based on the grant of national patent rights, the PCT system is part of a progressive evolution toward a truly global patenting system. Copyright protection is secured on a global basis through the mechanism of the Berne Convention,⁶ and considerable progress has been made toward establishing a single application global trademark registration system.⁷

Figures compiled by WIPO confirm a marked trend toward the globalization of IPRs protection. Between 1985 and 1990, secondary filings of patent applications (i.e., filings in a second or subsequent patent office based on an initial filing) increased dramatically, while initial patent applications remained practically constant.⁸ Usage of the PCT system is expanding at a dramatic rate.⁹ Not surprisingly, the ownership of patents is concentrated in large multinational enterprises that heavily invest in technology-related research and development.¹⁰

5. Regarding the operation of the PCT system, see WIPO, *The Patent Cooperation Treaty (PCT) in 1992*, Press Release PCT/64 (Jan. 29, 1993)[hereinafter *the PCT in 1992*]; WIPO, *Basic Patent Cooperation Treaty Practice*, PCT/SEM/285 (Apr. 1996).

6. See Berne Convention for the Protection of Literary and Artistic Works, done July 14, 1967, 828 U.N.T.S. 221.

7. New instruments with respect to trademarks include the Protocol Relating to the Madrid Agreement Concerning the International Registration of Marks, done at Madrid, June 8, 1989, entered into force April 1, 1996, and the Trademark Law Treaty, done at Geneva, October 27, 1994, entered into force August 1, 1996. Also see the Hague Agreement Concerning the International Deposit of Industrial Designs, for example, at Gurry, *supra* note 1, at 374; the draft Protocol to the Berne Convention, at WIPO, *Preparatory Work for a Possible Protocol and a Possible New Instrument*, WIPO/ACAD/E/93/26 (Sept. 1993); and the draft Patent Law Treaty (which is facing some difficulties from the United States at the moment), at WIPO, *New Treaties in the Making: Their Origins, Scope and Implications: The Patent Law Treaty*, WIPO/ACAD/E/93/18 (Sept. 1993).

8. See Gurry, *supra* note 1, at 371-72.

9. In 1978, WIPO received 459 international applications under the new PCT. See *The Patent Cooperation Treaty (PCT) in 1992*, *supra* note 5, at ¶¶ 13-14. In 1992, WIPO received 25,917 international applications. See *id.* In 1992, the average number of states designated per international application was 25.5. See *id.* In 1995, WIPO received 38,906 international applications under the PCT. See Gurry, *supra* note 1, at 373.

10. See Carlos A. Primo Braga & Carsten Fink, *The Economic Justification for the Grant of Intellectual Property Rights: Patterns of Convergence and Conflict* 72 CHI.-KENT L. REV. 439, (1996); Teresa Riordan, *Which Companies Had the Most Patents in 1994? It Depends on Which Set of Statistics You Believe*, N.Y. TIMES, Apr. 3, 1995, at D2; Carl S. Kaplan, *Is U.S. Falling Behind, Or Is World Catching Up?*, NEWSDAY, July 23, 1989, at 47.

A single multinational enterprise may maintain thousands of trademark registrations throughout the world.

Over the past five years, the relationship between liberal international trade rules and competition law has become the subject of increasing attention from governments, the business community, and scholars.¹¹ The genesis of this attention is a perception that certain major industrialized markets are protected against import penetration by the failure of national governments to police against competitive market restraints.¹² The reduction or elimination of formal trade barriers, it is argued, does not achieve the desired result of stimulating international competition, with corollary comparative advantage effects, if markets are allocated, formally or informally, among domestic producers. In this context, competition law is viewed largely as an exporter's market access tool.

Significantly less attention has been paid to the extent to which industrial and service industry concentration may be increasing at the international level, and the role that competition law might play in addressing a pattern of concentration.¹³ Without doubt, global markets are becoming increasingly integrated through international work-sharing arrangements, and this integration is taking place within large-scale multinational corporate structures.¹⁴

11. See, e.g., *OECD Roundtable on the New Dimensions of Market Access in a Globalizing Economy* (June 30-July 1, 1994) (papers to be published). This conference was attended by OECD government representatives, business community representatives, and members of the academic community, and focused on market access issues, particularly relating to investment laws and competition laws. The International Trade Law Committee of the International Law Association ("ILA") is presently engaged in a research project concerning the relationship between WTO trade rules and competition rules. See *Second Report of the International Trade Law Committee of the ILA*, Helsinki Biennial Conference (Aug. 1996) (E.-U. Petersmann & F.M. Abbott, Rapporteurs); Ernst-Ulrich Petersmann, *International Competition Rules for Governments and for Private Business: A "Trade Law Approach" for Linking Trade and Competition Rules in the WTO*, 72 CHI.-KENT L. REV. 545 (1996). The addition of a working group on trade and competition is being debated as a possible part of the WTO December 1996 Singapore Ministerial conference agenda.

12. Japan is cited as the market failure prototype. This is, of course, a complicated story. See, e.g., LAURA D'ANDREA TYSON, *WHO'S BASHING WHOM?* (1992); MITSUO MATSUSHITA, *INTERNATIONAL TRADE AND COMPETITION LAW IN JAPAN* (1993). In 1996, the United States had initiated a dispute settlement proceeding in the WTO alleging that anticompetitive restraints and related market access barriers are impeding the access of U.S. photographic products suppliers to the Japanese market. See *U.S. to Seek Resolution in WTO of Japan Film Market Complaint*, 13 Int'l Tr. Rep. (BNA) 1001 (June 19, 1996).

13. The European Union and its competition rules are an exception to this general lack of attention, but the EU itself is an exception based on its highly evolved plan of regional market integration.

14. Perhaps the most illuminating discussion of this phenomenon can be found in the annual White Paper of the Japanese Ministry of International Trade and Industry. See, e.g., MITI WHITE PAPER, *supra* note 1, at 119-46.

Still less attention has been paid to the role of industrial or intellectual property in industrial integration and concentration. The most comprehensive study of the role of intellectual property in industrial concentration was produced by Walton Hamilton in 1941.¹⁵ Recent studies of the role of intellectual property in the international economic system have largely been generated by industry sources to support the GATT Uruguay Round TRIPS Agreement.¹⁶ There are a few significant recent scholarly studies of the role of intellectual property rights in the international trading system. These studies clearly acknowledge the existence of critical information gaps, and the lack of empirical foundation for claims frequently made by industry concerning the benefits of high levels of IPRs protection.¹⁷

Business reports regarding consolidation in IPRs-dependent industries from the last year alone should have aroused the public policy antennae of the most jaded government officials. The U.S. media/entertainment industry is consolidating within a few large corporate conglomerate structures.¹⁸ There may be hundreds of television channels

15. SENATE TEMPORARY NATIONAL ECONOMIC COMM., 76TH CONG., 3D SESS., INVESTIGATION OF CONCENTRATION OF ECONOMIC POWER: PATENTS AND FREE ENTERPRISE 164 (Comm. Print 1941) (W. Hamilton, Monograph No. 31); see also SUBCOMM. ON PATENTS, TRADEMARKS AND COPYRIGHTS OF THE SENATE COMM. OF THE JUDICIARY, 85TH CONG., AN ECONOMIC REVIEW OF THE PATENT SYSTEM (Comm. Print 1958) (Fritz Machlup).

16. See, e.g., INTELLECTUAL PROPERTY RIGHTS: GLOBAL CONSENSUS, GLOBAL CONFLICT? (R.M. Gadbow & T. Richards eds., 1988); R.M. SHERWOOD, INTELLECTUAL PROPERTY AND ECONOMIC DEVELOPMENT (1990).

17. See, for example, Maskus, *supra*, note 1, at 172, stating:

In truth, there is little systematic evidence that natural market mechanisms for appropriating returns on innovation have been eroded and that stronger patents would correct the situation. This is an unfortunate gap in our understanding of the situation and leaves unresolved the important empirical question of whether greater protection of IPRs would call forth substantially more inventive activity. This question lies at the heart of the debate over international protection of IPRs.

And see Carlos A. Primo Braga, *Trade-Related Intellectual Property Issues: The Uruguay Round Agreement and its Economic Implications*, presented at The Uruguay Round and the Developing Economies, World Bank Conf. (Jan. 26-27, 1995), stating, for example:

This brief review underscores the limitations of normative recommendations concerning changes in the rules for IPRs at the world level. For the South, the strengthening of IPRs protection will have different characteristics depending on the characteristics of each country. Generalizations can only be made if strong assumptions are adopted.

Id. at 38. Note, however, that Primo Braga sees mounting evidence that implementation of the TRIPS Agreement will have a net trade-creating effect, though observing that no precise welfare predictions can be drawn from this tentative conclusion. See *id.* at 42.

See also Edson Kenji Kondo, *Patent Laws and Foreign Direct Investment: An Empirical Investigation*, UMI Dissertation Services (May 1994); U.N. Transnat'l Corps. & Management Div., Dep't of Econ. & Soc. Dev., *Intellectual Property Rights and Foreign Direct Investment*, ST/CTC/SER.A/24 (1993) (both finding lack of empirical evidence of positive correlation between high levels of foreign direct investment and high levels of IPRs protection by host countries).

18. The Walt Disney Company paid \$18 billion to absorb ABC/Capitol Cities; Time Warner, owner of Warner Brothers Studios and major cable distribution outlets, has offered \$8

in the new information age, but it appears that, in the United States at least, most of them may be owned by a half-dozen companies. The cost of entry into the global media industry has reached into the billions of dollars, and there is little doubt that the media giants will be wielding tremendous influence.

Microsoft is acknowledged as the universal provider of personal computer operating systems.¹⁹ While independent video-game developers may (or may not) thrive, the industry that produces personal computer business application programs has undergone a swift and dramatic consolidation.²⁰ Intel dominates the market for microprocessors, one of the most costly components of the personal computer system.²¹ The high definition flat-panel color displays used in almost all notebook computers are manufactured by a few large Japanese firms.²²

The telecommunications industry is undergoing a process of global integration. This process has been stimulated by the privatization of many important national telecommunications markets. The three U.S. long distance giants, AT&T, MCI and Sprint, have been teaming with national carriers throughout the world in an effort to

billion for Turner Broadcasting; Viacom International acquired Paramount Pictures and Blockbuster Entertainment; General Electric acquired NBC; Westinghouse Electric acquired CBS for more than \$5 billion; News Corp. owns 20th Century Fox and the Fox Network; Seagram's acquired MCA for about \$6 billion. See, e.g., Sallie Hofmeister et al., *It's Back to the Future for Disney; Deal Shows Those Old Stalwarts—The TV Networks—Have Gained New Life and Respect. Now They Are Seen as Keys to the Global Entertainment Age*, L.A. TIMES, Aug. 1, 1995, at A1; Diane Mermigas, *Big Bidders Wait in Wings for MGM/UA*, ELECTRONIC MEDIA, Mar. 18, 1996, at 2.

19. See, e.g., Matthew May, *Can Anyone Stop Microsoft?* THE TIMES (LONDON), Mar. 17, 1995. IBM has attempted to maintain a viable competitive product in OS/2, but its market share is far below that of Microsoft's Windows. See Cate T. Corcoran, *True Blue No More—Guarded View of Big Blue*, INFOWORLD, Feb. 5, 1996, at 1.

20. IBM has absorbed Lotus; Corel has absorbed WordPerfect; Microsoft now offers a range of leading PC applications with more extensive coverage than IBM and Corel. These three companies, along with a few others such as Borland, dominate the word processing and spreadsheet markets, and control much of the relational database market. See, e.g., Kristen Moulton, *Novell To Sell WordPerfect and Related Software to Corel*, Associated Press Newswire, Jan. 31, 1996. Microsoft refrained from attempting to absorb Quicken (the leading home financial management program) after objection by the U.S. Justice Department. See, e.g., O. Casey Corr, *Microsoft Drops \$2 Billion Deal to Buy Intuit*, SEATTLE TIMES, May 21, 1995, at A1.

21. Intel faces some price competition from producers of Intel-microprocessor clones, such as Advanced Micro Devices. Apple Computer, holding less than a ten percent share of the PC market uses an alternative processor. On the whole, however, Intel dominates the global market for PC microprocessors. See, e.g., Thomas W. Haines, *Intel: A Chip Above*, SEATTLE TIMES, June 30, 1996, at F1; John Foley, *Desktop Systems-Wintel Under Seige*, INFO. WEEK, Mar. 11, 1996, at 36.

22. Japanese manufacturers may face increasing competition from Korean competitors. See, e.g., Nick Turner, *Will New Screens Give U.S. An Opening In Flat Panels?*, INVESTOR'S BUS. DAILY, Feb. 13, 1996, at A8.

build consolidated global telecommunications networks.²³ It is not unrealistic to imagine a global telecommunications market divided among three large consortia, with perhaps a fourth major market player in the form of a global cellular consortium relying on a satellite-based system.²⁴

Other examples of consolidation in technology-based industries readily enough spring to mind. Consider for example the biotechnology industry and the pharmaceutical industry.²⁵ The banking sector in the United States, which has become highly dependent on computer networking technologies, has been the subject of increasing consolidation.²⁶

While there appears to be a pattern of concentration in a number of technology-based industries, the foregoing references are anecdotal. At least until recently, we could point to a pattern of intense competition in the computer industry which had stimulated innovation and cost-cutting. Until recently, much of the international telecommunications industry was controlled by government-owned or chartered monopolies. The present situation in telecommunications is, from a competitive standpoint, preferable to that which existed a decade ago. In fact, with respect to each industry just mentioned, an argument might be made that the apparent pattern of concentration is only a response to changing global patterns of competition or to the realities of large-scale research and development.

With the situation in Europe as an exception,²⁷ almost all regulation of potential market failures in technology-based sectors and pro-

23. See, e.g., Barbara Grady, *Global Data Traffic Spurs Sprint, Europeans*, Reuter Bus. Rep. (June 8, 1994).

24. Regarding Motorola's progress in creating a global cellular network with an initial consortium investment of \$3.4 billion, see Edmund L. Andrews, *Motorola Unit Has Funds for Sky-Phone System*, N.Y. TIMES, Sept. 22, 1994, at D3; William Boston, *Vebacom, Stet in Iridium Satellite Phone Cooperation*, Reuter Eur. Comm. Rep. (Mar. 26, 1996).

25. The wave of biotechnology start-ups and initial public offerings was followed by a wave of acquisitions by established pharmaceutical firms. See, e.g., Ronald Rosenberg, *Will Biogen, Genzyme Be Next Takeover Targets*, BOSTON GLOBE, Feb. 13, 1995, at 52; Susan Moffat, *Biotech Pioneer Celus, Neighbor Firm to Merge*, L.A. TIMES, July 23, 1991, at D1. The global pharmaceutical industry has recently witnessed a pattern of large-scale mergers and acquisitions. See, e.g., Edward Wyatt, *After the Upjohn Deal, Takeover Talk Turns to Warner-Lambert*, N.Y. TIMES, Aug. 22, 1995, at D8.

26. For example, in the past several years Chemical acquired Chase; Wells Fargo acquired First Interstate, having previously acquired Crocker; and Bank of America acquired Security Pacific. See Thomas S. Mulligan, *Wells Fargo Makes \$10.9 Billion Bid for First Interstate*, L.A. TIMES, Oct. 19, 1995, at A1.

27. The European Commission investigates and takes action against IPRs-related competition abuses, and there are a number of decisions of the European Court of Justice regarding IPRs-related abusive practices. See, for example, Case T-70/89, *British Broadcasting Corp. v. EC Comm'n*, 4 C.M.L.R. 669 (Ct. of First Instance 1991), and cases cited therein. See also Case

tection against IPRs-based market abuses takes place at the national level. The WTO TRIPS Agreement does not contemplate an international mechanism for regulating against IPRs-based market failures, though the 1948 Havana Charter for the International Trade Organization ("ITO") did contemplate such an arrangement. Article 46 of the Havana Charter contained an undertaking by Members to prevent restraints on competition (and to cooperate with the Organization in preventing such restraints) and permitted a Member to bring a complaint to the Organization on the basis that another Member failed to deal with a competition-related situation. Included among the specific kinds of practices which the Organization's dispute settlement procedure would address was commercial conduct:

- 3(e) preventing by agreement the development or application of technology or invention whether patented or unpatented;
- (f) extending the use of rights under patents, trade marks or copyrights granted by any Member to matters which, according to its laws and regulations, are not within the scope of such grants, or to products or conditions of production, use or sale which are likewise not the subjects of such grants.²⁸

The ITO would have had the authority to "request each Member concerned to take every possible remedial action, and . . . recommend to the Members concerned remedial measures to be carried out in accordance with their respective laws and procedures."²⁹ The Organization would have prepared, distributed to Members, and made public a report on its decisions and the remedial actions taken by Members.³⁰

The WTO TRIPS Agreement permits Members to take action against competition-related IPRs abuses,³¹ politely encourages the sharing of information when a Member seeks to enforce its own competition laws with respect to activities occurring in another Member's jurisdiction,³² and permits the granting by Members of compulsory licenses to remedy anticompetitive abuses of IPRs.³³ The TRIPS

262/81, *Coditel SA v. Cine-Vog Films SA* 1982 E.C.R. 3381, 1 C.M.L.R. 49 (1983) (reference for a preliminary ruling from the Cour de Cassation of the Kingdom of Belgium). The situation in the European Union is unique because of the general design of the Union system and its vision of a fully integrated single market.

28. Havana Charter for an International Trade Organization, United States Conference on Trade and Employment (Nov. 21, 1947 - Mar. 24, 1948) (Final Act and Related Documents, Restrictive Business Practices, ch. V, art. 46 (March 1948)).

29. *Id.* arts. 8, 48(7).

30. *See id.* art. 48(9)-(10).

31. *See* TRIPS Agreement art. 40:1-2. An illustrative list of practices refers to "exclusive grantback conditions, conditions preventing challenges to validity and coercive package licensing." *Id.* art. 40:3.

32. *See id.* art. 40:3.

33. *See id.* art. 31(k)-(l).

Agreement, unlike the relevant provisions of the Havana Charter, does not impose an obligation on Members to control restrictive practices, and so does not provide an overt institutional mechanism for dealing with Members that fail to control such practices.

Not all IPRs protect industrial innovation: Patents protect inventions. Copyright protects a wide range of subject matter, from books and movies to computer software. Trademarks identify the origin of goods, and arguably protect corporate goodwill. Historically, a distinction has been made between "industrial property" and other "intellectual property." The former (typically the patent and trademark) related to industrial application, while the latter (typically copyright and neighboring rights) usually related to artistic creativity. There has, however, been a blurring of lines; for example, consider the extension of copyright protection to computer software. The old terminology therefore, is not particularly useful. However, it is important to note that different forms of intellectual property serve different functions, and that in a process of public welfare analysis not all IPRs issues may be treated as equivalents.³⁴

The *key points* are these: *First*, at the heart of the trend toward global technological integration is the global system for the protection of IPRs. Industry is aware of this.³⁵ Without copyright protection, media market power immediately dissipates. Without patent protection, pharmaceuticals are readily copied. Without trademark protection, the market for running shoes opens widely.

Second, IPRs are *government-granted* rights, and governments are acting in the public interest. There is no divine mandate that a patent must last for twenty years, and that a patent should secure a global monopoly with only the most minimal payment from the patent holder.

Third, the effect globalizing IPRs has on the public has *never been studied* in anything close to a comprehensive way, nor have alterna-

34. The function of the different forms of IPRs is discussed in Frederick M. Abbott (Co-Rapporteur), *First Report to the Committee on International Trade Law of the International Law Association on the Subject of Parallel Importation*, presented at ILA Helsinki Biennial Conf. (Aug. 1996).

35. As clearly evidenced by the aggressive posture taken by groups such as the International Intellectual Property Alliance (IIPA) and Pharmaceutical Research and Manufacturers Association (PhRMA) in seeking U.S. government support for worldwide IPRs protection. See, e.g., *China, Russia, Turkey Head List of IIPA's Special 301 Targets*, 10 World Intell. Prop. Rep. (BNA) 107 (Apr. 1996); *IIPA, PhRMA Cite Several Countries for USTR "Special 301" Action*, 9 World Intell. Prop. Rep. (BNA) 80 (Mar. 1995).

tives to the present international IPRs protection system been seriously considered.

Fourth, there is a clear intersection between IPRs protection and competition law. Competition law is designed to protect the public interest and might be used to police the international IPRs protection system. This would be in accordance with classical thinking on maintaining the integrity of markets. The United States has recently articulated its approach to the interrelationship between IPRs protection and competition law in its revised Antitrust Guidelines for the Licensing of Intellectual Property (1995) and its Antitrust Enforcement Guidelines for International Operations (1995).³⁶

It would be unfortunate, however, if consideration of the effect of the international IPRs system on the public were limited to the potential utility of competition law. More innovative approaches might be worthwhile to consider. What if the holder of a global patent were required to pay a maintenance fee on its stream of income to WIPO, which might maintain a multibillion dollar fund to encourage technological development or to finance engineering education for developing country youth? What if pharmaceutical companies paid a share of their global patent-based income into a fund for the maintenance of public health facilities wherever they might be needed? What if the income to the author of a copyrighted work were limited to a fixed amount, beyond which copyrighted works entered the public domain? Frightening thoughts perhaps, but only if we accept at face value the present system of IPRs protection inherited from our grandparents, who had no idea whatsoever what the twenty-first century might look like. It may be worthwhile to recall that business enterprises pay fees or taxes on many kinds of licenses from governments.

The fact of the matter is that we do not understand the international intellectual property system's potential impact on the public interest. The lack of attention to this area is itself an interesting topic for study. A comprehensive study of the international intellectual property system and its impact on public welfare would be an expensive and time consuming project. Data collection and analytical methods present rather unique difficulties arising out of the intangible character of the subject matter. The subject matter itself is somewhat esoteric, and may not captivate public attention. There is little in the way of a non-governmental organization constituency that concerns itself with IPRs and the public interest. On the other hand, there is a

36. See 34 I.L.M. 1115, 34 I.L.M. 1080, respectively.

great deal of corporate attention to achieving and maintaining high levels of IPRs protection.

One of the most difficult problems facing policy-makers is the speed at which transformation of the global economy is occurring. There is no human intelligence sufficiently comprehensive to map the potential impact of this change. In a very real sense, the pace of technological development and introduction into human society has outstripped the capacity of the human race to control it. There is evidence of this phenomenon in many fields of activity.

Scientists can now manipulate human genetic structures, yet we have no basic agreement as to how this capability should be managed, or as to what its impact may be. Industry has already created much of an information superhighway connecting human beings around the world. The impact this will have on governmental authority and political systems is rather uncertain. New manufacturing technologies are permitting the replacement of human labor on a mass scale, yet there is very little in the way of public planning for the consequences.

We cannot and should not put genies back into bottles. But we must devote more of our attention to the public policy implications of global technological development and integration. This Symposium is quite deliberately *not* about a single event or phenomenon. We have tried to assemble a group of distinguished public policy specialists to reflect on our changing world, and to help us prepare in 1997 for the year 2010.

The general theme of this Symposium raises a broad spectrum of issues. Without intending to prejudice the choice of subject matter that our speakers would address, we raised a few specific questions to help focus collective attention:

1. Does the globalization of markets make existing concepts of market power obsolete? Are there always potential competitors with access to adequate entry capital present? Can we adequately define "global market power"? Note a mainstream view that liberal trade rules virtually assure high levels of competition and competitive pricing, which is evidenced at least in the U.S. context by a low level of price inflation.
2. The U.S. Department of Justice Licensing Guidelines start with the premise that ownership of IPRs is not by itself evidence of market power. It is only in the acts of IPRs holders that market abuse may be found. Is this a useful and valid starting point to evaluate the competitive impact of IPRs ownership?
3. What public interest justifies the grant of IPRs monopolies on an international basis?

A. What happens to the rate of return of the investor in a patented product when the invention is marketed globally, as opposed to nationally? Is the increased rate of return (if any) justifiable on a public interest basis? Is the "public interest" an interest of each individual nation, or is there a "global public interest"?

B. Do patents stimulate invention, or merely provide monopoly rents to inventors? Does disclosure of the best available means to practice the invention benefit subsequent inventors and producers sufficiently to justify the monopoly rents? Do inventors in developing countries benefit from disclosure by OECD-based enterprises? If not, why should consumers in developing countries pay monopoly rents? Would trade secret protection adequately serve the purposes of inventors and producers in all countries?

C. Should artists (protected by copyright) and inventors (protected by patent) be evaluated differently from a public interest/competition law standpoint? What if the artist is Walt Disney or Microsoft?

4. Are OECD country-based enterprises and consumers assured of benefitting from high levels of IPRs protection at the expense of non-OECD enterprises and consumers? If so, should OECD governments assume that the situation is in the best interests of OECD residents and refrain from pursuing alternatives?

5. How would a comprehensive mapping of the global IPRs system and its impact be designed? What organization might best be responsible for undertaking such a study? Are gaps in the tools of quantitative analysis too great to permit quantitative results to be meaningful? If so, what other types of analysis might be useful? See, for example, the study of the patent system, J. Jewkes, D. Sawers and S. Stillerman, *The Sources of Invention* (1958), addressing whether patents stimulate invention. Interviews of leading inventors were the principal source of data, and provided a much more interesting and complex picture than might have been obtained through strictly quantitative methods.

6. Are IPRs/competition issues and telecommunications market integration issues analytically distinct? Does the fact that both arise from the same phenomenon; i.e., the integration of global markets based on technological development, suggest the desirability of pursuing similar analytic approaches?