THE IMPACT OF MULTILATERAL TRADE NEGOTIATIONS ON INTELLECTUAL PROPERTY LAWS IN KOREA

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I. THE KOREAN ECONOMY AND NEW RECOGNITION OF THE ROLE OF IPR

A. THE KOREAN ECONOMY IN THE 1980s

During the last three decades, the Korean economy has risen from the ashes of the aftermath of the Korean War into a modern industrial powerhouse. In the 1960s, the textile sector was the vanguard of Korean industrialization, as in many other countries.[1] In the 1970s, Korea rapidly moved into heavy industries like steel, shipbuilding, and petrochemicals.[2] The 1980s brought heavy investments in the home appliance and automobile sectors.[3] Total export of goods increased from 60 million US dollars in 1962 to 82.4 billion US dollars in 1993.[4]

This economic growth was made possible by exploiting the willingness of the Korean labor force to work long hours at low wages. Behind the rapid growth and cheap labor costs lay a strong government controlled by ex-army generals and supported by efficiency driven bureaucrats.

In the mid-1980s, the pace of Korean economic development slowed down considerably. By the time President Roh Tae Woo took over the reins of power in 1987, workers began to raise their voices through newly formed unions. During the late 1980s, labor remained unruly, and sharp wage increases followed. In 1989[5], labor costs increased by 25.1%, while labor productivity increased by only 10.4%.

While the Korean economy was paying the costs of democratization, Southeast Asian countries increased their economic development. Foreign investors left Korea for more lucrative opportunities, which mostly led them to Southeast Asia.[6] Meanwhile, low-tech industries in Korea lost their competitiveness. Leaders of the Korean economy, government economic planners, and private industry managers all came to recognize that Korea needed high-tech industries to maintain its economic development.[7]

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1. BON HO KOO & KYU UCK LEE, HAN'GUK KYŎNGJE ŬI YŎKSAJŎK CHOMYUNG [A HISTORICAL REVIEW OF THE KOREAN ECONOMY] 186-89 (1991).

2. *Id.* at 224-30.

3. *Id.* at 272-73.

4. Kyŏngje Kihoek'won [Economic Planning Board], *Chuyo Kyŏngje Chip'yo [Major Economic Indices]*, KYŎNGJE TONGHYANG [ECONOMIC TRENDS], Feb. 1994, at 130.

5. NATIONAL STATISTICAL OFFICE, KOREA STATISTICAL YEARBOOK 87-88 (1993).

6. KI-TAE KIM ET AL., HAN'GUK KYŎNGJE ŬI KUJO [THE STRUCTURE OF THE KOREAN ECONOMY] 132 (1993).

7. *Id.* at 154, 161.

To attract foreign investment to its high-tech industries, Korean leaders sought to better understand the demands of foreign investors from the developed countries.[8] They found that these foreign investors demanded effective protection of their patents, copyrights, and trade secrets. Realizing that foreigners will not invest in high-tech industries without adequate protection of their technologies, Korea reached a consensus on the positive role of intellectual property rights ("IPR") in economic development.[9]

B. Problems in Protecting IPR in Korea

Under the Confucian political philosophy, political leaders were selected from the group of learned people who read the teachings of Confucius and studied poetry and history. Education was guided by the government, and reading books was essential to becoming a "complete" human being. While writers gained an honorable status through authorship, making money through writing books was not acceptable to a learned person. Printing of books was a job of the government.[10] Ideas or creative thoughts were considered to be in the public domain, not private property. Copying a book written by others was not an offense, but instead a recommended activity, reflecting a passion for learning.

This conventional attitude toward intellectual property rights has not changed greatly, even after the enactment of intellectual property laws after World War II.[11] Passing legislation is

8. To attract foreign capital and advanced technology, the Foreign Capital Inducement Act (FCIA) of Korea prescribes reduction of income tax and customs duties for specific kinds of businesses. Oeja Toippŏp (Foreign Capital Inducement Act), Law No. 3691 of 1983, arts. 14-15.

9. Before 1974, under no circumstances were the Japanese allowed to file patent applications in Korea. This was partly based on negative attitudes towards intellectual property's monopoly power. However, these attitudes have changed. For example, in 1977, the Korean Government established the Industrial Property Office as an independent adminstrative agency to handle patent and trademark matters. In addition, in 1979, Korea acceded to the Convention Establishing the World Intellectual Property Organization, July 14, 1967, 2 U.S.T. 1749, and in 1980, it acceded to the Paris Convention for the Protection of Industrial Property, Mar. 20, 1883, S. Exec. Doc. A, 91st Cong., 1st Sess. 23 (1969) [hereinafter Paris Convention]. By acceding to these international conventions, Korea has allowed almost every country of the world, access to patent and trademark protection in Korea.

10. Movable metal types, used in the printing of books, were invented during the Koryŏ dynasty (918-1392 A.D.). During the following Chosŏn dynasty (1392-1910 A.D.), many kings ordered the making of movable metal types for national book printing projects.

11. The Decree of Monopoly was promulgated in 1908. Gye Yŏng Nam et al., Sin T'ŭkhŏpŏp [The New Patent Law] 25 (1987). The Patent Act of 1946, however, is considered the first modern patent statute in Korea. T'ŭkhŏpŏp (Patent Act), Law No. 91 of 1946 [hereinafter Patent Act of 1946]. The first Trademark Act

only the first step toward the protection of IPR. Without widespread understanding of IPR in society, enforcement of IPR cannot be achieved merely by passing legislation. The perception that intellectual property laws were enacted to meet the demands of foreigners poisoned this requisite understanding of IPR.[12] Such a negative attitude toward IPR is prevalent and affects the majority of Korean society outside the top economic circles. Even law-enforcing institutions, including police, prosecutors, and sometimes courts, are not free from such a negative attitude.

C. Recognition of the Role of IPR

In spite of these difficulties resulting from the traditional conception of IPR, much progress has been achieved during the last decade. Fast-paced global economic activity motivated Korea to provide real protection of IPR to maintain its competitiveness in the high-technology market. Another source of pressure for the protection of IPR has come from the domestic industry. During the 1980s, Korea gradually increased investment in research and development ("R & D"). In 1970, total research and development expenditures, private and public, yielded only 0.38% of the Gross National Product.[13] This rate increased fivefold to 1.95% in 1990.[14] Sharp increases in R & D by Korean companies created pressure for effective protection of the fruits of R & D through patents, trademarks, and copyrights.

This paper will review how Korea has met the increased demands for IPR protection, a necessity for continuous economic development, through legislation and enforcement.

II. PROGRESS OF IPR LEGISLATION IN 1986

Following the readjustments of its judicial structure, including creation of the Federal Circuit[15] and the vesting of more power in the International Trade Commission[16] than ever before, the United States asked its trading partners for stronger protec-

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was enacted three years later in 1949. Sangp'yopŏp (Trademark Act), Law No. 71 of 1949 [hereinafter Trademark Act].

12. The American Chamber of Commerce (AmCham) in Seoul actively lobbied for strong protection of IPR in Korea.

13. Korea Indus. Tech. Ass.'n, Major Indicators of Indus. Tech. 38 (1993).

14. *See generally* Korea Indus. Tech. Ass'n, Sanŏp Kisul Paeksŏ [White Paper on Industrial Technology] (1992).

15. The United States Court of Appeals for the Federal Circuit was created on October 1, 1982. The Federal Circuit has exclusive jurisdiction over appeals from decisions of all United States district courts as well as decisions of the U.S. Patent and Trademark Office. 28 U.S.C. § 1295 (1988).

16. The International Trade Commission may exclude articles from entry into the United States if the articles are found to infringe a patent, copyright or regis-

tion of IPR. In 1986, Korea and the United States agreed,[17] after very intensive negotiations, to heighten the degree of IPR protection by amending the Korean laws relating to patents and copyrights.

A. PATENTS

The modern Korean Patent Act ("Patent Act") was enacted in 1946[18] after the Second World War. Since then the Patent Act has been revised several times, but protection for inventions of chemical substances *per se* was not allowed until 1987.[19] Until then, only process patents were available for chemical inventions. The ban on patent protection of chemical substance allowed a reprieve for local manufacturers of pharmaceuticals and agrochemicals.[20] Additionally, the term of patent protection was twelve years from the time of publication, compared with seventeen years from the granting date in the United States and twenty years from application date in many European countries. Except for these differences, Korea's Patent Act was not far behind the international standard.

As a result of the Korea-US trade negotiations in 1986, the Patent Act was amended to allow patent protection for chemical substances, pharmaceuticals, and agrochemicals. The patent term was also extended from twelve years to fifteen years. The amended Patent Act became effective July 1, 1987.

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tered trademark, even without a finding that an industry in the United States was destroyed or substantially injured. 19 U.S.C. § 1337 (1988).

17. Understanding on Intellectual Property Rights, Aug. 28, 1986, U.S.-Korea, Hein's No. KAV 1165.

18. The Patent Act of 1946 regulates patents, utility model, and design patents. Patent Act of 1946, *supra* note 11. Since 1962, utility models and designs have been governed by the Utility Model Act and Design Act, respectively, reflecting the influence of the European style of IP legislation. Silyong Sinanbŏp (Utility Model Act), Law No. 952 of 1961; Ŭijangbŏp (Design Act), Law No. 951 of 1961 [hereinafter Design Act].

19. Under the Patent Act of 1946, medicine inventions and inventions contrary to public order or morality were unpatentable. Patent Act of 1946, *supra* note 11, art. 22. In 1961, food and chemical compounds were added to the list of unpatentable inventions. T'ŭkhŏpŏp (Patent Act), Law No. 950 of 1961, art. 4 [hereinafter Patent Act of 1961]. In 1973, nuclear materials and use of chemical compounds became unpatentable. T'ŭkhŏpŏp (Patent Act), Law No. 2505 of 1973, art. 4 [hereinafter Patent Act of 1973].

20. The ban on patent protection of chemical substances has a very long history. Even in Germany, since the enactment of the first patent act in 1877, chemical substances *per se* were unpatentable until 1967. In many developing countries, chemical substances and pharmaceuticals are still unpatentable. The Agreement on Trade-Related Aspects of Intellectual Property Rights has special provisions on the patent protection of chemical substances. Final Act Embodying the Results of the Uruguay Round of Multilateral Trade Negotiations, Apr. 15, 1994, Agreement on Trade-Related Aspects of Intellectual Property Rights, Annex 1C, pt. X, art. 70, *available in* LEXIS, International Law Library, GATT File [hereinafter TRIPS].

The trade negotiations in 1986 between Korea and the United States also resulted in "Pipeline Protection" for a ten-year transitional period. The Korean government agreed not to permit companies other than specified U.S. patent holders to manufacture and sell certain pharmaceutical or agrochemical products[21] that had been patented in the U.S. but not yet marketed in Korea or the United States.[22] This agreement for retroactive protection of American patents preceded similar agreements with the European Community and Japan in the early 1990s.

At the same time, the Patent Examination Guideline was amended to make it clear that claims on micro-organisms are allowable. It was seven years after the U.S. Supreme Court declared micro-organism inventions patentable[23]. Deposit of micro-organisms with one of the two Korean deposit institutions was mandatory until 1987. The requirement of local deposit of micro-organisms was removed by Korea's accession to the Budapest Treaty in 1987.[24]

B. COPYRIGHTS

The protection of copyrights in Korea is regulated by several statutes. The most important of which is the Copyright Act, which was originally enacted in 1957 and amended in 1986 and 1993. The Copyright Act is a general law for the protection of all kinds of copyrighted works. The old Copyright Act of 1957 had no provisions for the protection of computer programs. Under the old Copyright Act, it was not clear whether computer program works could be classified as protectable subject matter.[25] The Copyright Act was amended as a result of the Korea-US

21. In total, 515 products were selected as pipeline products under the agreement. Of the 515 products, 489 are pharmaceuticals and the remaining 26 are agrochemicals. Misip'an Muljil Haengjŏng Chidosaan Habimun (Chŏnmun) [Agreement on the Proposed Administrative Guidance of Pipeline Products], Feb. 22, 1990, U.S.-Korea.

22. Taiwan and China made similar agreements with the United States in the 1990s. Jianyang Yu, *Protection of Intellectual Property in the P.R.C.: Progress, Problems and Proposals*, 13 UCLA PAC. BASIN L.J. 140 (1994); Judy Y.C. Chang & Chung-Sen Yang, *Recent Developments of Intellectual Property Law in the Republic of China*, 13 UCLA PAC. BASIN L.J. 70 (1994).

23. Diamond v. Chakrabarty, 447 U.S. 303 (1980).

24. Budapest Treaty on the International Recognition of the Deposit of Micro-organisms for the Purpose of Patent Procedure, Apr. 28, 1977, 32 U.S.T. 1241. The Contracting States recognized that the deposit of micro-organisms at one of the international depository authorities satisfied the deposit requirements under the local patent laws.

25. Without a strong tradition of case law, the omission of computer program works from the list of subject matter protected under the Copyright Act made it unclear whether the copying of computer programs was a violation of the copyright law.

trade negotiations in 1986.[26] Computer programs are defined as "protectable work" under the new Copyright Act.[27] Detailed provisions for the protection of computer program works are found in the Computer Program Protection Act, which is administered by the Minister of Science and Technology and not by the Minister of Culture and Sports, the administrating body for the Copyright Act.

Korea also has other laws in relation to copyrights, including the Phonogram Act and the Motion Picture Act, which were enacted mainly for regulatory purposes.[28] These laws are sometimes invoked in order to penalize copyright violation; thus, they offer some indirect protection of IPR. Protection of foreigners' works was not provided in the Copyright Act of 1957. Korea was not a member of either the Berne Convention or the Universal Copyright Convention ("UCC").

As a result of the Korea-US trade negotiations of 1986, a new Copyright Act was enacted to provide protection for all works enumerated in Article 1 of the UCC.[29] The kinds of work protected under the Copyright Act of 1986 cover virtually the entire scope of intellectual and cultural activity and are enumerated in Article 4 of the Act as follows: (1) linguistic and artistic works; (2) musical works; (3) theatrical works; (4) architectural works; (5) photographic works; (6) visual works; (7) maps and other diagrammatic works; and (8) computer program works.

Protection of derivative works[30] and compilations[31] are also protected under the Copyright Act of 1986. In addition, neighboring rights are protected for stage performers, phonogram producers, and broadcasters.[32] The period of copyright provided for neighboring rights of stage performers, phonogram producers, and broadcasters was twenty years. It was extended to fifty years

26. Copyright and patent rights are the two topics covered under the Understanding on Intellectual Property Rights, *supra* note 17.

27. Chŏjak Kwŏnbŏp [Copyright Act], Law No. 3916 of 1986, art. 4, para. 1 (amended Dec. 1993) [hereinafter Copyright Act].

28. Ŭmban mit Bidio-mul e Kwanhan Pŏmnyul [Phonogram and Video Works Act], Law No. 4351 of 1991, arts. 24-27; Yonghwapŏp [Motion Picture Act], Law No. 2436 of 1973, arts. 32-33, *amended by* Motion Picture Act, Law No. 3776 of 1984.

29. "Each Contracting State undertakes to provide for the adequate and effective protection of the rights of authors and other copyright proprietors in literary, scientific and artistic works, including writings, musical, dramatic and cinematographic works, and paintings, engravings and sculpture." Universal Copyright Convention, Sept. 6, 1952, art. I, 6 U.S.T. 2731 [hereinafter UCC].

30. Copyright Act, *supra* note 27, art. 5.

31. Copyright Act, *supra* note 27, art. 6.

32. Chapter 4 of the Copyright Act provides protection of neighboring rights: stage performer's rights in articles 63 to 66; phonogram producer's rights in articles 67 to 68; and broadcaster's rights in article 69. Copyright Act, *supra* note 27, arts. 63-69.

on July 1, 1994. Compared to the amendment of the Patent Act, the amendment of the Copyright Act in 1986 almost constituted a new law.

III. IMPACT OF MULTILATERAL TRADE NEGOTIATIONS

The Agreement on Trade-Related Aspects of Intellectual Property Rights[33] ("TRIPS"), has been and continues to be, a source of impact on the intellectual property system in Korea in two ways: (1) through its spill-over effects on domestic legislation and bilateral negotiations to which Korea was a party, and (2) in its binding force as an international treaty of which Korea is a party.

A. SPILL-OVER EFFECT OF TRIPS

Since 1986, when the trade ministers gathered at Punta del Este and adopted the declaration that protection of IPR will be on the agenda for the Uruguay Round negotiations of the General Agreement on Tariffs and Trade ("GATT"), the TRIPS has affected the Korean legal system even before it was finalized as a binding agreement.[34] This was especially true after the Draft Final Act for the TRIPS negotiations was submitted to the Trade Negotiations Committee of the GATT in December 1991.

1. Patents

Article 4 of the TRIPS adopts the most-favored-nation ("MFN") treatment principle[35] as a basic tenet of the TRIPS agreement. Under the World Intellectual Property Organization system ("WIPO"),[36] national treatment,[37] not the MFN, was the

33. TRIPS, *supra* note 20.

34. The representatives of the Uruguay Round negotiating governments agreed to embody results of the Uruguay Round of Multilateral Trade Negotiations at Marakesh, Morrocco on April 15, 1994. *See* Final Act Embodying the Results of the Uruguay Round of Multilateral Trade Negotiations, Apr. 15, 1994, *available in* LEXIS, International Law Library, GATT File.

35. "With regard to the protection of intellectual property, any advantage, favour, privilege or immunity granted by a party to the nationals of any other country shall be accorded immediately and unconditionally to the nationals of all other parties." TRIPS, *supra* note 20, pt. I, art. 4.

36. In principle, the WIPO system provides patent and trademark protection through the Paris Convention, *supra* note 9, and copyright protection through the Berne Convention for the Protection of Literary and Artistic Works, Sept. 9, 1886, Hein's No. KAV 2245.

37. "Nationals of any country of the Union shall, as regards the protection of industrial property, enjoy in all the other countries of the Union the advantages that their respective laws now grant, or may hereafter grant, to nationals; all without prejudice to the rights specially provided for by this Convention." Paris Convention, *supra* note 9, art. 2(1), at 23.

basic principle of the relationship among member states. Under the MFN principle, the "pipeline protection" on pharmaceuticals and agrochemicals, which the Korean government gave to U.S. patent holders in 1986, would be accorded to the nationals of all other members of GATT "immediately and unconditionally."[38]

Korea's initial effort to obstruct the MFN clause from being included in the TRIPS was supported by only a small number of countries in the negotiating group. During the early stage of the TRIPS negotiations, the Korean government therefore had to negotiate with the European Community ("E.C.") to grant pipeline protection[39] under conditions similar to those allowed to U.S. nationals.

The pipeline protection negotiations with the E.C. were painful to the Korean government. In 1986, when the first concessions of pipeline protection were made to the United States,[40] the government explained to the Korean people that the agreement resulted because of Korea's fairly large trade surplus with the United States. With the E.C., there was no trade surplus to justify another concession that would injure the domestic pharmaceutical industry. Nevertheless, at the end of 1991, the Korean government granted the same kinds of pipeline protection to the E.C. member states as that granted to the United States, but for a shorter period: five years rather than ten years.

Aside from being a political embarrassment for the government, the mechanism of implementing the bilateral agreements through so-called "administrative guidance" was not seen as a good precedent: the legal meaning of "administrative guidance" is not clearly defined and the agreement is vulnerable to attack on its enforceability.[41]

2. *Copyrights*

In Korea, even after the enactment of the Copyright Act of 1986, the standards of protection envisaged in the draft TRIPS could not fully be met. The discrepancies in the level of protec-

38. This would mean that pipeline protection should be given to many European countries and Japan, which incidently was not obligatory under the Paris Convention for the Protection of Industrial Property—the cornerstone of international patent protection under the WIPO system.

39. As a result of a series of negotiations with the EC, the Korean government finally agreed to protect 221 chemical products, most of which are pharmaceutical compounds. Agreed Minutes of the Korea-EC Consultation on the Protection of Pharmaceutical and Agrochemical Products, pt. A (Nov. 10, 1993) (on file with author).

40. Copyright Act, *supra* note 27, art. 6.

41. No legal challenge has been made yet on the enforceability of administrative guidance.

tion have been noted by domestic and foreign advocates of copyright protection.

At the end of 1993, after the Uruguay Round negotiations finally concluded, Korean legislators amended the Copyright Act. In the amendment, which took effect on July 1, 1994, protection of databases is clearly described;[42] the term of protection for neighboring rights is extended to fifty years from twenty years;[43] and rental rights are recognized for phonograms. The amendment also reduces the scope of exemption from fee payments for educational use in high school or primary schools.[44] Of these amendments, the recognition of rental rights and the extension of the term for protection of neighboring rights reflect TRIPS provisions.[45]

During the legislative process, copyright advocates introduced a bill that would have obligated manufacturers of reproduction devices, such as blank tapes for audio or video recording, photocopying machines, VCRs, audio recorders, etc., to collect specified amounts of compensation for copyrighted works at the time of selling. This bill failed to become a part of the amended Copyright Act in the face of opposition from the electronics industry. In the discussion process, the draft TRIPS provision's lack of recognition of such rights was cited against the bill.[46] This is another example of the spillover effect of TRIPS on IPR laws in Korea.

3. *Layout-Designs of Integrated Circuits*

Korea's semiconductor industry ranks third in the world, following the United States and Japan.[47] In 1984,[48] the United States enacted a law regulating the protection of semiconductor chip layout designs. Japan[49] and Europe followed suit in 1985 and 1986, respectively. In the face of such regulations by Korea's

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42. Copyright Act, *supra* note 27, art. 6.

43. Copyright Act, *supra* note 27, art. 70.

44. Copyright Act, *supra* note 27, art. 23.

45. Article 14 of TRIPS provides for protection of phonogram rental rights. Under TRIPS, phonogram rental rights can be protected through a system of equitable enumeration, instead of a prohibition against unauthorized rentals. TRIPS, *supra* note 20, pt. II, § 1, art. 14. Japan uses this system of equitable enumeration, rather than asserting exclusive rights to rentals.

46. In addition, opponents of the bill cited a famous U.S. Supreme Court decision rejecting such an idea, Sony Corp. v. Universal City Studios, Inc., 464 U.S. 417 (1984).

47. KIM ET AL., *supra* note 6, at 139-40.

48. 17 U.S.C.A. §§ 901-14 (West Supp. 1994).

49. Handōtai Shūseki Kairo no Kairo Haichi ni Kansuru Hōritsu [Law Concerning the Circuit Layout-Design of Semiconductor Integrated Circuits], Law No. 43 of 1985.

major trading partners and competitors, it became apparent that Korea needed a similar protection law.

At first, semiconductor chip layout-designs were intended to fall under the international protection of the Treaty on Intellectual Property in Respect of Integrated Circuits ("IPIC"), concluded in Washington in 1989.[50] The IPIC treaty, however, failed to enter into force because of the insufficient number of countries accepting it.[51] The draft TRIPS has an "IPIC-plus" approach,[52] with similar content to that which was proposed by industrialized countries during the preparation process for the IPIC treaty.

Korean lawmakers and leaders of the semiconductor business eagerly anticipated the conclusion of an international agreement reflecting international standards of semiconductor chip protection. Relying on clear signals sent by influential countries during the TRIPS negotiations, Korea proceeded with the legislative process under the assumption that the international standards for semiconductor protection were those drafted in the TRIPS.[53] During the law making process that concluded in December 1992, two points were of major concern: liability of innocent infringers and the requirements for awarding compulsory licenses.[54]

At that time, the design capability of the domestic industry lagged behind those of the world leaders, and Korean consumers of semiconductor chips depended heavily on imported chips.[55] It

50. Treaty on Intellectual Property in Respect of Integrated Circuits, May 26, 1989, 28 I.L.M. 1484 [hereinafter IPIC Treaty].

51. The IPIC Treaty shall enter into force when at least five states deposit their instruments of ratification, acceptance, approval, or accession. IPIC Treaty, *supra* note 50, art. 16, 28 I.L.M. at 1491. Though eight countries are signatory states, only one, Egypt, ratified the treaty as of January 1, 1994. *Treaty on Intellectual Property in Respect of Integrated Circuits*, 33 INDUS. PROP. 20 (1994).

52. The drafters of TRIPS avoided repeating the full text of the IPIC treaty. Instead, they incorporated the IPIC provisions into TRIPS and explicitly prescribed only additional matters. *See* TRIPS, *supra* note 20, pt. II, § 6, art. 35. Similarly, they took the "Paris-plus" approach for patent and trademark protection and the "Berne-plus" approach for copyright protection.

53. In the 1980s WIPO tried to draft an international standard for the protection of integrated circuit layout-designs which culminated in the IPIC Treaty, *supra* note 50. It became clear, however, that the IPIC Treaty could not satisfy the expectations of the industrialized countries including the United States and Japan, when these two countries declared at the conclusion of the Treaty they would not accept it.

54. Under the IPIC Treaty, Contracting Parties are free to decide whether innocent infringers are liable to pay a royalty to the right holders. *See* IPIC Treaty, *supra* note 50, art. 6(4), 28 I.L.M. at 1487. Awarding of compulsory licenses under the IPIC Treaty is less limited than under the TRIPs agreement. *See* IPIC Treaty, *supra* note 50, art. 6(3), 28 I.L.M. at 1487.

55. *See* KIM ET AL., *supra* note 6, at 142. Korea exports mainly memory chips and imports appliance specific integrated circuit (ASIC) chips, which require higher chip design capability than the memory chips.

is difficult for chip consumers to know whether they have bought infringing chips or not; the consumers of semiconductor chips usually do not have the technology required to analyze the layout-designs of the integrated circuits embodied in the chips they are buying. Korean consumers of semi-conductor chips actively lobbied to limit the liability of innocent infringers to the amount of profit which the innocent infringer earned directly from the use of the illegally-reproduced semiconductor integrated circuit.[56] The corresponding U.S. law provides for "a reasonable royalty" payment for each unit of infringing semiconductor chip product the innocent purchaser imported or distributed.[57]

Compulsory licensing of a registered layout-design right is available in Korea under the Semiconductor Chip Layout-Design Protection Act of 1992. The Minister of Trade, Industry and Resources ("the Minister") may award a non-exclusive license if the Minister finds that the awarding of the non-voluntary license is necessary for national security, to protect free competition, or to prevent an abuse of the layout-design rights.[58]

4. Trade Secrets

Until very recently, trade secret protection was not well-recognized in Korea. In theory, the tort provisions in the Civil Code provided the basis for actions against the theft of trade secrets.[59]

With the rapid development of electronic devices in the late twentieth century, theft of trade secrets has become easier. Many foreign technology licensors showed their concern for trade secrets by negotiating high technology license agreements with Korean licensees. Without adequate protection of trade secrets, any license of technical know-how becomes a sale of such know-how and gives the licensee rights to use the technology for an unlimited time period.

In response to the concerns of foreign technology suppliers, the National Assembly (the legislative body of Korea) approved revisions to the Unfair Competition Prevention Act and included the addition of new provisions for trade secret protection in

56. Pandoch'e Chipchŏk Hoero ŭi Paech'i Sŏlgye e Kwanhan Pŏmnyul (Semiconductor Integrated Circuit Layout-Design Act), Law No. 4526 of 1992, art. 38, [hereinafter Layout-Design Act].

57. 17 U.S.C.A. § 907(a) (West Supp. 1994).

58. Layout-Design Act, *supra* note 56, art. 13; Pandoch'e Chipchŏk Hoero ŭi Paech'i Sŏlgye e Kwanhan Pŏmnyul Sihaeng'nyung [Presidential Decree Enacting the Semiconductor Integrated Circuit Layout-Design Act], Presidential Decree No. 13972 of 1993, art. 6.

59. The Korean Civil Code does not classify torts in the same way as common law does. As a result, it describes the liability of a tortfeasor in very general terms. *See* MINBŎP [CIVIL CODE], Law No. 471 of 1958, art. 750.

1991.[60] These new provisions on trade secret protection became effective in December 1992. The trade secret law could not have been enacted in such a timely manner in Korea without the international recognition of trade secrets as a kind of IPR which was crystallized in the draft TRIPS provisions.

As discussed above, the legislative progress of many intellectual property laws in Korea during the negotiations for TRIPS was substantial. These legislative advances and the conclusion of bilateral agreements were made possible, at least partially, by the draft TRIPS provisions, which recognized the necessity of protecting new kinds of intellectual property rights and established standards of protection for existing or newly recognized rights.

B. Harmonization with the New International Standards

Like many other would-be members of the newly created World Trade Organization, Korea has yet to harmonize its intellectual property laws with TRIPS provisions as concluded in December 1993. TRIPS include, *inter alia*, standards of protection, enforcement of intellectual property rights, and acquisition of IPRs. The Korean legal system does not require substantial revisions to adopt the provisions of TRIPS other than those provided in Part II of TRIPS, that is, "Standards Concerning Availability, Scope and Use of Intellectual Property Rights." Some of the discrepancies between TRIPS and the existing Korean IP laws are discussed below.

1. Copyrights

Korea's accession to the Berne Convention has become inevitable. Because the UCC, which Korea has adopted, does not protect works pre-existing on the date of its enforcement in a specific jurisdiction, Korea's primary concern with acceding to the Berne Convention is the interpretation of Article 18, which prescribes protection of works existing at the moment the Berne Convention comes into force. The decision of whether the protection of existing works will be retroactive or not will greatly affect the copyright protection of works by foreign authors in Korea. In addition, rental rights for copyrighted works will have to be carefully reviewed. Although rental rights are required under Article 11 of TRIPS, existing laws do not provide rental rights for computer programs and cinematographic works.

60. *See* Pujŏng Kyŏngjaeng Pangjipŏp [Unfair Competition Prevention Act], Law No. 3897 of 1986, arts. 10-14, *amended by* Unfair Competition Prevention Act, Law No. 4478 of 1991. The definition of trade secret in Korea is very similar to that of TRIPS.

2. *Patents*

Compared with fifteen years of protection from the date of publication currently provided by Korean law, TRIPS requires its members to provide at least twenty years of protection. Although Korea's protection for patents is fairly close to international standards, it faces protection problems because of the difficulty in enforcing process patents, which are improvements over other patented inventions. Even though this is not an issue specifically addressed in the TRIPS agreement,[61] the general atmosphere of the international patent circle — and probably the dispute settlement procedure under the newly created WTO system — could bring this enforcement issue into the international arena.

The 1985 decision of the Korean Supreme Court in *Chevron Research Co. v. Jin Heung Fine Chem. Co.*[62] is a major obstacle in enforcing process patents in Korea. In *Chevron*, the alleged infringer was a manufacturer of intermediates for agrochemicals, and the patentee had a process patent for the intermediate compounds manufactured by the infringer. The process of the alleged infringer was the same as the patented process, except that an acid catalyst was added to the patented process which was described as a catalyzing agent for this type of chemical process. The alleged infringer was able to escape liability because the Supreme Court found that the plaintiff's patent specification did not mention the use of this particular catalyst in the patented process.[63] The Court did not recognize the principle that an owner of a dependent patent is not free to use that patent when such a dependent patent is an improvement of an existing pioneering patent.

3. *Other Rights*

The new standards for protection of trademarks do not raise any problems, except for protection of marks that contain combinations of colors.[64] Major changes in the protection of trade-

61. TRIPS has a special limitation on granting a compulsory license to the patentee of an improved invention over a senior patented invention. *See* TRIPS, *supra* note 20, pt. II, § 5, art. 31.

62. Judgment of Apr. 19, 1985 (Chevron Research Co. v. Jin Heung Fine Chem. Co.) Taepŏpwon [Supreme Court], 83 Hu 85, 1985(1) Pŏpwon Kongbo 732 (Korea).

63. *See* Soo-Kil Chang, *Korea: Enforcement of Patent Rights*, IP ASIA, Mar. 17, 1989, at 10-11.

64. Under the Trademark Act of Korea, combinations of colors are not eligible for registration as trademarks. Sangp'yopŏp (Trademark Act), Law No. 4597 of 1993, art. 2 [hereinafter Trademark Act of 1993].

marks will come from "border measures."[65] Since 1986, the Foreign Trade Act of Korea has prohibited the export or import of goods which infringe intellectual property rights in either Korea or the trading counterpart country.[66] Violations of these provisions, however, would cause cancellation of the trader's license but not suspension of goods being released. The amended Customs Act, which took effect on January 1, 1994, provides for suspension of the release of goods that infringe on trademarks or copyrights protected in Korea.[67] Under the new Customs Act, a right-holder of registered trademarks or copyrights in Korea may apply for suspension of the release of infringing goods. The Korean procedure for border measures, however, must be amended to specify the duration of suspension and the availability of, and procedure for, judicial review in relation to the suspension of release.

In addition, the existing Korean laws do not specifically protect geographical indications.[68] However, because one of the major affected products is wine, and Korea is not a major wine drinking country, geographical indications would not be a major issue in the legislative process. TRIPS provisions for industrial designs are compatible with the Korean Design Act except for the term of protection,[69] which is not believed to be a significant problem.

The control of anti-competitive practices in licensing intellectual property rights will be a subject of increasing importance in Korea.[70] With the rapid development of antitrust case law in

65. The term "border measures" is borrowed from the title of section 4 of part 3 of TRIPS which reads "Special Requirements Related to Border Measures." Border measures include the suspension of release of goods into free circulation by customs authorities and the requiring of a bond deposit or some other assurance. TRIPS, *supra* note 20, pt. III, § 4.

66. Tae'oe Muyŏkpŏp [Foreign Trade Act], Law No. 3895 of 1986, art. 44, *amended by* Foreign Trade Act, Law No. 4527 of 1992.

67. The suspension of release of goods is applicable in cases of infringement of trademark or copyrights but not patent, utility model or industrial design rights. Kwansepŏp [Customs Act], Law No. 1976 of 1967, art. 146, pt. 2, *amended by* Customs Act, Law No. 4674 of 1993. The term "suspension of release" is borrowed from the title of article 51 of TRIPS which reads "Suspension of Release by Customs Authorities." TRIPS, *supra* note 20, pt. III, § 4, art. 51.

68. Under article 22 of TRIPS, "geographical indications" identify a region or locality where a given quality, reputation or other characteristic of a good and the good itself originates. TRIPS, *supra* note 20, pt. II, § 3, art. 22.

69. Under the Design Act of Korea, the term of protection was eight years. Ŭijangbŏp (Design Act), Law No. 4208 of 1990, art. 40. Under TRIPS it is at least ten years. Article 25 of TRIPS has a special provision on protection for textile designs. TRIPS, *supra* note 20, pt. II, § 4, art. 25.

70. The Monopoly Regulation and Fair Trade Law was enacted in 1980. Tokjŏm Kyuje mit Kongjŏng Kŏrae e Kwanhan Pŏmnyul [Monopoly Regulation and Fair Trade Law], Law No. 3320 of 1980, *amended by* Monopoly Regulation and Fair Trade Law, Law No. 3875 of 1986.

Korea, and the increase of transparency as provided in Article 63 of TRIPS, the balance of intellectual property protection and maintainence of free competition requires cooperation among intellectual property lawyers and antitrust lawyers, as well as economists and consumer protection advocates.

4. Civil Remedies and Criminal Penalties

Problems in protecting IPR in Korea will primarily be those of enforcement, rather than legislation. Progress in enforcement will take a longer time to achieve than legislative improvements. In many cases, right-holders of patents, trademarks, and copyrights in Korea find it difficult to enforce their rights through civil actions. It is not easy to prove a suspected infringement: evidence of infringement must be collected by the plaintiff, and the plaintiff cannot seek the assistance of a private investigator, whose business is limited in Korea to business credit investigation.[71]

Injunctive relief, preliminary or permanent, is available in patent,[72] trademark,[73] and copyright[74] cases. The procedure for obtaining a preliminary injunction,[75] however, is time-consuming, usually taking a few months. Deposit of a security is required before a preliminary injunction is issued.

The amount of damages tends to be based on the profits earned by the infringer or the reasonable royalty, rather than the actual amount of loss to the right-holder due to the infringement.[76] Due to the lack of a pre-trial discovery process, it is very difficult for the plaintiff to prove the infringer's profits. The courts, therefore, are inclined to rely on the "reasonable royalty" rather than the actual damages approach. The legal system of Korea is unfamiliar with the idea of treble damages or any kinds of punitive damages as a civil remedy.[77] The lack of discovery, in combination with the lack of punitive damages, makes civil remedies an ineffective means of redressing an injury caused by infringement.

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71. Sinyong Chosa Ŏppŏp [Credit Investigation Act], Law No. 3039 of 1977, art. 2.

72. T'ŭkhŏpŏp [Patent Act], Law No. 4207 of 1990, art. 126 [hereinafter Patent Act of 1990].

73. Trademark Act of 1993, *supra* note 64, art. 65.

74. Copyright Act, *supra* note 27, art. 91.

75. *See* MINSA SOSONGBŎP [CODE OF CIVIL PROCEDURE], Law No. 547 of 1960, arts. 696-723.

76. The Patent Act provides three alternatives for calculating damages: actual damages, royalties, and infringer's profits. *See* Patent Act of 1990, *supra* note 72, art. 128.

77. The Civil Code of Korea, which contains the general principals of law in property, contract, tort, and family law has no provision for treble damages or punitive damages of any kind.

The above-explained pitfalls of civil remedies could be partially cured by criminal penalties in Korea. Unlike many countries with the Anglo-American legal tradition, criminal penalties are available in Korea for infringement of patents,[78] trademarks,[79] copyrights,[80] computer programs,[81] and semiconductor chip layout-designs.[82] Criminal proceedings are initiated by the police, or at the request of the rightholders through the filing of a criminal complaint. By filing a criminal complaint, right- holders can push prosecutors to take actions such as a raid and seizure of the infringing products. If the raid is successful and the infringer is convicted, the right-holder can bring a civil action for damages, using the criminal conviction as evidence.

During the last several years, the Korean government conducted large-scale criminal raids and seized infringing goods. Even though those criminal prosecutions were made mainly to avoid being listed in the "Watch List" of the United States Trade Representative, they provided a turning point to the general public's lax and vague idea of intellectual property rights and violations thereof.

Providing effective civil remedies is not the only problem of intellectual property laws. It will require a review of the judicial system in Korea as a whole, including the court structure, legal education system, the process of selecting judges, and judicial administration to mention a few. The most significant impact of TRIPS on Korea is that it urges the country to re-evaluate its entire legal system.

IV. KOREA'S RESPONSE TO THE CHANGING ENVIRONMENT

A. Reorganization of the Chemical Industry

Because the most important changes of the amended Patent Act of 1986 were made in the chemical and biotechnological area, Korea's response to the changing business environment came first from the pharmaceutical industry.[83]

At the time the results of the Korea-US negotiations for IP protection were released in 1986, the government announced an

78. Patent Act of 1990, *supra* note 72, art. 225.

79. Trademark Act of 1993, *supra* note 64, art. 93.

80. Copyright Act, *supra* note 27, art. 98.

81. K'ŏmp'yut'ŏ P'ŭrogŭraem Pohopŏp [Computer Program Protection Act], Law No. 3920 of 1986, art. 34 (amended Dec. 1993).

82. Layout-Design Act, *supra* note 56, art. 45.

83. In the early 1980s, the Korean chemical and pharmaceutical industries organized a coalition called the "Council of Chemical Product Patents." The coalition lobbied against changes in the Patent Act that would allow for the protection of chemical substance patents *per se*.

expenditure plan to increase R & D activity to search for new chemical compounds for the pharmaceutical and agrochemical industries. Government-financed research institutes, for example, have been endowed with higher funding in their search for new chemical compounds. At the same time, new research facilities for toxicity screening were added to the Korea Research Institute of Chemical Technology. A government-supported microorganism depository was expanded to collect more culture cells.

Private industry responded to the amended Patent Act by increasing their chemical patent applications. Industrial analysts were skeptical of the Korean chemical industry's ability to synthesize new chemical compounds, which is believed to require a more advanced technology than simply finding a new process for producing known compounds. The number of chemical patent applications by the Korean chemical industry in the first six months was not exceptional, but encouraging. During the first half-year after the amendment of the Patent Act allowing patent claims for new chemical compounds, the domestic industry filed forty-nine applications (5%) out of 910 applications. Filing for new chemical compounds by Korean inventors increased by 10% in 1991, four years after the introduction of chemical substance patents in Korea. Summarized below is the number of patent applications for new chemical compounds filed between 1987 and 1992.

(TABLE 1)

PATENT APPLICATIONS FOR NEW CHEMICAL COMPOUNDS IN KOREA[84]

Applications	'87 (7-12)	'88	'89	'90	'91	'92	**Total**
	49	85	140	80	161	178	**693**
Korean	(5.1%)	(5.4)	(7.0)	(4.5)	(10.0)	(12.8)	**(7.5)**
	910	1,487	1,848	1,705	1,448	1,214	**8,612**
Foreign	(94.9)	(94.6)	(93.0)	(95.5)	(90.0)	(87.2)	**(92.5)**
	273	409	496	465	368	310	**2,321**
U.S.A.	(28.5)	(26.0)	(25.0)	(28.0)	(25.4)	(22.0)	**(24.0)**
	223	372	497	457	358	229	**2,134**
Japan	(23.3)	(23.7)	(25.0)	(25.6)	(22.1)	(16.4)	**(22.9)**
	410	682	791	721	684	636	**3,924**
Europe	(42.8)	(43.4)	(39.8)	(40.4)	(42.5)	(45.7)	**(42.2)**
	4	24	54	82	40	39	**233**
Others	(0.4)	(1.5)	(3.2)	(3.5)	(2.4)	(2.8)	**(2.5)**
	959	**1,572**	**1,988**	**1,785**	**1,609**	**1,392**	**9,305**
Total	**(100)**	**(100)**	**(100)**	**(100)**	**(100)**	**(100)**	**(100%)**

Data: Korean Industrial Property Office

84. Based on data from the Korean Industrial Property Office.

Another response to the amendment of the Patent Act came through reorganization of the chemical and pharmaceutical industries. For a long time, the pharmaceutical and chemical industries in Korea developed separately. Pharmaceutical companies' major business activity is to formulate imported ingredients and to distribute them into commercial channels.[85] The mainstream chemical industries — including the fertilizer, oil refinery, and petrochemical industries — were not actively involved in the pharmaceutical business because industrial chemicals have different distribution routes than pharmaceuticals. Additionally, there was no incentive, before the introduction of chemical substance patents, to develop new pharmaceutical business in light of its heavily patent-dependent nature.

The amendment of the Patent Act in 1986, providing protection of chemical substances and micro-organisms, introduced new incentives for Korean industrial chemical manufacturers to invest in the R & D of chemical compounds having pharmaceutical uses. Manufacturers of industrial chemicals initiated searches for new compounds and increased the number of patent filings. Of the 693 patent applications for pharmaceutical compounds filed by Korean inventors between 1987 and 1992, 217 applications (31.3%) were filed by newcomers to the pharmaceutical industry — that is, manufacturers of general chemicals.[86] One-hundred-ninety-one applications (27.5%) were filed by government funded research institutions, and of those, only 40% of patent applications for chemical compounds were filed by traditional pharmaceutical concerns.[87]

B. New Possibilities for the Publishing and Software Industries

As mentioned at the beginning of this article, the traditional attitude of Korean society toward intellectual property as a private right is very different from that toward property rights in, for example, land and chattel. Even compared with patents, the concept of copyrights was much more damaged under Confucian culture. The Copyright Act of 1957 denied protection of foreign works unless they were first published in Korea. Textbooks for college students written in foreign languages had been widely copied and sold, even in large downtown bookstores. Almost every year, translations of novels by foreign authors were simultaneously distributed to bookstores by several publishers within a

85. *See generally* The Yakup Shinmoon, Pharmacy in Korea 15 (1993).
86. Based on data from the Korean Industrial Property Office.
87. *Id.*

week of the October news release of the Nobel Prize winner for literature.

The amendment of the Copyright Act in 1986 and Korea's accession to the UCC, both of which became effective in 1987, greatly changed the business environment of the publishing industry in Korea. Many new publishers entered the market, and some authors can now live on the royalties from their best-selling novels. The benefits from legislative progress, however, could not be enjoyed much by foreign authors because the effects of the amended Copyright Act and the UCC were not retroactive.[88] Foreign works first published outside of Korea prior to October 1, 1987, are not entitled to legal protection under the new laws. In order to remedy this situation, the Korea-US agreement for the protection of copyright in 1986 provided a mechanism called "Administrative Guidance." Through Administrative Guidance, printed materials published on or after January 1, 1977, and computer programs created and published after January 1, 1982, could be protected in Korea.[89]

Under the new Computer Program Protection Act, a registration system is provided even though registration is not mandatory for legal protection. The number of registrations of computer programs has sharply increased between 1987 and 1993. The total number of registrations during the period exceeds 15,000.[90] The rate of average annual increase of computer program registration during the period was 43.5%. Office management and science/technology are the two major application fields of the registered computer programs. Each of these two fields represents approximately 22% of the total registrations. Utility programs and data communication programs follow the two major application programs. Indicated below are the classifications of programs registered under the Computer Program Protection Act during the period of 1987 to 1993.

88. *See* Copyright Act, *supra* note 27, app. cl. 2; UCC, *supra* note 29, art. VII, 6 U.S.T. at 2740.

89. *See* Understanding on Intellectual Property Rights, *supra* note 17, pt. A, para. 13.

90. The Federation of Korean Information Industries, COMPUTER PROGRAM REGISTRATION NEWS, Oct. 1994, at 9.

(TABLE 2)

REGISTRATION OF COMPUTER PROGRAMS CLASSIFIED BY USE

	87 (9-12)	88	89	90	91	92	93	Total
Application Programs	110	478	802	1,168	1,300	2,307	3,316	**9,481**
Office Management	64	258	397	601	539	743	1,330	**3,932**
Science/ Technology	33	156	251	379	562	1,180	1,524	**4,085**
Others	13	64	154	188	199	384	462	**1,464**
System Programs	44	355	652	998	1,334	1,225	1,764	**6,372**
Utilities	19	70	287	422	507	372	488	**2,165**
Data Communication	8	178	123	242	344	367	543	**1,805**
Others	17	107	242	334	483	486	733	**2,402**
Total	**154**	**833**	**1,454**	**2,166**	**2,634**	**3,532**	**5,080**	**15,853**

V. SUMMARY

Korea's economic evolution has not been painless. Increased labor costs following political democratization caused by the transfer of power from the military to civilians transformed the structure of the Korean economy. Moreover, increased competition from Southeast Asian countries, which began to spur economic development in the late 1980s, has challenged the Korean economy. On the other hand, technology suppliers from foreign countries began to worry about Korean competitors copying their products.

In response to the changing business environment, leaders of the Korean economy decided to strengthen the protection of intellectual property rights to induce foreign technology and investment in Korea.[91] The pressure to change Korea's IP laws came not only from the internal economic evolution, but also directly from the international community.

The Korea-United States agreement for intellectual property protection in 1986 summarized what foreigners wanted to have happen in Korea. Substantive progress in legislation for intellectual property has been made in areas including patent protection of pharmaceuticals, agrochemicals, and micro-organisms, and copyright protection of foreign works and computer programs.

The Korea-United States agreement in 1986 was not the end to IP law reform in Korea, but rather a precursor to the effects that multilateral trade negotiations would have on Korea's IP laws. Negotiation for TRIPS impacted legislative activity in Korea from the time it was announced that TRIPS was included on

91. *See supra* note 8 and accompanying text.

the agenda for the Uruguay Round in 1986. As a result, new rights have been recognized in the Korean legal system for trade secrets and layout-designs of integrated circuits. The enactment of these laws was possible because the negotiators for TRIPS recognized those rights and provided international standards for protection.

As a result of the increase in patent protection, Korea's pharmaceutical industry began to focus its research activity on finding new candidate compounds, requiring larger investments and more time than developing the detour process which was usual under the old process patent system. Patent protection also encouraged the reorganization of the pharmaceutical industry by involving general chemical manufacturers in the pharmaceutical and agrochemical businesses. In additon, increased patent protection of copyrights induced the publishing and software industries to develop.[92]

The reform of patent laws, however, has been difficult, as the most-favored-nation treatment of pipeline protection was a difficult concession for Korea. Future IP laws will focus on the enforcement of intellectual property rights. Currently, civil remedies are time-consuming and insufficient to compensate injured right-holders.[93] Ultimately, the most significant impact of TRIPS on Korea is that it will provide an opportunity for Korea to reevaluate its enforcement system.

92. The number of books published in Korea has increased from 109 million in 1988 to 136 million in 1992. NATIONAL STATISTICAL OFFICE, *supra* note 5, at 560. For statistics on computer software registrations, see *supra* note 90 and accompanying text.

93. This has been somewhat mitigated by the availability of criminal prosecutions in Korea, which is unusual to Western countries.