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A Review of the Intellectual Property Laws in Taiwan: Proposals to Curb Piracy and Counterfeiting in a Developing Country*

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The conference emphasized more the business and legal issues of the People's Republic of China (PRC) than those of Taiwan (ROC). However, at this moment, the discussion of Taiwan's business and legal problems is still extremely important for at least three reasons. First, the trade volume between Taiwan and the United States far exceeds the trade volume between the PRC and the United States. The total ROC exports-imports in 1987 amounted to $88 billion (exports totalling $53.5 billion, imports totalling $34.5 billion, giving Taiwan a surplus of $19 billion), World J., Jan. 9, 1988, making Taiwan the fourth largest trading partner of the United States. Second, legal problems concerning Taiwan are very pressing. The protection of intellectual property rights, the $75 billion surplus, and the protection of the environment are all problems which must be discussed and solved. Third, the issues, problems, and solutions which Taiwan has experienced will be applicable not only to Taiwan but also to mainland China in the very near future.

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I. INTRODUCTION

The development of intellectual property law in Taiwan has rapidly progressed in the past five years. Copyright laws and trademark laws were modified in 1985; patent laws were extensively amended in 1986. The government, university law schools, and industry have put considerable effort into the study of intellectual property law, including the U.S. Semi-Conductor Chip Protection Act of 1984.[1]

This area of law, however, is still five to ten years behind that of most developed countries, despite the fact that Taiwan has almost all the legal framework and most of the concepts of the copyright and patent laws of the United States.[2] Underlying this lack of development are some fundamental problems such as the lack of research and development in science and technology, the lack of comparative study of intellectual property laws, a weak copyright and patent system, the conflict of interests between interested groups, and faults and omissions in the current law.

Computer counterfeiting and piracy is one of the most seri-

1. 17 U.S.C. §§ 901-14 (Supp. IV 1986). The Judicial Yuan, Ministry of Judicial Affairs, and Institute of Information Industry (III) have formed research groups to study intellectual property laws in recent years. The III is the most active; its 1987 research topics include the study of the U.S. Semi-Conductor Chip Protection Act and legal problems in bio-technology.

2. In the United States, the National Commission on New Technological Use of Copyright Work (CONTU) presented a report to Congress in 1978. NATIONAL COMM'N ON NEW TECHNOLOGICAL USES OF COPYRIGHTED WORKS, FINAL REPORT (1979). Protection of computer programs was included in the U.S. copyright law in 1980. Patent and Trademark Laws, Pub. L. No. 96-517, § 10, 94 Stat. 3015, 3028 (1980) (codified at 17 U.S.C. § 117 (1982)). The Republic of China amended its copyright law in 1985.

ous problems in Taiwan. Some of the resulting bad images are true, others are exaggerated. This counterfeiting and piracy is not only a legal problem but also a political issue affecting international trade policy,[3] and therefore, Taiwan's government appears to be honestly trying to solve the problem. Efforts by the government appear to have had some success. For example, the prosecution of counterfeiting and piracy is relatively much easier than it was in the past.[4] Of the six major cases that have involved computer software copyright infringement recently, Taiwanese courts have consistently decided in favor of foreign plaintiffs. Nevertheless, there is still more work to be done.

Completely solving counterfeiting and piracy requires both long-term and immediate measures. For long-term or primary solutions, the computer industry should drastically increase its research and development of technology in order to reduce its dependence on foreign technology; and the legal community should conduct studies of intellectual property law in general as well as conduct comparative studies of intellectual property laws so that the community can act professionally and so that potential conflicts can be reduced. For immediate relief the reorganization of the existing administrative structure (by establishing a special court, using expert witnesses and making use of arbitration), compulsory licensing, and the modification of existing laws along with the enactment of new laws are viable solutions.

Before launching into a discussion of the problems facing Taiwan and the solutions that would resolve those problems, it would be helpful to discuss both the current status of the law and administration as well as the current status of counterfeiting and piracy in Taiwan.

II. Overview of the Law and Administration

A. Copyrights

The copyright law of Taiwan includes fifty articles. Besides

3. Failure to protect the United States intellectual property rights in other countries such as Taiwan, Korea, and Japan is considered one of the major reasons for the U.S. Congress to introduce protectionist bills.

4. There were at least five major raids in 1985-1986 and fifty raids in 1986-1987. Most of the confiscated products were computer software and hardware, videotapes, and watches. Some prosecutors are more willing to prosecute pirates; one prosecutor is willing to take action as long as a receipt and a copy of infringed software can be provided to him. Weekly News, Jan. 4, 1988.

the general and supplementary provisions, the main body of the law covers copyright ownership and limitation, infringement of copyright, and penalties.[5]

Originality and expression are the two basic requirements for a copyright. A copyright vests in the author for life, unless that author is a government agency, school, corporation, or other legal entity, in which case the copyright vests for thirty years. The copyright of a compilation, motion picture, recording, video tape, photograph or computer program is also limited to a term of thirty years.[6]

Those works that are entitled to copyright upon completion are written works, spoken works, translations of written works, translations of spoken works, edited works, artistic works, drawings, musical works, motion pictures, recorded works, video tapes, photographs, lectures, musical performances, stage presentations, dances, computer programs, maps, technical or engineering design drawings, and other intellectual works.[7] Certain works are excluded from copyright protection, such as the Constitution, laws and regulations, official documents, slogans, common symbols, terms, formulae, charts, forms, notebooks, calendars, news reports that simply describe the facts, and questions from various examinations.[8]

The current copyright law was amended in July 1985 and became effective on January 1, 1986. The amendment granted protection to computer software and modified several articles. The definition of "computer program" in the United States copyright law was adopted in article 3-1;[9] the fair use concept was included, and the infringement penalty was drastically increased.

The new law extends copyright protection to the work of Republic of China (ROC) nationals upon its completion. In other words, for ROC nationals, registration is not a requirement

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5. The Copyright Law of the Republic of China [hereinafter Copyright Law] was promulgated in 1928. It was not greatly used until recently.

6. Copyright Law, *supra* note 5, arts. 8, 9, 11, 12, 13. Article 9 states that the copyright of an intellectual work produced through the collaboration of more than one person shall be vested jointly in each of the co-authors. Upon their deaths, the heirs shall continue to enjoy the right until thirty years after the death of the last surviving author.

7. Copyright Law, *supra* note 5, art. 4.

8. Copyright Law, *supra* note 5, art. 5.

9. The definition of Computer Program in U.S. Copyright Law is "[a] set of statements or instructions to be used directly or indirectly in a computer in order to bring about a certain result." 17 U.S.C. § 101 (1982).

for obtaining copyrights. Foreigners can apply for copyright registration of their intellectual work if it is published for the first time in the Republic of China or if there is equal protection in the foreigner's country.[10] Copyright protection does not include the translation of any intellectual work other than specially produced music, technical and engineering design/drawings, or art collections.[11] There is, however, a requirement that the translator, if he is an ROC national, obtain the consent of the original author for translation of his work.[12] The translator may not limit the translation of the original work by another, nor may the translation be printed with the original work.[13]

Certain acts are not deemed infringements on a copyright if the sources of the original work are acknowledged. These acts include excerpting or selecting materials for the compilation of a text book approved by the Ministry of Education, quoting in reference or explanatory notes, and reproducing text for one's own use in academic research.[14]

Upon the infringement of a copyright, a copyright owner may request the removal of the infringement, in addition to the punishment of the infringer, in accordance with the copyright law. The owner may also request compensation. The amount of compensation may be determined by the profit obtained by the infringer and the loss suffered by the injured party, but may not be less than five hundred times the actual retail price of the infringed intellectual work.[15] The criminal penalty for reproduction without authorization is imprisonment for at least six months but no more than three years. In addition to this, the infringer may be fined up to thirty thousand yuan.[16]

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10. Copyright Law, *supra* note 5, art. 17.

11. Copyright Law, *supra* note 5, art. 17. This article also allows a foreign company that has not been recognized by the ROC to file a complaint or a private prosecution.

12. Copyright Law, *supra* note 5, art. 13.

13. The translator has the copyright of his translation for thirty years. Copyright Law, *supra* note 5, art. 13-1.

14. Copyright Law, *supra* note 5, art. 29, § 2, also states:

> It shall not be considered infringement of the copyright of another if the lawful possessor of a computer program amends such program to adopt to the needs of the machine he/she is using, or copies such program for archival purposes, provided that use of such amended or copied program shall be limited to the said possessor.

15. Copyright Law, *supra* note 5, art. 33. In case of likelihood of infringement, the owner may request prevention of such infringement.

16. Copyright Law, *supra* note 5, arts. 38-48. These articles provide different punishments for various infringements, such as the reproduction, sale, rental, or display of infringed works; imitation; translation; recording without consent; and so on.

Copyright law is under the administration of the Ministry of Interior (MOI), and the Copyright Commission of the MOI is in charge of copyright registration. In order to register computer software, the applicant must submit one copy of the application, two copies of a sample of the work and a program description, and a fee of NT $600 to 6,000,[17] three times the retail price, or ten percent of rent. A foreign application requires proof of nationality and an affidavit of first publication in Taiwan.[18]

B. Patents

The patent law originally became effective on Jan. 1, 1948. Major amendments were made in April 1979 and December 1986.

Most concepts from the United States patent law are included in Taiwan's patent law, including the requirements of patentability, which include novelty, utility, and non-obviousness.[19]

A new invention, new model, or new design is patentable upon application. New inventions or models refer to an article other than one that has been published, publicly used, patented, or mass produced. They cannot simply utilize conventional know-how and obvious knowledge and make no improvement. The new invention must be practical and developed to the stage of implementation in production.

The 1986 amendments included changes in thirty-six articles and the addition of four new articles.[20] Major amendments consisted of the clarification of patentability in certain areas, such as new animal breeds, plant strains, and micro-organisms (not patentable), and their creating techniques (patentable), surgical, curative and diagnostic techniques (not patentable), and chemical and medical products (patentable);[21] the stipulation of

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One yuan is equal to one NT dollar. See *infra* note 17.

17. As of Oct. 7, 1988, one U.S. dollar was equivalent to 28.93 New Taiwan (NT) dollars. Wall St. J., Oct. 10, 1988, at C11, col. 5.

18. W. Chuan-lu, Administrative Acts of the Copyright Law, paper for the Conference on Computer Intellectual Property Right (June 24-25, 1986). Mr. Wang is the executive secretary of the Copyright Commission. An American applicant for registration of a copyright may substitute the U.S. registration certificate for the program description. A complete sample of the work is not required.

19. The Patent Law of the Republic of China [hereinafter Patent Law] arts. 1, 2, 3.

20. The 1986 amendments' new articles are 43-1, 85-1, 88-1, and 88-2.

21. Patent Law, *supra* note 19, art. 4. This provision lists seven items that shall not be granted patents. Among these are scientific theories and methods of mathematical

reciprocal protection;[22] alternatives for assessment of damages for losses suffered from patent infringement;[23] and an increase of fines for patent violations.

The alternatives for the calculation of damages are actual lost profits suffered, actual profits realized by the infringing party, or a figure determined by the patent office. The maximum punishment for counterfeiting patented inventions is a three-year term of imprisonment and a fine not exceeding three hundred thousand yuan.[24] The penalty for imitation of a patented invention is a two-year term of imprisonment and a fine not exceeding one hundred fifty thousand yuan. The willful sale, exhibition, or importation with intent to sell of any counterfeit or imitated article subjects the violator to a maximum term of imprisonment of one year and a fine of sixty thousand yuan.[25]

Patents are classified into three categories according to whether they are new inventions, new models, or new designs. The exclusive patent right for these categories are fifteen, ten, and five years, respectively.

Patent law in the ROC is silent about computer programs. The interpretation given by the Ministry of Economic Affairs (MOEA) is that they are not patentable. In theory, however, algorithms are patentable. In the 1986 amendment, the original draft included a provision to exclude computer programs from patent protection. This draft was rejected by the Executive Yuan.[26]

Patents and trademarks are under the administration of the National Bureau of Standards (NBS) of MOEA. NBS administrates the application, collection of fees, examination, re-examination, and registration of patents. The detailed practices of patent law are prescribed by the MOEA in the Enforcement Rules of the Patent Law. These cover in great detail the filing

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calculation, rules of games, sports, and other forms of exercise.

22. Patent Law, *supra* note 19, arts. 14, 88-1.

23. Patent Law, *supra* note 19, art. 82.

24. One yuan is equal to one NT dollar. *See supra* note 17.

25. Articles 89 to 94, 106 to 108, and 125 to 127 provide penalties for infringing on an invention patent, new model, or new design. Patent Law, *supra* note 19, arts. 89-94, 106-108, 125-127.

26. The Executive Yuan is the highest administrative organ in the ROC government. The President of the Executive Yuan is considered the Premier.

The deletion of the amendment was at the request of other scholars and myself. It has been argued that the patentability of algorithms and the lack of a chip protection act in Taiwan make patent laws insufficient for dealing with computer programs. *See* Chisum, *The Patentability of Algorithms*, 47 U. PITT. L. REV. 959 (1986).

procedures, documentation requirements, refiling procedures, Patent Office inquiry procedures, invalidation procedures, and define the content of patent certificates as well as the status of patent examiners.[27]

C. *Trademarks*

The trademark law consists of sixty-nine articles. Major provisions include penalties, the right to the exclusive use of a trademark, the requirements for the registration of a trademark, and the methods for review and protection of trademarks. Major amendments were made to the trademark laws in January 1983 and 1985.

Registration of a trademark is the most controversial and important provision as most disputes derive from this part of the law. The Administrative Court and the MOEA have issued a considerable number of rulings in this area.[28] When two or more persons apply for registration of an identical or a similar trademark, the first application submitted receives the registration. If they file at the same time, they must come to an agreement or the owner of the trademark is determined by lot. Some trademarks may not be registered at all, the most important of which are 1) trademarks likely to deceive the public or cause the public to form a mistaken belief, 2) trademarks identical with or similar to a famous mark of another person used on the same goods or same class of goods, 3) trademarks identical with or similar to a mark generally used according to custom on the same goods, and 4) trademarks using another person's registered trademark as a portion of its own composition.[29]

The areas of trademark law which have received the most attention are first, the definition of the infringement of "well-known" marks, and second, the interpretation of some legal terms such as "interested party" by the Administrative Court and the NBS.

The definition and application of "well-known" marks has been expanded many times. The "well-known" mark does not

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27. Articles 12 to 41 and 75 to 79 cover application procedure, examination and re-examination, and fee. Patent Law, *supra* note 19, arts. 12-41, 75-79. The Enforcement Rules, which consist of fifty-seven articles, provide additional details.

28. J. FONG, A COMPREHENSIVE HANDBOOK OF INTELLECTUAL PROPERTY RIGHTS AND THEIR PROTECTIONS IN THE ROC (1985).

29. The Trademark Law of the Republic of China [hereinafter Trademark Law] art. 27.

have to be registered in the ROC, nor must it be in the exact same class of goods. For instance, Sunkist jam was rejected for its similarity to Sunkist fruit and orange juice. Chu-shuei Cola was considered too close to Coca-Cola.[30] Both Sunkist and Coca-Cola are "well-known" American trademarks.

The second area mentioned above is important because only the "interested party" may petition in his own name to invalidate a trademark registration.[31] According to the most recent ruling of the Administrative Court, the interested party is someone who has previously registered in Taiwan a mark in any class which is identical or similar to the relevant conflicting trademark or who has previously exported goods to Taiwan which carried this mark.[32]

D. Trade Secrets and Chip Protection Laws

There lacks a concept of trade secret protection in the civil code of Taiwan. However, a concept resembling trade secret protection exists in the criminal code.[33]

There is no independent chip protection law. Under the existing law, the protection of chips must be derived from copyright law and patent law.

E. Foreign Work

Because of the reciprocal or treaty requirement in the copyright law of the ROC,[34] only works from the United States, United Kingdom, Hong Kong, and Spain receive the full protection available to citizens of the ROC; nevertheless, registration is required, except for works originating in the United States.

Article IX of the US-ROC Treaty of Friendship, Commerce and Navigation (FCNT)[35] sets forth the manner in which nationals from each country will be treated in the other country. In December 1985, the ROC Executive Yuan[36] interpreted this arti-

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30. Administrative Court decisions no. 127, 1960; no. 35, 1961; no. 237, 1964; no. 135, 1965; no. 197, 1965; no. 207, 1967.

31. Trademark Law, *supra* note 29, art. 52.

32. July 1987 decision by the ROC Administrative Court. Baker & McKenzie, Taiwan Newsl., July-Sept. 1987.

33. Criminal Code ch. 28, arts. 315-18.

34. *See supra* note 10 and accompanying text.

35. Treaty of Friendship, Commerce and Navigation, Nov. 29, 1948, United States-Republic of China, 63 Stat. 1299, T.I.A.S. No. 1871.

36. *See supra* note 26.

cle so as to grant U.S. nationals the identical copyright protection that ROC nationals receive. Although registration is not required, it is highly recommended that U.S. nationals register their copyrights because the registration certificates serve as a "prima facie" evidence in the event of a dispute. Furthermore, the police department will not accept a complaint without a copyright registration certificate.

Although translations of foreign works require no consent from the original authors, the governments of the United States and Taiwan are negotiating on this subject. Recently, the U.S. government presented to the government of the ROC a draft of a copyright protection agreement—based on the Universal Copyright Convention—which includes a provision for compulsory licensing of translations for education, academic study, or research. There would be a three-year wait for the license after the first publication. Nevertheless, it is doubtful that the draft will be accepted as it is considered too restrictive by the Taiwanese government.[37]

In patent law, protection is extended to foreigners upon registration. Foreign applications have constantly increased in recent years. In 1984, for instance, seventy-eight out of ninety-three applications belonged to foreigners.[38] Under the new patent law, however, an application may be refused if the applicant is a national of a country where the trade organization or institution has not ratified an agreement or a treaty of patent protection with the ROC, or does not allow application from ROC nationals.[39]

F. The Problems

Although there is a general understanding of the copyright, patent, and trademark laws, a common framework of legal concepts exists, and many cases have been decided by administrative and judicial courts, there are several major problems with the existing law and administration. These include insufficient knowledge of new technology, insufficient knowledge of new concepts of intellectual property law in the legal community, a weak

37. World J., Oct. 10, 1987. In addition, Taiwan's publishing community feels that the draft is too restrictive. The ROC government would like to see the waiting period reduced to one year and the new agreement contain no clause requiring retroactive payment. World J., Jan. 4, 1988.

38. P. LIU, COMPUTER LAW 117 (1986).

39. Patent Law, *supra* note 19, art. 14.

administration of copyright and patent law, conflict of interests between interested groups, and faults and omissions in the present laws.[40] The first two problems are the most pressing and require long-term solutions. The other problems are also important, but may be resolved in a relatively short period of time.

III. The Status of Counterfeiting and Piracy in Taiwan

A. Facts and Statistics

An executive of a major computer company once stated that every time his company followed the trail of piracy, it led to Taiwan.[41] That might have been an accurate description five years ago, but counterfeiting and piracy are not as widespread as they used to be. This is due partially to the anti-piracy efforts of both the government and private industry. In addition, dependence on foreign technology has been reduced in recent years, especially in the computer software area. In fact, the industrial park of Hsinchu is full of Chinese experts returned from the Silicon Valley of California.

Nevertheless, infringements of patents, trademarks, and copyrights continue. In the first six months of 1987, U.S. Customs confiscated a total of 208 shipments, worth $7.6 million. Among these were sixty-four cases from Taiwan, fifty-one from South Korea, and thirty-two from Hong Kong.[42] The most common items confiscated were watches, toys, perfumes, computers, electronics, and clothes. In recent months, two-thousand copies of forged Atari 2600 video games from Taiwan were found in California. Similar products were also discovered in Hong Kong, Singapore, Australia, the Middle-East, and South America. Currently, Universal Studios is suing a Taiwanese company in Taipei District Court for pirating Knight Rider and Airwolf

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40. There are some other problems, such as lack of international negotiators and knowledge of the trend in intellectual property law development. The National Bureau of Standards and the Copyright Commission have few or no lawyers on their staff. Additionally, large companies want protection of intellectual property; small companies do not.

41. Goldschmitt, *Thou Shalt not Dupe* Computerworld (Jan. 28, 1985) (quoting Mr. Herniques of Apple Computer). Brazil, Singapore, and Taiwan are considered the most problematic countries in terms of piracy and counterfeiting. Miller, *U.S. Software Firms Try to Curb Foreign Pirates to Protect Big American Share of World Market*, Wall St. J., April 18, 1985, at 34, col. 1.

42. Central Daily News, Jan. 5, 1988. A total of $2.7 million came from Taiwan, $2 million from South Korea, and $.8 million from Hong Kong.

toys.[43] More than four containers of counterfeit Ralph Lauren and Polo products were impounded by a federal court in San Francisco.[44]

The trend of counterfeiting and piracy has changed. In the past, Apple, IBM, Microsoft, and other major computer companies were targets for infringement. In recent years, however, licensing agreements have made these foreign companies partners with local industries. There have been many successful joint ventures in computer hardware, software, and chip production.[45] By working with local industry, these computer giants have been able to reduce the amount of instances of counterfeiting and piracy.

Because local companies are now capable of developing most of their own products, the parts and chips which have to be copied have been limited. The most commonly forged chips are BIOS and BASIC interpreter.[46] Popular software such as MS-DOS, Lotus 1-2-3, BASIC, and word processing packages are generally easily copied by small companies known as "underground factories," but most established computer companies receive their supplies from legal channels or have licensing agreements with foreign companies.

Computer products from Taiwan have gained respect in the international community, and exports in 1987 are expected to go beyond $3 billion.[47] There have been cases of these products being infringed in Southeast Asia, Europe, and mainland China. Now the tables have been turned on the Taiwanese companies—before, they copied others, now others copy them.[48]

The counterfeiting and piracy of Taiwanese products in mainland China has caused problems for the ROC. There are political and legal issues which have to be addressed before this problem can be remedied. A panel of experts has proposed per-

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43. World J., Dec. 24, 1987.

44. World J., Jan. 8, 1988.

45. Multitec or Acer, Electronics Research and Service Organization (ERSO) of Industrial Technology Research Institute (ITRI) and others had joint ventures or licensing agreements with Texas Instruments, IBM, or Microsoft.

46. P. LIU, *supra* note 38, at 163 nn.8, 9.

47. Total export of computer software and hardware amounted to $2.49 billion for the first nine months of 1987, an 80% increase from $1.38 billion for the same period in 1986. The total exports of all electronic products amounted to $1 billion in September 1987. INSTITUTE FOR INFORMATION INDUSTRY, INFORMATION INDUSTRY ANALYSIS (Nov. 1987).

48. Multitech products have been infringed upon in England. Commercial Times, Dec. 16, 1985.

mitting Taiwanese trademarks and patents to be registered in the mainland through a third country.[49]

Industries in Taiwan face a dilemma. On the one hand, they try to avoid accusations from developed countries of infringement; on the other hand, they themselves have to protect their intellectual properties from infringement. Foreign corporations have pressed hard and demanded high royalty payments or licensing fees that local companies find intolerable. Recently, twelve of the ROC's leading computer companies submitted a petition to the government, pleading for help in negotiating with IBM concerning patent right authorization. They complain that IBM has not provided enough patent authorization information, has asked for retroactive payments for copyright infringement, and demanded that the product be used only in the ROC. The companies want IBM to be more "user-friendly."[50]

Because of the dilemma facing corporations, there are industrial organizations which perform certain functions, such as educating the public, collecting information for governments, and lobbying for policy changes. Their main objective is to reduce or eliminate piracy and counterfeiting.[51]

B. Court Cases

Another reason for why counterfeiting and piracy are on the decline could be that the courts are refusing to tolerate them any longer. Taiwanese courts had affirmed the protection of computer programs, operating systems, and ROM even before the copyright law was amended in 1985. Six cases involving computer software infringement have been decided by the Taiwanese High Court and Supreme Court since 1983.[52] Apple

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49. Free China J., Dec. 21, 1987; Central Daily News, Dec. 8, 1987. Products forged by mainland merchants are sold in China and exported to other countries. Intellectual property owners from Taiwan do not know how or where to file their complaints. The director of the PRC Patent Office has stated that Taiwan residents can apply for patents through relatives in mainland China or patent agents in Hong Kong. Central Daily News, Jan. 9, 1988.

50. *See* World J., Mar. 25, 1987; Free China J., June 22, 1987. IBM representatives stated that the demand for retroactive, patent fee payment is the company's worldwide policy. Local companies also feel that Microsoft's licensing fee for MS-DOS is too high and that the terms are too restrictive.

51. For example, there is the National Anti-Counterfeiting Committee of the National Federation of Industries R.O.C. and the Association for Computer Industry and Taiwan Toy Manufacturers Association (TTMA). TTMA has established a procedure for toy manufacturers to register their intellectual property.

52. *See* P. LIU, *supra* note 38, at 267.

Computer Company was the plaintiff in two cases, and IBM was the plaintiff in another two. The Apple cases involved the copying of Apple II's Autostart ROM, AppleSoft Basic, and AppleSoft Tutorial. In the IBM cases, IBM sued for infringement of software and forgery of user documents.

The court's opinions in those six cases reflect the trend of copyright protection of computer software. The range of protection is similar to that covered in *Apple Computer Inc. v. Franklin Computer Corp.*,[53] even though Taiwanese courts have not given convincing reasons why the source code, object code, operating system, and program embedded in ROM are all protected under the ROC copyright law.

In five of the six cases, the foreign plaintiffs won (the loss was in the most recent case involving Microsoft). In the Microsoft case, the district court sided with the local defendant and validated the contract between the defendant and a third party for the distribution of MS-DOS. Microsoft is appealing the decision.[54]

Notwithstanding these strides, the judicial branch has been criticized in some respects. Most judges and public prosecutors lack sufficient knowledge of intellectual property law; there is no sufficient administrative support; most judges tend to regard the offenses as minor crimes; and proper procedures are not observed.[55] It is encouraging, however, that courts are aware of their shortcomings and are trying to improve. Courses regarding intellectual property are taught at the Judges' Training Institute, and conferences and research groups are being formed.[56]

IV. Issues With Solutions

A. *Issues of Primary Importance*

The reasons for counterfeiting and piracy are many. They

53. 714 F.2d 1240 (3d Cir. 1983). Before the Copyright Law was amended in 1985, computer programs were not legally susceptible to being copyrighted. The court had to rely on the criminal code and decide cases on the basis of forged documents.

54. Microsoft v. Evergood Computer International, case no. 75 (1986)—Chih (self-prosecution)—1408.

55. C. Chang, Civil and Criminal Procedures in the Current Chinese Law of Intellectual Property, paper delivered at the U.S.--ROC Intellectual Property Law Conference in Taipei 121-23 (Dec. 1987).

56. The author taught information law at the Institute in 1985-1986; the Judicial Yuan held conferences on patents and trademarks in August 1984, and on computers and copyrights in October 1986. The Ministry of Judicial Affairs formed the Committee on Intellectual Property Law in 1987.

include the need to counterfeit because technology has not been developed to a point where the developing country can independently develop new products; the considerable profits for infringers; and the fact that it is technically easy. Copy machines and personal computers are readily available for copying any book, computer software, or trademark,[57] and most patented products are relatively easy to forge. In addition, it is relatively safe in the domestic market as sources of forged products cannot be easily detected, and law enforcement is not effective. In fact, it is not in the developing country's interest to enforce prohibitions against piracy and counterfeiting in the domestic market since the forged products generally have similar quality but a much lower price.[58]

Dealing with these problems requires long-term efforts to research and develop new science and technology and to establish legal concepts and study the trend of intellectual property law. Some immediate steps must also be taken. Government should improve administration, review and modify the existing law, incorporate the provisions of compulsory licensing into the law, and draft a new law similar to the U.S. Semi-Conductor Chip Protection Act. All of these would reduce potential disputes concerning intellectual property rights. The most important step, however, is to strictly enforce the law so that potential violators will consider the consequences before an infringement is committed, no matter how profitable and easy it might be.[59]

1. Research and development in science and technology

Taiwan's technical knowledge in the area of software is as good as any other country's. However, funding for research and development is only 1.5% of the computer industry's budget

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57. P. LIU, *supra* note 38, at 159-165. Overpriced textbooks, computer software, and other high-technology products give excuses for copying. A $40 textbook costs a month's salary in mainland China; a copy of Lotus 1-2-3 costs almost a month's pay in Taiwan. A copy of MS-DOS costs a student's monthly room and board in Taiwan.

58. The quality of most forged products is extremely high. "Rolex" watches are accurate, "IBM" computers run very well. "Polo" clothes are just as good. Most consumers are unable to detect the differences.

59. In Taiwan, when a major case is decided by the court or amendments are made to intellectual property laws, infringers go underground. Since Taiwan is an island country, news travels fast. Businessmen are well aware of any change in the law or its enforcement.

(compared to 8% in the United States).[60] That figure needs to increase by at least ten times.

Government and industry have to engage in long-term and well-planned research and development projects in order to reduce dependency on foreign technology. This is the most fundamental solution. Until the computer industry can be self-sustaining, the country will always be in a "developing" stage and Taiwan, like any developing country with this problem, will continue to engage in a certain degree of piracy and counterfeiting.[61]

2. *Research and training in intellectual property law*

Making a comparative study of intellectual property law and promoting legal concepts of intellectual property rights are other primary solutions. The latter involves the education of law students, lawyers, judges, prosecutors, businessmen, and the general public in the value and concept of intellectual property so that the legal right becomes automatically respected.[62]

The comparative study of international intellectual property laws can also avoid the direct confrontation between countries. It is natural that policies and requirements between the developed and developing countries are different. The study of laws in other countries will reduce unnecessary conflicts and lead to an understanding of how to compromise. The intellectual property law should not only work well in the developing country, but also apply as smoothly as possible to the international community. The reason is obvious: most products with intellectual property rights need international cooperation in terms of technology and are generally exported to other countries.[63]

It is not enough that comparative study be done, but the legal community must acquire a more complete knowledge of intellectual property terms in general, as well as a better understanding of how scientific and technical things work. In law

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60. INSTITUTE FOR INFORMATION INDUSTRY, INFORMATION INDUSTRY ANALYSIS (Dec. 1985). The R&D budget for the electronics industry in Taiwan is 1.1%. *Id.*

61. In my opinion, the distinction between developed and developing countries lies in the independence of technology.

62. Due to the fact that traditional China had little concept of the intellectual property rights, education is necessary. Education should also include at least the concept of the rule of law.

63. Cross licensing is a good example. Many corporations in developed countries own factories in developing countries. This requires a certain degree of compatibility of law.

schools, there are very few full-time faculty members teaching patent, copyright, and trademark law. Government, law schools, and legal professionals generally feel frustrated when dealing with legal problems related to science and technology.[64]

Recent surveys show that the computer knowledge of law school students and students of the Judge's Training Institute is very weak (see tables 1 and 2). A total of 129 students at National Taiwan University and Soochow University law schools and 121 judge trainees participated in the survey. Two groups of questions were asked. The first group addressed whether the participants had ever heard of and then if they understood the meaning of some computer terms, such as software, hardware, bits, bytes, binary, RAM, ROM, and CPU. The second group of questions addressed whether the participants had experience with any mainframe computer, personal computer, data entry, computer program, or system analysis. Only forty-six percent of the law students understood the definition of hardware and software; less than twenty percent understood RAM and ROM; and only twenty-five percent had had experience with some kind of personal computer. The judge trainees scored even lower in the area of computer knowledge. Knowledge of RAM, ROM, and other computer related activities was almost non-existent.[65]

64. Law school in the ROC is undergraduate. Science courses are not required for a law degree and are also neglected in high school. Therefore, most lawyers and judges have only a high school level knowledge of science and technology.

65. There are 42 students from National Taiwan University, 87 students from Soochow, 60 students from Class 22, and 61 students from Class 23 of the Judge Training Institute in the survey. For individual results of each group, *see* P. LIU, *supra* note 38, at 39-42.

TABLE 1

Law Students' Computer Knowledge (Total of 129 Students)[65.1]

Computer Terms	Heard	Understood	Seen	Class	Experience
Software	80	46			
Hardware	74	46			
Bits	25	21			
Byte	22	18			
Binary	12	12			
RAM	15	17			
ROM	13	18			
CPU	24	17			
Main Frame			46	9	9
Personal Computer			54	20	32
Data Entry			39	14	26
Programming			36	14	19
System Analysis			18	5	2

TABLE 2

Judge Trainees' Computer Knowledge (Total of 121 Trainees)[65.2]

Computer Terms	Heard	Understood	Seen	Class	Experience
Software	88	31			
Hardware	86	33			
Bits	19	6			
Byte	11	6			
Binary	12	1			
RAM	18	1			
ROM	19	2			
CPU	19	5			
Main Frame			82	0	1
Personal Computer			97	2	11
Data Entry			58	2	4
Programming			36	2	2
System Analysis			16	0	0

65.1 P. LIU, COMPUTER LAW 39-42 (1986). The total represents forty-two National Taiwan University law students and eighty-seven Soochow University law students.

65.2 P. LIU, COMPUTER LAW 39-42 (1986). The total represents sixty trainees of class 22 and sixty-one trainees of class 23 of the Judges Training Institute, Ministry of Judicial Affairs, ROC.

With this low level of knowledge in technology and science, it is difficult for students to engage in extensive studies of intellectual property law. It is also difficult for judges to deal with highly technical cases, such as those involving computer piracy and counterfeiting.

There is also a misconception of the intellectual property right among the general public.[66] Some amendments have not taken into consideration the compatibility of law with the international community. For instance, there exist different protections for the copyrights between ROC nationals and foreigners, and there also exist different durations of copyrights from other countries.[67]

While there has been an increase in the number of research projects and conferences on intellectual property law and trade, government, courts, law schools, and private industry must increase their participation in the study of law.

B. Issues of Secondary Importance

1. Weak administration

The ROC government should establish an independent Patent Office and an independent Copyright Office, increase the training of staff and the number of patent examiners, and expand the budget for the small library that already exists and for the collection of additional information.

The Copyright Commission and the National Bureau of Standards (NBS) are not independent agencies. It would be better to make them independent units with separate budgets. The number of staff in both offices is inadequate. There are sixteen types of literal works that can be protected by the copyright.[68] The staff must have a certain degree of knowledge in each type of work. NBS does not have enough patent examiners and often uses part time or outside examiners.[69] These people are not com-

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66. Traditionally, China had little or no concept of the intellectual property right. Old scholars felt honored to have their work distributed in public without compensation. Confucian scholars have deemphasized "profit" for years.

67. The duration of a computer program copyright is 30 years in the ROC but 50 years after the author's death in the United States. The other example is an attempt to exclude computer programs from patents in an early draft of 1986 Patent Law amendments.

68. Copyright Law, *supra* note 5, art. 4.

69. P. LIU, *supra* note 38, at 10 n.1 & 11 n.22.

pletely familiar with the regulations and internal rules and do not receive adequate training. The Commission and Bureau must increase the training of staff and the number of examiners.[70]

Copyright related information and data necessary for patent searches are limited. Without a good library and information center, examiners have a difficult time determining whether the invention, model, or design is new. Good administration of intellectual property law will prevent and reduce unnecessary disputes and would therefore be a good investment for the government.

In addition, the Court's application of intellectual property laws should be more effective. Judges have to become more knowledgeable in the areas of science and technology, new amendments, and modern procedure. Arbitration is a good alternative for resolving disputes. Expert witnesses can be used in the discovery process to find the facts in a highly technical case.[71] Judges, however, have to be reeducated and retrained in order to cope with the rapid changes in technology that affect new cases.

2. *Faults and omissions in the current law*

In general, computer software is protected under the ROC's copyright law. Hardware is protected under the ROC's patent law. Both of them are also protected under the trademark law. Chips may be protected under either the copyright law or the patent law.

There are five ways to rectify counterfeiting and piracy: (1) file a private prosecution complaint with the court; (2) complain to the prosecutor; (3) submit a written or verbal complaint to a judicial police officer; (4) complain to the Anti-Counterfeiting Committee (ACC) of the Ministry of Economic Affairs (MOEA) for patent and trademark infringements; or (5) complain to the Anti-Counterfeiting Committee of Copyright (ACC) in the Ministry of Interior (MOI) for copyright infringements.

According to criminal procedure law of the ROC,[72] a litigant

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70. Most outside examiners are college faculty members. They are technical experts, but most of them lack administrative experience and legal training.

71. P. LIU, *supra* note 38, at 182-83. Arbitration has become popular for computer-related disputes in recent years. The American Arbitration Association handled 57 cases in 1981, 69 cases in 1982, and 72 cases in 1983.

72. Criminal Procedure Law arts. 232, 310.

may complain to prosecutors or judges.[73] District courts and the Taiwanese High Court have established special divisions and appointed trained judges to handle patent and trademark cases. These are formal judicial procedures and may take a long time. Most companies also seek help from administrative branches. With the proper documents and evidence, they can make complaints concerning patent and trademark infringements to the ACC. The ACC works with the police department and the NBS. If proper cause exists, the case is reported to a prosecutor, to the International Trade Bureau for revoking the export licence, and to banks for a consideration of credit record.[74]

Complaints made to the ACC for copyright infringements are handled in a similar way, except that the ACC will only accept cases with copyright registration.[75] The Deputy Minister of the MOI acts as the head of the ACC with a staff from different government agencies. The committee has also established a telephone hotline for reporting infringements. Complaints made to the police department may eventually cause a search, raid, or confiscation when a warrant is granted.

Because the patent law, copyright law, and trademark law of the ROC all provide for criminal penalties against infringement of intellectual property law, it is in the owner's best interests to use the criminal procedure to seek a remedy. The civil procedure requires a fee, but the criminal procedure is free. In addition, the prosecutor, with his legal authority, can easily make a search and raid or retain the defendants, making it much easier for him to bear the burden of proof than it would be for a plaintiff in a civil suit.[76]

There is no clear answer to the question of what constitutes the infringement of a copyright. The Copyright Commission attempted to establish some guidelines in 1986. The guidelines used the concepts of "substantial similarity" and "content" as the standards in determining infringement.[77] The concepts were

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73. Complaints must be filed within six months after the infringement is discovered. *See* C. Chang, *supra* note 55.

74. J. FONG, *supra* note 28, at 142-47.

75. Article 35 of the Copyright Law allows provincial and county governments and judicial police officers to receive infringement complaints for registered copyright works. Copyright Law, *supra* note 5, art. 35.

76. C. Chang, *supra* note 55, at 116-117. The other benefit of using criminal procedure is that a supplementary civil action can be introduced in the criminal proceeding according to Part IX of the Criminal Procedure Code of the ROC.

77. The doctrines of substantial similarity and content are borrowed from the

acceptable, but the guidelines were rejected for the reason that it should be the responsibility of the judicial branch to decide the case individually; it is, however, appropriate for the administrative branch to provide a general guideline for judges.

While the ROC intellectual property laws have been amended in recent years, and many problems have been solved, there are still areas that can be improved. The structure of the copyright law is one thing that has some shortcomings. The infringements are classified into several categories such as reproduction, imitation, modification, adaptation, and so on.[78] Each offense has its own penalty but, the general definitions are unclear.

Furthermore, the discriminatory treatment of foreigners regarding copyright registration and translation is unnecessary.[79] The protective nature of certain provisions creates bad feelings and makes the laws unworkable. Reciprocity does not mean discrimination. The translation problem may be solved by using compulsory licensing. The duration of copyrights is different for various works and varies from those in other countries.[80] Reasons for the differences are unknown. There must be a convincing reason for the differences for them to be acceptable by other countries.

The patent law's procedural provisions can also be improved. Administrative discretion should be reduced. NBS should clarify the standard of patent examination and provide more detailed stipulations in the procedural areas. Some of the internal procedures used by NBS should be incorporated into the formal rules.[81]

The ROC needs several new laws.[82] One of the most important new laws would be the semi-conductor chip protection law. It is in the ROC's best interest to thoroughly study and draft such a law for several reasons. The ROC is producing and ex-

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United States. Davis, *IBM PC Software and Hardware Compatibility*, 1 COMPUTER LAWYER 11 (July 1984). *See* P. LIU, *supra* note 38, at app. V.

78. Copyright Law, *supra* note 5, art. 28.

79. Copyright Law, *supra* note 5, arts. 13, 17.

80. Copyright Law, *supra* note 5, arts. 8-15.

81. Many patent applicants complain that there is a different understanding of patent procedure between NBS and the general public. The internal procedure is not available to an applicant and the process is too slow. China Daily News, May 19, 1986.

82. Among those needed are laws for computer crime, public information, privacy protection, consumer protection, and environmental protection. *See* P. LIU, *supra* note 38, at 275-283.

porting chips. Courts cannot intelligently decide the case without a governing law, and chip protection is a new legal concept. Some countries' laws require a similar law from a foreign country in order to receive national treatment. The U.S. Semi-Conductor Chip Protection Act of 1984 (SCPA) is a good example.[83] ROC nationals may not receive equal protection without a proper law for chip protection.

3. *Conflicts of interest*

There are two solutions to the conflict of interest problem. As has already been noted,[84] the comparative study of intellectual property laws can help countries with conflicting interests come to a compromise. Compulsory Licensing is another possible solution.

Compulsory licensing is not in the best interest of a developed country.[85] It would, however, avoid direct confrontation and allow the local licensee to utilize cheaper labor and resources. As a result, both parties would share the profit; the licensee would become the watchdog; and counterfeiting and piracy would be reduced.

Nevertheless, compulsory licensing should be used only as a last resort. If it is used properly, compulsory licensing can become a useful tool to measure the local market and force potential licensors and licensees to come to terms. It is to the developing country's advantage to have compulsory licensing,[86] but it can work both ways. Compulsory licensing would abolish one excuse for piracy and counterfeiting. The local industry would not feel strong pressure from developed countries or have to pay an unreasonable high price for the license;[87] enforcement of the law would become more effective.

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83. 17 U.S.C. § 914 (Supp. IV 1986).

84. *See supra* text accompanying notes 62-64.

85. Compulsory licensing may limit the profit from foreign companies of developed countries and put their lawyers out of work. However, the licensor still can negotiate the best terms from potential licensees.

86. The developed country generally has an upper hand in a high technology contract. The developing country, on the other hand, feels that such a contract is unequal, but that it has no other alternative. Japanese companies have been criticized by many countries such as Taiwan and the PRC for using developing countries for labor without truly transferring technology to local companies.

87. Many foreign companies are unaware of local conditions and demand unreasonable licensing fees to the degree that local companies cannot make a profit. This is one of the major causes of counterfeiting and piracy.

V. Conclusion

The development of intellectual property laws in Taiwan in the past few years has been positive. Amendments made to the patent law, copyright law, and trademark law have all made sense. Many difficulties have been resolved. Counterfeiting and piracy still exist, but enforcement of laws are more effective than before.

There are still several problem areas, however, which require special attention: research and development of science and technology, compatibility of laws, improvement of administration, and new approaches in enforcing the laws. Some of these can be solved; some may take time and effort from the government, legal professionals, and the industrial community. It is unreasonable to expect these groups to solve these problems overnight. The developed countries, especially the United States, should not expect Taiwan to do everything exactly the same. After all, the United States' legal system is not perfect, and the ROC and the United States do not share the same cultural or technological levels, nor do they share identical industrial environments.

Taiwan's experience in developing and solving intellectual property problems is noteworthy and can be a model for most developing countries, including the People's Republic of China. Many of the problems that the Republic of China has encountered in recent years may soon appear in mainland China.