Intellectual Property Right Protections in the Republic of China: Biotechnology and Pollution Control

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INTRODUCTION

"Every species we have is a link in the chain, we don't know how many links we have until the chain is broken completely."¹

Statements and concerns like the one expressed above have become very commonplace in a world witnessing vast destruction of its ecosystem and the biological systems necessary to maintain life. This decade has been named the decade of the environment, as we confront situations almost beyond human control. "Concern with the environment is no longer one of many 'single issues'; it is the context of everything else – our lives, our business, our politics."²

This situation becomes particularly complicated with the considerations of economic development, especially among developing nations and industrializing countries. Nations are becoming industrialized at a very

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rapid rate, and many are disregarding the effect of their economic growth on their immediate environment and on the ecosystem as a whole.\(^3\)

This concern is so great that it has spawned both bilateral and multilateral international conventions and understandings.\(^4\) This global problem identified by many of the countries of the world culminated in the meeting of the United Nations Conference on Environment and Development (UNCED), in Rio de Janeiro, Brazil in June of 1992. The Conference's strength was illustrated by the attendance of record numbers of governments, government officials, media representatives, non-governmental organizations, and observers.\(^5\)

This paper will attempt to bridge the gap between current environmental concerns and the economic considerations necessary to halt environmental destruction while maintaining and facilitating sustainable development. It will explore an international agreement combining the need for environmental clean-up with the proper protection for the transfer of biological and environmental technologies; namely, the contemporary institution of the United States-Asia Environmental Partnership (U.S.-A.E.P.).

After evaluating this agreement, the paper will examine the experience of the Republic of China on Taiwan (R.O.C.) in attempting to comply. Specifically, Taiwan is trying to increase the influx of the transfer of technology in the biotechnology and pollution control fields via stricter

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3. As an example of current popular consensus on the destruction of the ecosystem, consider the statistics presented by the "Environmental Fact Sheet" produced by One Earth Now: the threat to the ecosystem is presented by an unchecked increase in population, pollution from commercial and transportation industries, over-consumption and squandering of natural resources. Everyday 250,000+ people are added to the world; an estimated growth from 5.5 billion in 1991 to 11 million by 2001, of this an estimated 1.2 billion go hungry everyday, 42,000 children die everyday of malnutrition and preventable disease; almost 26 billion tons of topsoil vanish every year, the planet loses 80 acres of forest every minute, 39.5 million acres annually, and of that 29.7 million acres are in the rain forests of the southern hemisphere, which contain 80% of all the species on the planet; at this rate, 3-5 million species will be extinct by the year 2000; the planet loses 11.5 million hectares each year; the hole in the ozone layer above Antarctica is almost three times the size of the United States, and is continuing to grow; one-third of the population of the world (U.S., Japan and Europe) consumes 70% of the planetary resources. One Earth Now calls for environmental action and accountability from Bush Administration, BUSINESS WIRE, August 21, 1992, available in LEXIS, News Library, Arcnews File.


controls on the intellectual property involved. The R.O.C.\textsuperscript{6} government has recently introduced legislation to provide adequate protections of the technology.

The discussion will then investigate the history of the Republic of China as it pertains to the international law of recognition and how such treatment has affected Taiwan's attitude toward international trade—particularly the protection of intellectual property rights (IPRs). It will then consider Taiwan's intellectual property right protections for American firms in Taiwan, the "priority foreign country" status placed on Taiwan by the U.S. Trade Representatives Office (USTR) and finally, Taiwan's response to such classification.\textsuperscript{7}

\textit{Why Taiwan}

Taiwan is a prime example for an in-depth study due to its immense environmental problems and its longstanding resistance to adequately enforcing IPR protections.\textsuperscript{8} In order to remedy this, the R.O.C. government has recently begun to enforce and redraft IPR and technology transfer legislation. Additionally, Taiwan is a leading example of the success of the U.S.-A.E.P..

The analysis will provide an overview of the environmental problems facing Taiwan, examine Taiwan's biotechnology and pollution control industries and Taiwan's recent willingness to increase and enforce the IPR protection of foreign investors. It will then interpret the "Super 301" classification of the U.S. Omnibus Trade and Competitiveness Act of 1988 as it applies to Taiwan and the April 29, 1992 categorization of Taiwan as a persistent infringer on American intellectual property rights. Under the statute, the United States "identifies] and analyzes] acts, policies or

\begin{footnotesize}
\footnote{6. The government on Taiwan, the R.O.C., still claims to be the legitimate government of greater China. As explained later in this paper, the R.O.C. government retreated to Taiwan after losing to communist forces in 1949. The R.O.C. government was met by a large majority of Taiwanese who were living under Japanese rule for the previous 50 years. Presently, the mainly Taiwanese opposition party to the ruling Kuomintang party has called for "independence" from the P.R.C. even though Taiwan is de facto independent. Many believe that Taiwan would receive higher international recognition by doing so.}

\footnote{7. Under 19 U.S.C. § 2171, the U.S.T.R. was established within the Executive Office of the President. The U.S.T.R. has the fundamental obligation for international trade negotiations and relations.}

\end{footnotesize}
practices...which constitute significant barriers to...U.S. exports..."9 This mandatory investigation allows six months for an examination of allegations and the rendering of a judgment. This often involves the levying of severe trade sanctions, including a 100% tariff on all goods exported to the United States. During the six-month period afforded to Taiwan, it had the opportunity to prove to Washington that it has in fact made advances in its efforts to reduce the violations of intellectual property rights. The six-month grace period for Taiwan expired in October, 1992. As a result of a ‘Memorandum of Understanding,’ the 301 investigation against Taiwan was terminated.10

The primary objective of this paper is to investigate the actual practices of the R.O.C. regarding the in-country protection of American industries' intellectual property upon the conclusion of the six month period. The author visited Taipei, Taiwan, to provide a first-hand assessment of the practical application of the latest R.O.C. legislation attempting to abate the gross violations of intellectual property rights.11 Finally, the paper will conclude by using Taiwan as an example of the international business ramifications of UNCED.


11. This was achieved through the use of domestic and international documentation, and interviews with American and foreign expatriates and various Chinese business and government officials. Interviews were conducted in Taiwan, R.O.C., during the fall of 1992. Phone interviews were conducted in 1994. Interviews were conducted with the following: Bruce Berkman, Productivity Asia, Taipei; James A. Boyle, Director, Oregon State Trade Representative's Office, Taipei; Robert M. Calis, President & CEO, EyeTel Communications Inc, North Vancouver, BC, CANADA; Eric Chen, Lee & Li Attorneys-at-Law, Taipei; Carolyn E. Hansen, President Hansen International Co., Ltd., Taipei; Paul Hsu, Senior Partner, Lee & Li Attorneys-at-Law, Taipei; Peter J. Illig, Director, Friends of the Earth, Hong Kong; Dr. Ching-I Peng, Research Fellow and Herbarium Curator, Institute of Botany, Academia Sinica, Nankang, Taipei, Taiwan; Claudia L. Sarconi, Program Assistant, The Asia Foundation, Taipei; Dr. Tai-Sen Soong, Director, Agricultural Biotechnology Division, Development Center for Biotechnology, Taipei; Rex Wang, Senior Program Officer, The Asia Foundation, Taipei; Jeffrey P. Wilson, Attorney, Koo, Winkler, Hsu & Hwang, Consultants Limited, Taipei; Robin J. Winkler, Chairman Intellectual Property and Licensing Committee, American Chamber of Commerce in Taipei and Partner Koo, Winkler, Hsu & Hwang, Consultants Limited, Taipei; Tang Hsiao-Yu, Chief, Resources Conservation Division, Forestry Department, Council of Agriculture, R.O.C.; Dr. John M. Thomas, Associate Dean for International Programs University at Buffalo School of Management; Gregory D. Stevens, Vice Chairman, Bayshore Pacific, Environmental Business Services, Taipei.
THE CONVENTION ON BIOLOGICAL DIVERSITY

United States Nonsignatory Status

At a minimum, the Convention on Biological Diversity represents a political commitment by the signatories to encourage and balance sustainable development with environmental protection on domestic and transnational levels. Originally, the United States had planned to sign the Convention on Biological Diversity. However, the U.S. objected to Article 16 of the Convention: Access to and Transfer of Technology. The United States


1. Each Contracting Party, recognizing that technology includes biotechnology, and that both access to and transfer of technology among Contracting Parties are essential element for the attainment of the objectives of this Convention, undertakes subject to the provisions of this Article to provide and /or facilitate access for and transfer to other Contracting Parties of technologies that are relevant to the conservation and sustainable use of biological diversity or make use of genetic resources and do not cause significant damage to the environment.

2. Access to and transfer of technology referred to in paragraph 1 above to developing countries shall be provided and/or facilitated under fair and most favorable terms, including on concessional and preferential terms where mutually agreed, and, where necessary, in accordance with the financial mechanism established by Articles 20 and 21. In the case of technology subject to patents and other intellectual property rights, such access and transfer shall be provided on terms which recognize and are consistent with the adequate and effective protection of intellectual property rights. The application of this paragraph shall be consistent with paragraphs 3, 4 and 5 below.

3. Each Contracting Party shall take legislative, administrative or policy measures, as appropriate, with the aim that Contracting Parties, in particular those that are developing countries, which provide genetic resources, on mutually agreed terms, including technology protected by patents and other intellectual property rights, where necessary, through the provisions of Articles 20 and 21 and in accordance with international law and consistent with paragraphs 4 and 5 below.

4. Each Contracting Party shall take legislative, administrative or policy measures, as appropriate, with the aim that the private sector facilitates access to, joint development and transfer of technology referred to in paragraph 1 above for the benefit of both governmental institutions and the private sector of developing countries and in this regard shall abide by the obligations included in paragraphs 1, 2 and 3 above.

5. The Contracting Parties, recognizing that patents and other intellectual property rights may have an influence on the implementation of this Convention, shall cooperate in this regard subject to national legislation and international law in order to ensure that such rights are supportive of and do not run counter to its objectives.
believed that the Convention on Biological Diversity did not provide sufficient protection for IPRs. It argued that the provisions were written in vague language. The U.S., by becoming a signatory to the treaty as written, contended that its domestic biotechnology industry would be harmed and unnecessarily subjected to an obstruction of domestic biopatent legislation.\textsuperscript{15}

Additionally, the U.S. was dissatisfied with the final financing and biotechnology provisions.\textsuperscript{16} The treaty is unspecific as to the management of spending and to technology transfer matters. One argument holds that the developed world has an obligation to developing countries in the area of intellectual property, and that the technology in question should be transferred on a concessional basis.\textsuperscript{17} However, as then-Democratic Presidential Candidate Bill Clinton pointed out, the United States could have signed the accord with reservation, and worked out the questionable areas later. This would have allowed the U.S. to maintain its position in the forefront of this rapidly developing area.

George Bush’s response heralded that America takes international agreements seriously - it does not enter into them without intending to comply. The government believed the Biodiversity Treaty to be an unsatisfactory arrangement for American industry, especially in the rapidly developing area of biotechnology. The U.S. was not willing to sacrifice the rights of its own citizens to please the world. "The United States has nothing to...be apologetic for because [the U.S.] has the most advanced environmental record in the world."\textsuperscript{18}

The United States contended that its standards and regulations were already superior to those laid out in the Convention on Biological Diversity, and that the U.S. remained committed to the preservation of biodiversity

\textsuperscript{15} Greens Delay Legal Protection Vote, BIOTECHNOLOGY NEWSWATCH, August 17, 1992, at 14.


\textsuperscript{17} This "guilty developed world logic" is premised on the idea that the industrialized world has benefitted at the expense of developing nations and the world ecosystem in general, and that the developed countries are under a moral obligation to transfer their technology to aid in the development of the developing countries. Wei-Chin, Address at National Taiwan Normal University, Taipei, Taiwan (November 10, 1992).

\textsuperscript{18} White House Background Briefing. Re: The President’s Trip to Panama and the Rio Earth Summit, Attributable to a Senior Administration Official, Federal News Service (Federal Information Systems Corporation), June 9, 1992, available in LEXIS, News Library, Arcnws File.
within its own borders and on a global scale. "The debate on the biodiversity treaty [according to the Bush Administration...was] not about biodiversity. The text in biodiversity, frankly...[was] a bit weak from the perspective of the United States." 

"That we ultimately did not sign this convention reflects serious concerns relating to financing and protection of intellectual property rights that had nothing to do with protecting biological diversity." Bush asserted that taking the correct course of action is not always easy, and that a country may end up appearing to be a lone hold-out. Developing countries were using this conference to obtain aid via issues that are vitally important to the industrialized nations, a sort of "economic blackmail." What the U.S. government would like is a balanced approach incorporating the interests of all parties involved, and not a situation where developing nations have unlimited access to American technology.

In Costa Rica, Merck, a leading American pharmaceutical company, has reached an agreement with the Costa Rican government to exchange the establishment of national parks for chemical prospecting rights in the rich and diverse forests of the country. Merck hopes to discover new lifesaving drugs and compounds, from which they stand to make billions of dollars. If the Costa Rican intellectual property protections were not adequate to protect what Merck discovers, Merck would not be investing in that market. Thus, the American government contends that insufficient intellectual property right protection will ultimately hurt international ventures.

Opponents of the non-signatory decision question the President’s judgment, pointing to the extremely disproportionate vote. Many believe that George Bush lost his opportunity to lead the world by example in this vitally important area. According to then-Democratic Presidential Candidate Bill Clinton, "[Bush did not] understand that protecting the biodiversity of the world’s habitats and species protects Americans against squandering genetic


20. White House Background Briefing, supra note 18.


22. It is argued that Merck is taking unfair advantage of the indigenous tribes of Costa Rica, and not paying fair compensation to this less developed nation. Wei-Chin, supra note 17.

23. White House Briefing, supra note 18.

resources that can combat diseases, boost crop yields, lower energy prices, and create new growth industries for the United States."\textsuperscript{25}

**International Technology Transfer**

In order to effectively establish a system of sustainable development\textsuperscript{26} that will take into account the environmental effects of economic activity, a process of technological cooperation and assistance must be established. Developing nations experiencing rapid industrialization need access to ecologically-sound technology and appropriate environmental technology. Nations possessing leading technology must understand that it is in their best interest to foster biodiversity on a global level.\textsuperscript{27} As industrializing nations deplete their biodiversity, the effect will ricochet into the nations' capability to compete in the world market. This will inhibit their ability to pay international debts.

Some parties advocate the commercialization of technology.\textsuperscript{28} It is asserted that without efficient commercialization, the development of technology and its resulting monetary rewards will be hindered.\textsuperscript{29} Consequently, it is necessary not only to develop technology, but to establish a dissemination strategy.\textsuperscript{30}

Many industrializing nations are not equipped to productively commercialize their respective technology. Therefore, in the international arena, it is vitally important to devise a solution to the inadequate commercialization of the research from developing nations. If profits are not realized by the industrializing developing nations, public and private funding will be restricted. The realization of returns from research is used, in part, to...

\begin{thebibliography}{99}
\bibitem{26} Consider the explanation of an administration official at the time of UNCED: the United States views sustainable development...[as]...merging growth-economic growth and environmental protection in a way that both can move ahead. This is often countered by the argument that economic growth must be limited to enhance environmental protection. Martin Fitzwater at a White House Briefing, Federal News Service (Federal Information Systems Corporation), June 9, 1992, available in LEXIS, News Library, Arcnws File.
\bibitem{29} Id.
\bibitem{30} Id.
\end{thebibliography}
This development, coupled with proper commercialization and dissemination, will enhance the development of technology on a global scale. It is clear that environmental clean-up and biotechnology are two booming industries that are in dire need of western technology. The West is interested in transferring its respective technologies to the afflicted countries, but there must be an overhaul of the IPRs in the respective countries before any meaningful transfers can begin. While companies like to promote an altruistic public relations program, they must also consider that they have spent billions of dollars to develop technologies. These companies are not willing to give technology away, or to transfer it into countries where they risk losing control of the technology, or their profits or market share. Therefore, any agreement reached between two countries will be effectually meaningless without proper protection.

The United States-Asia Environmental Partnership

In an effort to aid in the environmental clean-up of one of the most threatened habitats in the world and to establish regional trading cooperation, George Bush announced on January 4, 1992, the establishment of the United States-Asia Environmental Partnership (U.S.-A.E.P.). The lead agency for the U.S.-A.E.P. is the U.S. Agency for International Development. One of the main goals of the U.S.-A.E.P. is to ease the transfer of much needed appropriate American environmental technology into the vastly undertapped market of this area. It proposes to "foster sustainable development and solutions to environmental problems in Asia and the Pacific."  

The U.S.-A.E.P. promotes business involvement because business is one of the sectors better equipped to provide solutions. Historically, business has been overwhelmingly responsible for the threat to the environment due to the choice of commercial processes employed (although in response to consumer demand). Additionally, American businesses have already had to work within the bounds of American industry and U.S. Environmental Protection Agency (EPA) requirements. As a result, businesses have cleaner approaches and answers to many difficult production questions. Consequently, American firms have developed and continue to generate state-
of-the-art technologies. Transferring such technology would greatly speed the Asian nations’ efforts to clean up their environments, hastening worldwide efforts to preserve biological diversity and control pollution.

U.S.-A.E.P. has been promoted with a "mutually beneficial" slant. For American firms this translates into easier access to Asian markets. The advantage to Asian countries is access to the American experience with pollution control and environmental technologies. This execution of the program considers the need for private sector participation in the long-term economic development of Asia, and the need to switch to environmentally sound manufacturing techniques and environmental cleanup efforts. For example, American businesses can be paired with Asian firms to aid in economic development and in eradicating the severe environmental problems facing Asia.

"Asia is growing four times faster than the rest of the world. The cities of Asia are choked with air pollution, the rain forests are threatened, and more than one-half of the rivers aren't fit to drink from." The shocking environmental degradation that Asia is experiencing can be an opportunity for American businesses. Many of the countries of Asia are economic powerhouses, with adequate financial resources available to institute the changes necessary to halt the destruction and implement rebuilding. Additionally, the governments are willing to enact policy initiatives to promote such ventures. The U.S.-A.E.P. is interested in helping American businesses capitalize on this enthusiastic market.

The U.S.-A.E.P. combines human resources, developed networks, financial assistance, biological diversity conservation and technological assistance. By the end of 1992, 28 American governmental organizations had joined in this ten year, multi-million dollar project to supply financial and technical support to companies venturing into this market. These agencies expedite business by assisting companies dealing with foreign governments and explaining and interpreting cultural differences. They provide market

34. Many countries have established important technology, but for the purposes of this paper, only American industries will be considered.


36. Id. 100 million U.S. dollars have already been secured for the initial five-year period of operation.

analyses, adaptation suggestions, funding via loans, grants and guaranteed financing, and can establish native contacts for interested exporters and investors. Major areas of concern include: coastal zone management, toxic waste handling, cleaner production methods, sewage treatment, air and water pollution, more productive energy sources and energy efficiency. Asian nations realize that economically sound processes and products will expedite and enhance their industrialization; hence, they are eager to receive such technology. The U.S.-A.E.P. will provide a real chance for technology transfer through licensing and joint-ventures.

"In Asia, friendships are often more important than procedures for business, and form often supersedes substance..." To be successful, American firms must realize that any entrance into the Asian market should be considered a long-term investment, and that while short-term profits may be realized, the rewards for long-term initiatives will be much greater. Thus, firms with long-term proposals will be more likely to win contracts than firms whose sole purpose is to perform only one duty. Additionally, the inclusion of service and technical training in contracts puts bidders in an ever more favorable light.

In 1989, the Asian Pacific Economic Cooperation (APEC), was initiated to foster wide-spread market-based economic associations in the Pacific Rim. In October 1991, Taiwan became a member of APEC. "APEC itself is emerging into an important instrument to promote trade, investment, technology transfer, and growth in the Pacific region." "The principle of APEC is consensus." The membership of APEC accounts for

38. By way of example, in Taipei, Taiwan, only 3% of the raw sewage receives any sort of chemical treatment. This is lowered to 1% island-wide. See generally, Taiwan 2000, infra note 84.


60 percent on the world's gross domestic product exports and are the foundation for approximately 5.3 million American jobs.\textsuperscript{44}

The United States and Taiwan continued to work on trade liberalization at the ministerial meeting of APEC in November of 1993.\textsuperscript{45} "Trade liberalization is the fundamental unifying theme for the APEC economies." (emphasis added)\textsuperscript{46} The members of APEC hope to successfully conclude the Uruguay Round of the General Agreement on Tariffs and Trade (GATT),\textsuperscript{47} and to ease trade barriers among APEC members even further. GATT has been referred to as the "global trade watchdog."\textsuperscript{48} Taiwan has been trying to gain accession into GATT. Its admission into various other regional and bilateral trade agreements will help to facilitate that pursuit.

"Asia is still a magnificent marketplace for the U.S. in all goods, both industrial and agricultural, and for that matter, in services. So [the U.S.] should never, ever forget the potential of that market."\textsuperscript{49} It appears that the U.S.-A.E.P. will be remade into a priority program under the Clinton-Gore Administration's economic development program.\textsuperscript{50}

With the acceleration of economic growth in the Pacific Rim, the area has been identified by many as "the place for business in the decade of the '90s and well into the next century."\textsuperscript{51} There is an alternate argument holding that, with the fall of communism in Eastern Europe, Eastern Europe is the land of opportunity for transnational business. However, the transition of

\textsuperscript{44} Id.

\textsuperscript{45} APEC's members include Australia, Brunei, Canada, People's Republic of China (P.R.C.), Hong Kong, Indonesia, Japan, Malaysia, New Zealand, the Philippines, the Republic of China, South Korea, Thailand, and the United States. Additionally, this is the only organization to include all three "Chinas" (Hong Kong, Taiwan and the PRC). The PRC conceded a major point when it allowed the inclusion of Hong Kong and Taiwan to APEC in 1991, recognizing the unassailable economic truth of the high fiscal yield of trade with these countries (U.S.$14 billion with Taiwan indirectly).\textsuperscript{41} In Seattle, supra note 41.

\textsuperscript{46} Id.


\textsuperscript{48} GATT Chief, infra note 106.

\textsuperscript{49} Remarks by Yeutter, supra note 16.

\textsuperscript{50} The U.S.-Asia Environmental Partnership, supra note 39.

\textsuperscript{51} Moving Toward 2000 With The R.O.C. on Taiwan, CHINA EXTERNAL TRADE DEVELOPMENT COUNCIL, (Taipei, Taiwan)(1992) [hereinafter Moving Toward 2000].
Eastern Europe to a market economy will be frustrating and difficult. The political, social and economic aspects of that society will have to undergo major transformations before any real industrial progress can be made. Thus, the Asia-Pacific region is ripe for international business. As its economies prosper and expand, the governments are actively working to incorporate easy access to markets and the highly competent work force.


**Taiwan: A Prime Area for Study**

Taiwan has been industrializing at an incredible rate. This development, however, has been at the expense of its immediate environment. The unchecked degradation of the environment has led to increasing environmental problems. This includes tremendous air, noise and water pollution.

The air is asphyxiatingly full of the emissions from the over 11 million cars and 18 million motorcycles used in daily transit. The previously unregulated garbage disposal system has left the landscape cluttered with dangerous debris. The waterways parallel this, as they are congested with both solid and liquid waste.

As the people on Taiwan have raised their standard of living, they have compiled great financial resources. They now desire a better quality of life and have the money to pay for environmental clean-up and pollution control mechanisms. Additionally, the R.O.C. desires to mature into an international contender, and they realize that these two purposes compliment each other. Thus, they strive to combine the two in an effort to elevate the overall standard of living and quality of life of the people on Taiwan.

Taiwan has been identified by the U.S.-A.E.P. as a potential partner for many projects, including rural energy development and the preservation of biological diversity as it pertains to forests and marine resources. 

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52. Soong, *infra* note 179.


54. *Id.*


56. *Severe Pollution, supra* note 35, at 27.
technologies." It is estimated that Taiwan will have no landfill space by the year 2000, and additionally, with its rapid deforestation, 60 percent of the regional species will be extinct by the same date.

It appears that the R.O.C. government agrees with the mutually beneficial argument of the authors of the U.S.-A.E.P.. Where "successful strategic alliances" can be developed, "all have benefitted a great deal." American companies will receive a broader and a more effective passageway to Southeast Asian markets, as well as to mainland China. Taiwan's businesses will gain the latest Western technologies, which are necessary to improve their own industrial processes. This will enable Taiwan to be more productive business partners in the future. Additionally, through the processes of licensing and joint ventures, substantial technology transfer can be achieved.

Taiwan has been proclaimed an "economic miracle." This "economic miracle" is legislating with an eye toward laying a firm foundation for the 21st century. A main thrust of the strategy is the Six-Year National Development Plan. Additionally, Taiwan is seeking a more efficient allocation of resources and greater research and development, including the transfer of technology.

Since the 1960s the R.O.C government has been legislating with the hope of encouraging the people on Taiwan and foreign nationals to invest, both in Taiwan and abroad. This was an effort to spark the economic growth necessary to allow Taiwan to gain capital reserves. The R.O.C. Constitution specifically cites governmental support for the use of scientific technology to effectuate environmental quality subsidization, hence the R.O.C. established the I.T.R.I. According to some observers, over the past three

57. Id.

58. Taiwan 2000, infra note 84.


60. See supra note 53.

61. See infra, note 95, 97.


64. R.O.C. (1949), art. 144.
decades, the government has spared no expense in attempting to supplement rural development— including technological cooperation—and this has helped to stimulate the R.O.C. economy.\(^\text{65}\)

For the people on Taiwan, traditional manufacturing has become less competitive due to the appreciation of the New Taiwan Dollar (NT dollar), a marked rise in the cost of labor and the recent national trend stressing environmental protection.\(^\text{66}\) However, the gross national product (GNP) of Taiwan has made it second only to South Korea, of Asia's "Four Dragons." Additionally, there appears to be an equitable distribution of the wealth that has accumulated on the island of Taiwan.\(^\text{67}\)

**STRUCTURAL INFORMATION**

*The International Legal Status of Taiwan: The Problem of Non-Recognition*

In order to better understand Taiwan's dilemma, it is worthwhile to briefly examine its experience. Historically, mainland China controlled the island of Formosa as Taiwan was called. They relinquished control in 1895 to the Japanese as a result of war. In 1945, Formosa was returned to mainland China's control. As a result of World War II, the Communists took over mainland China, which forced the R.O.C. Nationalists administration to seek refuge on the island of Formosa, later renamed Taiwan. The initial departure of the from mainland China to Formosa to create a democratic society effectively created two Chinas: The People's Republic of China (P.R.C.) which is under Communist control and occupied the mainland territories, and the Republic of China (R.O.C.) on the island of Taiwan.\(^\text{68}\)

Taiwan endured tremendous bombing by Allied forces in World War II. When the R.O.C. Nationalists relocated to Taiwan, they were faced with trying to survive and prosper on an island that was short on resources and lacked any sufficient infrastructure, technology or capital. Taiwan has often been referred to as an "economic miracle" for its ability to overcome these obstacles and become a viable economic force.\(^\text{69}\)

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\(^\text{65}\) MA, *supra* note 63, at 10.


\(^\text{68}\) See generally, MA, *supra* note 63.

\(^\text{69}\) *Moving Toward 2000, supra* note 51, at 3. Additionally, Dr. K.T. Li, Senior Advisor to President Lee Teng-Hui, puts forth the following characterization of Taiwan's four periods of development:

(1) Late 1940s to early 1950s— from economic colonialism to import substitution in light
The split had many political repercussions relating to state recognition in the international legal system. This ultimately affected both sides' ability to be able to participate in treaties and agreements regarding international trade.

Presently, Taiwan is not recognized by most of the countries of the world as an independent nation, nor is it represented in the United Nations or in any of the UN-affiliated international organizations (although it was until 1979). Taiwan consists of 14,000 square miles, 20 million people, a military of over 500,000 with two million more in reserves and a per capita income of just over U.S. $6,000 in 1988. Additionally, it is the 13th leading trading nation in the world and the fourth leading trader with the United States in 1990. These factors seem to indicate that Taiwan should be recognized by the international community as an independent nation and given the status necessary to participate in international negotiations and organizations.

The basic necessary qualifications of a state under the UN Charter and general practice include:

1. a permanent population
2. a defined territory
3. an independent government in control
4. the capacity to enter into relations with other states.

Although the R.O.C. has all of these prerequisites, it is nevertheless officially unrecognized by most of the nations of the world. The international community does not have a centralized authority to determine which states qualify for statehood and which states do not. Rather, it is left up to the respective country to recognize nations as independent. Unfortunately, this decision is usually based on domestic policy considerations rather than the principles laid out in international law. Thus, the process is highly politicized.

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72. U.N. CHARTER, art. II.
As a result of the "normalization" of relations between the United States and the P.R.C. in the early 1970s, Taiwan was derecognized by the Carter Administration in 1979. In that same year, Congress enacted the Taiwan Relations Act (TRA) which was an attempt to unofficially recognize Taiwan. Under the TRA, Taiwan was essentially treated as an independent state and, despite the lack of formal recognition of Taiwan, the Act went on to authenticate the R.O.C. government and to validate its dealings with the United States.

Among the many provisions of the Act, the TRA maintained:

Sec. 4(b):

(7) The capacity of Taiwan to sue and be sued in courts in the United States, in accordance with the laws for the United States, shall not be abrogated, infringed, modified, denied, or otherwise affected in any way by the absence of diplomatic relations or recognition.

This functions to preserve the right to adjudication of disputes in American courts under American law.

Due to the political nature of recognition, the desire for friendly relations with the P.R.C., and the strategic and political interests therein, it is highly unlikely that Taiwan will be re-recognized by the United States or any other member of NATO. A formal recognition of Taiwan would jeopardize relations with the P.R.C., a price the United States is not willing to pay. It does appear, however, that the United States has been able to maintain a cordial working relationship with both countries due to the advent of the TRA. Initially, the PRC objected to the passage of the TRA, by stating "it betrays the principles that have brought about the normalization of relations between China and the United States," but the disapproval was only perfunctory and has had no real impact.

Obviously, after being derecognized a country will not feel compelled to protect any of the rights of the offending county. The panic that ensued


75. Chiu, supra note 70, at 18.

immediately following derecognition of Taiwan was marked with a short-lived recession. The next several years were economically unsound in Taiwan. The island nation also feared invasion by the mainland. Taiwan thought that without official recognition, the PRC would be more apt to attack and reclaim the island.

When the then Deputy Secretary of State, Warren Christopher, went to Taipei to announce the decision to formally derecognize Taiwan in 1979, he was pelted with eggs, tomatoes, stones and a variety of verbal assaults. When the then Deputy Secretary of State, Warren Christopher, went to Taipei to announce the decision to formally derecognize Taiwan in 1979, he was pelted with eggs, tomatoes, stones and a variety of verbal assaults. The people on Taiwan were deeply insulted by the actions of the United States. Those who remember derecognition recall being aghast at the actions of the United States and tell of going to the government buildings and throwing eggs at the U.S. diplomat.

Due to Taiwan's derecognition, it has not been invited to participate in many international multilateral conventions or international public organizations. This includes the GATT. This inability to participate internationally frustrates Taiwan's attempts at trying to eliminate intellectual property piracy and counterfeiting. GATT established IPR standards for protection of IPRs. Members of GATT are given special treatment by fellow members — the acceptance into GATT would facilitate Taiwan's ability to exchange technology with member nations. It would also hold it to an internationally-accepted legal standard regarding adequate IPR protection.

Taiwan is well on its way to becoming a world economic superpower despite its exclusion from GATT talks and its unrecognized status by most of the world. "The economic success of this little island nation is, by any measure, a modern economic miracle." The economic growth of Taiwan and its continuing efforts to cooperate with accepted international principles of law, especially in the realm of intellectual property rights protection, make Taiwan a prime area of study. Taiwan is an economic powerhouse.

Despite the prohibition on Taiwan to enter into international treaties, to show its dedication to environmental concerns and to foster positive international relations, Taiwan sent representatives to UNCED in June of

77. Lori Fisler Damrosch, The Taiwan Relations Act After Ten Years, CONTEMP. ASIAN STUD., Summer 1990, at 1.

78. Interview with Jason Wang, in Taipei, Taiwan, R.O.C. (December 1992). The R.O.C. was insulted because no cabinet official was sent.


1992. The R.O.C. delegation was very active during the conference and continues to support all of the treaties that were presented in Brazil. Although it could not sign any, it will try to abide by the terms of each. Since Rio, Taiwan has had a change in administration – the current administration is also supportive of UNCED.

ENVIRONMENTAL CONCERNS IN TAIWAN

The government of Taiwan has recognized that its desire for expedited environmental clean-up and pollution control is linked to the importation of foreign technology. It realizes that these issues are not mutually exclusive, but delicately intricately interconnected and that they must be addressed simultaneously. Among other things, law, management systems and enforcement need to be addressed. Additionally, the government and the private sector both understand that there is tremendous benefit in joining these issues together. They are cognizant of the financial benefit realized by more efficient production processes, the health interest of the national standard of living in a clean environment and the public relations benefits of trying to lead industrialized nations in such a quest. Taiwan has "temper[ed] the profit motive with an environmental posture."

The government sponsored a seven-year comprehensive environmental study, Taiwan 2000, in the early 1980s. This study involved scientists from different countries and varied disciplines to analyze the environmental problems facing Taiwan. The study then made recommendations regarding a course of action incorporating commercial, sociological and biological forces. The suggestions were aimed at both the public and private sectors, in an effort to disseminate information and to eradicate the environmental degradation of the island.

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81. Interview with Tang, infra note 87.
82. Id.
83. Arthur Andersen, supra note 62, at 1.
84. REPUBLIC OF CHINA ENVIRONMENTAL PROTECTION AGENCY, Taiwan 2000 (1990).
Biodiversity Movement in Taiwan

Nature conservation has been a priority in Taiwan since the early 1980s. The government increased funding in this area and relevant scholarly research has paralleled this change in public policy, thus adding momentum to the movement. "The goal of current conservation policies is to maintain the balance between conservation and development." Taiwan recognizes the importance of cooperating with the international community and the impact of domestic endangered species legislation on the global community.

Eventually, as public awareness increased, the attitude of the populace changed to compliment the government’s action and citizens began demanding a cleaner environment. They became aware of the need to address unchecked business expansion in order to maintain environmental quality. They soon realized that they must reach a happy medium which incorporates pollution control and economic growth to allow for sustainable development.

During the late 1980s, Dr. Peter Raven-Hansen lobbied the government of Taiwan on the importance of biodiversity. Taiwan has uniquely diverse ecosystems, with the low lands possessing the most variance. As a result of many factors, the R.O.C. government established a coordinated effort to preserve biodiversity. Previously, there had been many scattered and decentralized efforts to preserve and catalog the diversity on the island of Taiwan. The government has created a program on biodiversity

85. There has been governmental action since 1965. In 1965, the Taiwan Forestry Bureau was established to manage natural resources and ecology. In addition to establishing relevant legislation, the Bureau was responsible for increasing public awareness of conservation issues and techniques. TAIWAN FORESTRY BUREAU, Nature Reserve of National Forest, (1990), at 9.

86. Interview with Ching-I Peng, Curator, Institute of Botany, Academia Sinica in Taipei, Taiwan, R.O.C. (Dec. 10, 1992) [hereinafter Peng].

87. Interview with Hsiao-yu Tang, Chief, Resources Conservation Division, Forestry Department, Council on Agriculture in Taipei, Taiwan, R.O.C. (Dec. 16, 1992)[hereinafter Tang].


89. COUNCIL OF AGRICULTURE, R.O.C. EXECUTIVE YUAN, Clarification Statement, (Dec. 21, 1992). Consider also legislation aimed at reducing the illegal trading and smuggling of endangered animal byproducts...for example the South African Rhino horn has consistently been smuggled into Taiwan and the government is actively pursuing action to stop this.

90. Director, Missouri Botanical Gardens. Interview with Peng, supra note 86.

91. Peng, supra note 86.
under the leadership of the Council of Agriculture. The Council of Agriculture decides which species to preserve and which fields to try to reconstruct.

The Biodiversity Program has established a biodiversity inventory committee to, among other things, analyze the biodiversity of the island. This research program has surveyed all of the involved parties to determine a course of action. The strength of this movement depends almost exclusively on the actions of the committee, which is comprised of interested scientists from a variety of fields. Taiwan's policy will reflect the scientists' specialties and particular interests.

The government is very supportive of the biodiversity movement in Taiwan. In theory, the biodiversity inventory committee is very powerful as it has sole responsibility for deciding what issues will be given priority status, where experiments will be conducted, what research will be funded and which groups will receive monies. The committee is funded exclusively by the Council of Agriculture. If taken seriously and handled properly, this committee will be determinative of the biodiversity programs in the future.

According to leading scientists, the damage done in Taiwan is not irreparable. Many species, once identified by Taiwan as endangered, have been restored due to preservation efforts. The extent of the damage depends on the place which has experienced destruction. Certain areas are naturally equipped to better absorb pollution than others.

92. Tang, supra note 87.

93. It is the mission of the Biodiversity Program to coordinate and study past efforts, provide inventories of previously neglected areas of the island, analyze the data provided by these inventories as to identify endangered species and study the bio-resources available, and use the information to develop new bio-products and processes, all in an attempt to implement a system of sustainable agricultural production on the island. Tang, supra note 88.

94. Tang, supra note 87.

95. For example, Dr. Ching-I Peng of the Botany Institute, Academia Sinica, Taipei, Taiwan, R.O.C.; Dr. Haio-yu Tang, Chief Resources Conservation Division, Forestry Department, Council of Agriculture, Taipei, Taiwan, R.O.C..

96. For example, Drs. Peng, Raven, Soong and Tang.

97. The Taiwan monkeys provide an example of the success of conservation efforts in Taiwan. Tang, supra note 88.

98. Peng, supra note 86.
R.O.C.'s Recognition of the Importance of Increased Trade

Geographically, Taiwan is strategically located for shipping in the Asian region. With the increase in the value of the NT dollar, the improvement in the quality of life, environment and education, the people on Taiwan are demanding more from their government, representatives and local businesses. Additionally, they want to increase the quality of their leisure and sport activities.

In an effort to become one of the world's leading industrialized countries, Taiwan is at the apex of many national internal development plans. "Its choice to wed industrialization and protection of the environment will serve as a prudent guidepost to have economic growth without ruining the natural setting of that growth."99 The government and private sector are working together to make a solid foundation for the year 2000.

The government is actively pursuing a campaign to increase the attractiveness of Taiwan for investment and trade. It has launched a six-year national development plan that incorporates regulatory encouragement for trade and investment, a commitment to building a more solid infrastructure to handle the existing and increasing volume of business, and investments in research and development (especially in biotechnology and pollution control). In addition to the business aspects of the overhauling of the commercial aspects of R.O.C. society, there is a dedication to improving cultural, educational, housing and health related issues. The R.O.C. is undertaking a long-term, but holistic, approach to addressing the immediate needs of the people, while preparing them to take their place on the world stage of international business. "Everything...is a priority, and the winner is meant to be everyone."100

Financial, Technological, Communications and Transportation Center of Asia

In its bid to become a leading industrialized country, Taiwan is hoping to develop itself and its industries, so that it can become the financial, technological, communications and transportation center of Asia.101 Governmental policies have reflected this desire as regulations have been changed to accommodate increased investment in Taiwan and to ease international access to its markets. Taiwan is a pivotal point in Southeast Asia, making it logistically able to entertain such business ventures. As Taiwan becomes a more viable force in international trade and investment, its financial system will be strengthened, and with the advent of computerized financial capabilities, the opportunities for Taiwan are endless.

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99. Arthur Andersen, supra note 62, at i.

100. Id.

101. Id.
With Taiwan’s booming economy and its desire to become a world economic power, participation in GATT is an obvious and essential next step. In September, 1991, a working group was formed to consider the admission of Taiwan into GATT. Taiwan’s membership in the GATT would provide great opportunities in conjunction with the resulting responsibilities of membership. The prospects are as follows:

1. Upon entry into GATT, Taiwan will enjoy the favorable tariff rates accorded GATT members.
2. Taiwan will benefit from an established set of rules that today cover about 2/3 of the world’s trade.
3. Accession to GATT would give Taiwan the opportunity to help set trade rules for the future.

The responsibilities include:

1. Requiring Taiwan to bring its trading practices into conformity with world standards.
2. Building on the gradual liberalization that has taken place over recent years through unilateral reforms and bilaterally negotiated agreements.

102. Remarks by Hills, supra note 42.

103. As a result of the international legal status of Taiwan, it has historically been excluded from international treaties, including GATT. The PRC is a main opponent to the Taiwan’s admission, for political reasons. The current consideration for membership must recognize the political intricacies of the international relationship of the R.O.C. and as such, it will not be admitted on its own. Rather, it will be combined with a number of local islands in an attempt to politically mask the admission of Taiwan to GATT. On a practical level, the R.O.C. has been unwilling to enforce IPRs and this has been noted by the membership of GATT and is an important consideration to the membership. As Taiwan begins to enact legislation and properly enforce it, their bid for admittance to GATT will be reinforced. Chen, supra note 53.

104. Remarks by Hills, supra note 42.

105. Id.
The Uruguay Round of GATT specifically addresses intellectual property rights. The negotiations were attended by 108 nations, representing more than 90% of the world's trade. The USTR estimates that if the current negotiations are successful (by USTR standards), production could be increased by 5 trillion United States dollars (U.S.$) in the next five years and, of that, U.S.$2 trillion would be "Asia's share." The thrust of these talks include, among other provisions, stronger patents and copyrights. This area of law is particularly troublesome for Taiwan, as it has notably been unwilling to enforce adequate protection. Taiwan's accession to GATT membership would increase its credibility in the world market. Countries and industries would be much more willing to invest in Taiwan, and export technology to the, if GATT membership were attained.

Due to the limited natural resources available on Taiwan, it has historically been dependent on international trade and, as such, has a great deal to gain from entry to the GATT. "As a trade and service-based economy with a growing high-tech sector, Taiwan's economy – like that of the United States – depends on precisely those areas not now adequately covered by current GATT rules: services, investment and intellectual property." Taiwan relies heavily on exports, and will continue to do so. If Taiwan is admitted to the GATT, it could take advantage of the "global market openings," and "greatly expand and diversify its export opportunities."

GOVERNMENT ATTEMPTS TO INCREASE INTERNATIONAL TRADE

Infrastructure Restructuring: The Six Year Plan

In 1991, the R.O.C. government announced an estimated U.S.$300 billion six year national development plan. This public construction plan is the most ambitious in all of Asia. According to officials, "this investment in public construction is a very positive indication of Taiwan's future..."
economic potential." This strategy, however, initially lacked the necessary design to make it immediately successful.

Now, in 1994, the R.O.C. government has a much better idea of what Taiwan's Six Year National Development Plan should entail, and what it hopes to achieve. Many of the projects will necessarily involve foreign companies engaged in various types of technology and training. In a recent study conducted by Taiwan-based consultants, the following industries have been identified as priority projects: transportation (U.S.$122 billion), telecommunications (U.S.$16 billion), power generation (U.S.$39 billion) and environmental protection (U.S.$15 billion). With these concentrations, and with a total estimated value of U.S.$192 billion, the time is ripe for foreign investment. This will increase the need for technology transfer and foreign expertise. Additionally, bilateral and multilateral agreements will be instituted to ensure adequate protection of the technology and expertise.

Although we are examining the smallest of the four main sectors of expenditure of the Six-Year Plan, there is tremendous opportunity for U.S. firms in many of the other areas involved in this quality of life improvement design. Technology transfer spans the entirety of business and no area should be ignored. Some technology is harder than others to patent, depending on the industry and the country in which the protection is sought, and this should be taken into account when deciding on which markets to enter. The government has allotted almost U.S.$40 billion for

112. Taiwan Leads in Spending for Public Works, TRADE OPPORTUNITIES IN TAIWAN, September 28, 1992, at 12, 12.

113. For example, the construction of one of the arms of the metro rail system has been at a standstill due to the fact that the contractors have not yet figured out how they are going to get around the domestic airport. The track is built above ground, the trees are planted, but the track ends just before the airport—a very strange sight! Another example is the waste incinerator located within Taipei City: the stack for emissions is noticeably short. This is due to the fact that the facility was built without sufficiently taking into account the necessary airspace for the domestic airport (which also serves as a military installation).

114. THE U.S.A.-R.O.C. ECONOMIC COUNCIL, Taiwan's Six Year Development Plan, Prepared for The U.S.A.-R.O.C. Economic Council, Prepared by William Reinfeld & Associates, Ltd., Productivity Asia, Ltd., Arthur D. Little Asia Pacific Inc., in cooperation with the American Institute in Taiwan, Funded by the U.S. Trade and Development Program. This publication was chosen for data due to the involvement of many different interests, theoretically adding to the validity of the information and figures presented.


116. For example, pharmaceuticals in Taiwan.
environmental initiatives, and, of that, U.S.$25 billion will be for private companies installing pollution control equipment and U.S.$15 billion will be for public sector projects.

These projects, while large in number, also have the necessary policy directives, definite funding means and substantial access for foreign companies. This makes the ventures very appealing to western investment, sales, joint ventures and partnerships – provided that the technology is properly protected. "Designed to enhance the quality of life of our citizens, improve the overall infrastructure, and put the development of Taiwan into a regional financial, transshipment, and commercial center, the plan will require vast amounts of foreign products, experience and service-sector expertise."

Cultural diversity is as important to the government as the business aspects of economic growth. This has been identified by the Six Year Plan. The Plan is so all-encompassing that it includes an additional allocation of NT$23,927,164,000.00 to fund the Cultural Development Projects. The government recognizes that with the steadfast industrial development of the last several decades, the R.O.C. needs to adjust and adapt socially and culturally in order to facilitate its desire to advance to a greater democracy. The R.O.C. government is planning a six-year program, shadowing the Six-Year National Development Plan, to develop an integrated cultural and recreational environment for now and the future. The government does not want to sacrifice the country's "high-quality cultural life" to achieve industrial progress.

Although many contracts have already been awarded, they cannot be successfully implemented without adequate technology and education. This is where American industries stand to offer, and benefit, the most. The

117. The primary goals as taken directly from Taiwan's Six Year Development Plan, supra note 114, at Forward include:
• Providing the necessary social infrastructure to minimize the effect of municipal and industrial waste generation around the island;
• Utilizing foreign technologies with good track records in effectiveness and cost control;
• Reducing public health risk created by major industrial parks and national industries;
• Strengthening public trust in the Taiwan's authorities' ability to control and regulate waste produced by industry and the public;
• Gather baseline data on a continuous basis and set effective regulatory policies for the future.

118. Tingtsu, supra note 59, at 3.


120. Id.
national government of Taiwan is interested in promoting local business as much as possible, and has a history of requiring international corporations to use local industry and businesses whenever possible. Many of the national projects in the Plan require an R.O.C. partner for any foreign firm wishing to bid on various projects. However, this is not problematic as Taiwan needs western technologies and western firms want Taiwan's business.

Taiwan's legal system is based on a contract and code system. However, on a practical level, transacting business in Taiwan is primarily grounded in interpersonal relationships more than in the exact letter of the law. Thus, in order to effectively transact business in Taiwan, it is necessary for a company to establish quality representation. A company must invest in extensive networking and in opening multiple lines of communication. It must become familiar with local procedures and customs, and demonstrate how the company can benefit Taiwan. The projects in the Plan include activities on the national, provincial and local levels.

Protection of Intellectual Property Rights in Taiwan

The 1980s witnessed an unprecedented increase in the importance and prominence of intellectual property world-wide. This is especially true for the United States, considering that its intellectual property industries provide its "greatest cutting edge in world trade." Intellectual property right protection becomes increasingly important when one realizes the relative ease with which intellectual property is reproduced. Inadequate intellectual property right protections are detrimental to the owners of the property. They stand to lose the profits and other rewards associated with the expenditures that have already been made in the research and development of

121. For example, a colleague of mine was involved in a rather simple landlord/tenant dispute, in which the price of an apartment was in controversy. Although the contract stated that if the tenant broke the agreement, one month's rent would be required, the landlord demanded four month’s rent (the remainder of the life of the contract) because he in essence had "lost face;" the tenant's unwillingness to pay the higher fee, was in fact, saying that the apartment was not worth the landlord's asking price and effectually, and insurmountably hurt the landlord's reputation.

122. Taiwan's Six Year National Development Plan, supra 114, note 134, at I-5, I-6. This publication offers a more in-depth analysis of these general ideas and also includes techniques for different types of businesses. For example, a firm offering to establish a longer relationship regarding the transfer of technology with local contractors and that demonstrates that the bulk of the burden of financing the project would not fall on the public's shoulders will be better received. The private firms should try to develop an approach that would spread the cost and responsibility for the project.

that particular product. For 1986 alone, the U.S. International Trade Council estimated the world-wide monetary losses from insufficient intellectual property right protection for American industries to be between U.S.$43 and U.S.$61 billion.\textsuperscript{124}

To the casual observer, these ideas and figures might seem a bit exaggerated. However, a closer look at a specific set of violations will quickly make one realize how in fact, as U.S. Senator Arlen Specter (R-Pa.) stated, these unfair trade practices have had the "direct consequence of destroying American jobs."\textsuperscript{125} In Taiwan, copyrights and trademarks from all over the world are subjected to piracy and counterfeiting. These illegally produced items are then sold in Taiwan or exported to other countries. The International Trade Council estimated the loss in Taiwan to U.S. businesses to be upwards of $370 million for the 1990 fiscal year.\textsuperscript{126}

Due to its international status regarding state recognition, Taiwan is not a member of many international conventions. Thus, it has no signed mandate regarding intellectual property right protections. The R.O.C. does attempt to maintain international standards, and Taiwan does have bilateral and multilateral agreements with various nations – many of which directly relate to IPR protection. The Treaty of Friendship, Commerce and Navigation (FCN Treaty), for example, is a bilateral agreement with the United States.\textsuperscript{127} This treaty gives U.S. parties protection, subject to R.O.C. law, so long as the U.S. business has followed the proper legal procedure.\textsuperscript{128} Unrecognized foreign businesses have a tough time protecting their intellectual properties.\textsuperscript{129} Foreign businesses are banned from incorporating in Taiwan if they are not incorporated and actually doing business in their home country. Further, if their home country does not allow R.O.C.

\begin{footnotesize}
\begin{itemize}
\item[\textsuperscript{124}] Id.
\item[\textsuperscript{127}] Treaty of Friendship, Commerce and Navigation, 63 Stat. 1299, T.I.A.S. No. 1871.
\item[\textsuperscript{128}] FORMOSA TRANsnATIONAL, LANE, POWELL, SPEARS, LUBERSKY, Doing Business in Taiwan, Taipei, Taiwan, R.O.C. (1992) at 21.
\end{itemize}
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companies, then Taiwan will reciprocate by not allowing incorporation in Taiwan.\textsuperscript{130}  
Taiwan has been under heavy pressure from the international community for its failure to adequately protect IPRs, and its unwillingness to enforce its own minimal regulation. However, since 1986, foreign holders of IPRs who do not have a subsidiary or branch in Taiwan may institute civil action against illegal manufacturers and the end-users of unauthorized intellectual property in Taiwan.\textsuperscript{131} Foreign firms still need to exercise extreme care when conducting business in the Taiwan market as the IPRs are far from adequate.

The Taiwan government has drafted legislation to address IPRs, but enactment and enforcement are still lacking. Thus, copyright and trademark infringements are still common.\textsuperscript{132} The more costly and frequent infringements, however, occur in the area of trade secrets and unfair competition.\textsuperscript{133}

In 1992, former U.S. Trade Representative Ambassador Carla Hills presented a bilateral Trade and Investment Framework Agreement to the U.S.A.-R.O.C. Economic Council.\textsuperscript{134} In this Agreement, an AIT-CCNAA Trade and Investment Council of senior economic authorities would be created to promote the liberalization of commerce.\textsuperscript{135} Among other provisions, the Framework Agreement included a potent group of trade principles which address IPRs, a mechanism for regular consultation and an agenda for the first meeting.\textsuperscript{136}

\textsuperscript{130} See MA, supra note 63, at 17; Chinese Company Law, art. 156 §4, art. 371 § 1; and The Status of Aliens and Recognized Foreign Corporations under the Law of the Republic of China, chapter 6.

\textsuperscript{131} Comment, supra note 129, at 21.

\textsuperscript{132} For example, a toothpaste manufacture in the R.O.C. marketed a product under the name of "Goldgate." The American brand of "Colgate" already had trademark under R.O.C. law. See MA, supra note 63, at 33.


\textsuperscript{134} This Council was established to facilitate commerce between the U.S. and the R.O.C. in the absence of official diplomatic ties due to the R.O.C.'s officially unrecognized status.

\textsuperscript{135} The American Institute in Taiwan (AIT) was established to provide services in lieu of an Embassy and State Department. It is mainly a commercial entity, but does serve as a political arm when necessary (for example, in the event of the arrest of an American citizen). The Central Council for North American Affairs (CCNAA) is the official R.O.C. visa-granting agency. It also acts as a political entity in commercial matters (for example, in international negotiations).

\textsuperscript{136} Remarks by Hills, supra note 42.
"Each time goods or intangibles embodying intellectual property are traded, international intellectual property law influences the value of the transaction. The owner may be affected by the laws of each country involved in the transaction." The essence of international intellectual property law is that there is no binding international intellectual property law, rather each independent nation is responsible for its own laws in this area. Unfair intellectual property laws may have a detrimental effect on each of the countries involved. One country may lose millions of dollars due to piracy and counterfeiting while another country can lose trading priority or be sanctioned with inordinately high tariffs. Such is the case with Taiwan.

Intellectual property rights differ markedly from other forms of property rights in their meaning, nature and processes of protection. The abstract and intangible character of IPRs makes them that much more difficult to perceive. Recent developments in technology are often difficult for the layperson to understand. The judges in Taiwan are no different. They too, are generally unversed in IPRs, and do not understand the real need and importance of them. As a result of such confusion, in 1984, Taiwan Judicial Yuian held the first in a series of seminars on IPRs. The purpose of the seminars was to educate practicing judges who were unfamiliar with IPRs and were having trouble ruling on such cases. As IPRs continue to dominate international trade, it appears that Taiwan will continue to train its judges in this area and to keep them up-to-date and well versed in adequate IPR protection. Trademark cases are relatively easy to decide, thus, this particular arm of IPRs experiences the most litigation.

137. Sherman and Korn, supra note 123, at 5; Taiwan Relations Act, supra note 73.


140. A Yuian is analogous to a United States branch of government. There are five such branches - the Executive Yuian, the Legislative Yuian, the Judicial Yuian, the Examination Yuian and the Control Yuian. See Chui, supra note 70.

141. Wu, supra note 139. Generally, these seminars were held over weekends and stressed the underlying ideas of IPRs, the basis on which legislation was enacted. Judges admittedly did not have a good working knowledge of the primary objectives of IPR law and this was addressed via the seminars. The differentiation among the classes of IPRs and the subsequent infringement effects was examined in detail.

142. Based on the litigation experience of a leading Taipei IPR firm, trademarks are easier to compare than patented formulas or copyrighted computer software.
Generally, judges look to the Copyright, Trademark or Patent Law when hearing IPR cases. However, in the absence of any applicable statute, the judges will refer to the Civil Code as they cannot rule on matters which have no customary or legal principles of law. Thus, judges may not legislate. Parties often seek redress in the criminal courts of Taiwan. This limits the number of parties seeking to proceed on civil grounds. The government is trying to find a way for judges to better protect IPRs. Judges are appointed for life and do receive specialized training, but it is admittedly almost impossible to keep up with the latest technologies in various areas—even with the seminars required by the Judicial Yuan. Thus, it is very difficult for them to examine conflicts, assess and investigate the various issues, evaluate the evidence presented and render judgments.

Different cultures place various weights on the protection of intellectual property. The Chinese liken IPRs to advice, the free exchange of ideas; thus, it is hard for them to conceptualize how intellectual property can be worth so much. As a result, they see no problem in copying it. Additionally, it is a Chinese custom to copy the works of great masters. A person's skill is measured by the resemblance of the copied work to the original. In ancient China, the senior artist would consider the

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143. Wu, supra note 139, at 2.

144. Id. at 6.

145. In an extreme example, in 16th Century France, a trademark infringer was sentenced to death for producing an inferior product that he marketed as the fine cloth used by the French royalty:

Trademark Counterfeiting Brought Death Penalty

PARIS, FRANCE - A team of student geologists surveying ancient building foundations in a small hamlet outside of Paris yesterday unearthed 16th century court records which established a dramatic precedent of penalty for unfair trade practices.

The court records reported a case brought before the French judiciary in 1592 that resulted in the death of a trademark counterfeiter.

According to the translation of the manuscript penned in old French, Monsieur Pierre Blanque produced low quality gold and silver cloth on which he impressed the words "La Gilt Lame" and the symbol of the famous quality house of Le Premier Francis, manufacturers of expensive fabric used by the Lords and Ladies of the Royal Court.

When apprehended, the records relate, Blanque denied the charges but evidence was uncovered in the back room of his Left Bank atelier that proved to the court that he was the culprit.

He was sentenced to be hanged and the sentence was executed within three days of the final judgement. Taken directly from Hsu, supra note 28, at 5, 6.


147. Hsu, supra note 28, at 5.
replica an honor. Re reproductions have long been considered chan pien, "giving yourself a little advantage." It was considered a shortcut, not breaking the law. Thus, it is difficult to conceptualize the legal reasoning behind IPRs—they have an inherent cultural bias against IPRs.

Just as in any political or bureaucratic system, when Taiwan is interested in an issue, procedures are surprisingly expeditious and efficient. If an issue becomes moot, and is no longer of importance to the government, the litigation process becomes very cumbersome. In this case, litigating can prove to be fruitless and extremely frustrating. For these reasons, foreign investors often consider business transactions in Taiwan to be too big a risk and choose to invest in other Asian markets. Foreign firms in Taiwan are dissatisfied with this system and are currently lobbying the government to make the necessary changes to increase the importance of foreign claims.

In determining civil matters regarding trademark law (Shang Piao Fa) and patent law (Chuan Li Fa), Taiwan courts must adhere to the Code of Civil Procedure and the appropriate provisions governing the application of these laws. Essentially, these regulations mirror those found in any civil code nation. The application of the U.S./R.O.C. Friendship, Commerce and Navigation Treaty simplifies litigation as it designates no significant difference between parties from Taiwan and those from the U.S. The R.O.C. Patent Law offers the same protections to businesses of all nationalities. However, Taiwan is cognizant of the importance of trade relations with the United States and, in practice, may unconsciously give preferential treatment to American industries.

Each IPR business claims that its industry suffers the most from the infringements on IPRs. It is estimated that U.S. copyright industries lose between U.S.$12 and U.S.$15 billion annually. Overall, American industries which depend on IPRs lost between U.S.$43 and U.S.$61 billion for the year 1986.

The new R.O.C. Patent Law offers respectable product protection. Yet, small R.O.C. businesses are often acting legally under domestic law when


149. *Id.*

150. Wu, *supra* note 139

151. Interview with Winkler, *supra* note 133.

they 'pirate' different products. However, American firms do not see it this way. U.S. companies still consider it pirating even though the R.O.C. business is in conformity with Taiwan's patent law. The American government believes that if production requirements in Taiwan industries are up to U.S. standards, then its laws should mirror this. However, U.S. companies are to blame for much of this confusion. They often venture into foreign countries without adequate research into the market, customs or laws. For example, if a multi-billion dollar American industry is going to export technology to another nation, that American business should be sensitive to the other country's laws, customs and business practices, or be prepared to pay a big price tag.

This is especially true, and most controversial, in the areas of trade secrets and unfair competition. R.O.C. laws, for example, are not nearly as complex as American legislation. As a result, what could be perceived as unfair competition or infringement on trade secrets in the U.S. is a perfectly acceptable practice in Taiwan. Under R.O.C. legislation, the businesses are acting within the law. For example, a company establishes a business in Taiwan, and an employee of that company leaves and starts another business based on what was learned from the previous employer. This includes special processes, marketing techniques and customer/client lists. Until this area is properly addressed by Taiwan's legislation, foreign companies must regulate it through clauses in employment contracts.

Technology Transfer in Taiwan

As a result of a scarcity of labor, the increase of the NT dollar and the concern over the environment and environmentally sound products and processes, the industries of Taiwan began to lose their competitive edge. The government feared that this, coupled with the lack of research and development industries, would hinder the industrial development of this "economic miracle." The government thus began an active campaign to import technology, realizing that it is much more efficient to transfer technology than to try to develop it from scratch. To show the importance of technology transfer and to facilitate such, Taiwan, in 1989, instituted the Technology Transfer Service Center of the Industrial Development and Investment Center under the Ministry of Economic Affairs.


154. This is another example of the need for preparation when operating a business venture abroad.
This department is charged with:

1. Establishing a database regarding technological experts, technology supply and demand of domestic/foreign industries and other technology-related information.
2. Matching the demand and supply of technology transfer.
3. Assisting local industries in the evaluation of prospective partners.
4. Arranging talks and visits for parties concerned.
5. Providing consultation regarding legal, financial and administrative matters related to technology transfer.\(^\text{155}\)

The department's major task is to establish data banks concerning the demand and supply of domestic and foreign technologies, and add the information from domestic and foreign experts. This allows them to provide local industries with an information service and communication channels for technology.\(^\text{156}\)

Taiwan has two regulations regarding foreign investment: the Statute for Investment by Foreign Nationals and the Statute for Investment by Overseas. Both cite technology transfer as a form of investment. The Investment Commission of the Ministry of Economic Affairs is the granting body for technology transfer. The benefit of technology to Taiwan society is the main consideration when applications are reviewed. A patent will be granted if a technology falls within the following classifications:

1. New product manufacture or production.
2. Improved production method, quality or lowers costs.
3. Improved administration, management, design or operation.\(^\text{157}\)

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156. Id.

157. If a trademark or repatriation of fees is included separate applications must be filed with the National Bureau of Standards or the Central Bank of China respectively. Lane, supra note 128, at 25.
The Statute for Technical Cooperation governs technology when it is not considered a capital contribution, terming it a licensing agreement. It details the terms of royalty repatriation. The Ministry of Economic Affairs' Investment Commission is the ultimate approving board for licensing and will do so only under certain conditions. Those conditions include:

1. Benefits to the R.O.C. society via the production or manufacture of new products.
2. The increase of production volume, decrease in production costs or advancement of the quality.
3. Refinement of the administrative skill or management, design or process, and other improvements.

In Taiwan, there are several methods by which technology can be transferred. The most frequent is direct capitalization, either through investment or licensing. To be considered a capital investment, the technology must benefit R.O.C. society and be involved in new manufacturing. It must be used to improve products or decrease production costs.

R.O.C. regulations restrict percentage rights for contributors to 20% for patented material and 15% for unpatented information. Additionally, unpatented technology requires an added contribution of tangible capital from the investor equal to that of the domestic firm. As a protective measure, when a technology has achieved capital stock status, its sole use is limited to the registered business. Capital stock received for technical know-how may not be transferred until two years after the date of the investment plan completion; patented material cannot be transferred during the patent life.

Between January and June, 1992, the Taiwan Council for Economic Planning and Development reported that technology-based industries accounted for 30.2% of Taiwan's total industrial yield. This is the first time that this sector of the economy has made up more than 30%. To promote growth in this area, the Council has accepted "technology-restructuring

158. Contribution may be in the form of the contribution of technology, usually in conjunction with some claim to the profits or contributions associated with the transfer of that technology.

159. Lane, supra note 128, at 25.

160. Id.
encouragement measures" for the 1993 fiscal year. These measures include preferential tax treatment for businesses involved in pollution control and/or automation. Taiwan's Industrial Development Bureau (IDB) has initiated a five-year automation project to decrease national reliance on "labor-intensive production." Additionally, the campaign hopes to aid local industry in combining their areas of expertise and including contemporary technological manufacturing processes. IDB has slated U.S.$80 million for the five-year project, which the Bureau expects will produce profits of up to U.S.$3.5 billion.

Technology transfer as a capital investment must have prior governmental approval. The R.O.C. government, while desiring the transfer of technology, also places serious restrictions on the use of the transfer as a capital investment.

The licensing of technology requires that an application for a Technical Cooperation Agreement (TCA) be filed with the Investment Commission (IC), by both the foreign business and its counterpart (a copy of the licensing agreement must be included in the application). The IC has great discretion when considering these applications, and may require revisions for approval. Any modifications made outside the boundaries of the IC approval may not be enforceable. Likewise, any foreign entity that applies for a license may retain the right to cancel an agreement pending IC approval. TCAs may not have any market territorial restriction, nor may they have tax provisions whereby the R.O.C. counterpart is required to pay income tax on the royalties.

If a TCA is approved, the approval letter will specify the terms of royalty payments. The royalties usually range between three and five percent of the net sales (as opposed to gross sales), and if no sales are made, then there may be no minimum payment. TCAs must be implemented within six


162. Automation Project in the Pipeline, TRADE OPPORTUNITIES IN TAIWAN, CHINA EXTERNAL TRADE DEVELOPMENT COUNCIL, Vol. 20, No. 4, Taipei, Taiwan, R.O.C., (October 21, 1992) at 5. This program differs from previous initiatives in that it will focus on new products. The Council estimates that under this program the annual production value of each employee will increase from U.S.$76,000 to U.S.$93,000.


165. Lane, supra note 128, at 25.
months of IC approval. Upon expiration of a TCA, which usually runs between 5-7 years, all royalties cease. The TCA cannot be renewed without IC approval.

The Trade Opportunity Project (The Project), introduced in 1991 and sponsored by the External Trade Development Council (CETRA), is another testament to Taiwan's desire to open channels of trade and technology transfer. The Project provides an international inquiry service matching supply and demand, particularly among Southeast Asian industries and western technology, focusing on "creating long-term strategic alliances." The Project helps foreign companies:

1. Penetrate the lucrative Taiwan market, where goods and services from around the world enjoy great popularity;
2. Lower production costs through the establishment of OEM, ODM, and joint venture arrangements with R.O.C. firms that boast exceptionally highly-trained and well-educated work forces; and
3. Use Taiwan and its expertise in regional trade and industry to expand into Southeast Asian markets.

Biotechnology and environmental protection industries are places where The Project has been actively involved. The Project is interested in constructing lasting commercial and industrial links between R.O.C. businesses and those in North America and Europe. The main emphasis of most of these trade programs, whether initiated by the U.S. or Taiwan, is on a mutually beneficial relationship, that these projects enrich bilateral, and ultimately multilateral trade balances. These cooperative ventures provide gains for both sides, and strengthen both the country and company position on the world market. "[Foreign firms] will enjoy a dramatic expansion of the market for [their] products, while [the government] stands to gain from

166. Tingtsu, supra note 59.


168. Tingtsu, supra note 59, at 3.

helping the...industries in Taiwan upgrade their product quality and sophistication."  

U.S.-R.O.C. joint ventures often expand into other geographic areas of the world, particularly into Southeast Asia. Taiwan wants to invest in Southeast Asia. One of the main components in successful business in Asia is the formation of partnerships and lasting relationships. The reputation of the business or people involved is paramount to the establishment of meaningful alliances.

**Patents**

Taiwan's Ministry of Economic Affairs manages the distribution of patents through the Patent Office of the National Bureau of Standards. Taiwan's Patent Law, which contains 133 articles, is governed by the Enforcement Rules, which contain 57 articles. Article 2 of Taiwan's Patent Law sets out the standards for patents on new inventions. Taiwan recognizes three types of patents: new invention patents, new utility model patents and new design patents. The requirements for meeting these distinctions are onerous, but important for purposes of patent application, penalty assessments for violators, and the term for which the patent is granted. If a patent category is misidentified, the Patent Office will reject the application, and the applicant will have to begin the arduous patenting


171. For example, ADEPT Technology, a California-based firm, and Scien-Tech Automation, an R.O.C.-based firm, signed an agreement in 1992. The two companies are now devising a strategy to enter the Southeast Asian market.

172. A recent joint-venture proved especially lucrative. It involved Thomas Industry (a ranking U.S. lighting company) and New-Asia Electric Company. It used TOP as a middleman, and provided a bonus to Thomas Industry; a $2 billion contract to provide lighting for certain ventures of the Six-Year National Development Plan.

173. Patentable "new invention" is an invention other than one which, prior to the patent application, has been published or put to public use, except when done so for research or experimental purposes and application is made within six months thereafter; which is similar to an invention already patented; which has been displayed in a government-related exhibition and no patent application is submitted within six months of the exhibition; which has been used, prior to application, for mass production of the invention; or which uses conventional know-how and technical knowledge known prior to the patent application, and is obvious and not improve effectiveness. An invention must also include the dual elements of novelty and utility. Taiwan follows the principle of international novelty, and any prior usage or publication outside of Taiwan, may exclude the invention from qualification. Taken directly from Lane, *supra* note 128, at 21.

process again. In the applicant's favor, the date of the original application will be applied so long as the applicant refiles within 30 days of the Patent Office's decision.

The first party to file an application is eligible for a patent. Patents grant exclusive rights to a new invention for fifteen years, but not for more than eighteen years from the original date of application. Utility model patents grant exclusive rights for ten years from the grant, or twelve from date of application. Design patents last for five years from publication, or six years from original application date. Patent rights and application are assignable, and inheritable. Prior governmental registration and approval is required for assignments to non-R.O.C. citizens.¹⁷⁵

There is a compulsory use requirement for new inventions; they must be put into service within three years of patent date. Original owners may not necessarily use their patents, but unauthorized users may be permitted by the Patent Office to put the invention into service. Although they will have to pay a royalty to the original inventor, it will not be as much as if the original patent holder was actively involved in the agreement. Thus, it is important to be aware of dates for patents in Taiwan. Design patents and utility models are not subject to this compulsory use provision.¹⁷⁶ Criminal penalties for infringement include 1-3 years imprisonment and fines of between NT$15,000 - NT$300,000 (U.S.$600 - U.S.$12,000).¹⁷⁷ Civil penalties include injunctive relief and monetary compensation.

For biotechnology and pollution control issues, consider that in Taiwan, living organisms are not patentable.¹⁷⁸ For example, if a biological series is used en route to manufacturing an end product, that biological function is not patentable. The industries and research facilities of Taiwan want strong patent protection for living things. Some researchers think that the patent procedure should be slowed down.¹⁷⁹ In Japan, for instance, a company must wait several years before a patent is granted. In Taiwan,


¹⁷⁶ Lane, supra note 128, at 22.

¹⁷⁷ The statute defines infringement to be counterfeiting, imitating, or the intentional sale, import or exhibition of a patented invention.

¹⁷⁸ There was a rumor in Taiwan of including living organisms in the 1993 amendment to the Patent Law. However, the government has talked about this in the past and no changes have been made.

¹⁷⁹ Interview with Dr. Tai-Sen Soong, Director, Development Center for Biotechnology in Taipei, Taiwan, R.O.C. (Nov. 29, 1992).
researchers think that the patent process is too hasty. Businesses get too much outside information too quickly which inhibits the investigative possibilities for R.O.C. researchers regarding that product. If the patent process were slowed down (under current law, it is a one year process but, in practice, it is between 6-8 months), then investigators would have a chance to modify the process/product and perhaps develop a better product, or one more suitable for the social/local need in Taiwan. From a research perspective, once a product is patented and marketed, it is too late to learn from the rigors of the development process – they are prohibited from producing that product.

Fair Trade Law

Local fair trade laws provide an alternative avenue of relief for IPR owners who cannot otherwise be compensated by patent, copyright or trademark law provisions. "The purpose behind such law is to provide the public with certain protections in the event that the misappropriation for one reason or another is not prohibited by laws specifically designed to protect intellectual property rights."181

The Problem with Pharmaceuticals

Early on, pharmaceuticals were not patentable because the government was trying to avoid monopolies. The R.O.C. Patent Law was drafted during World War II, and the government determined that pharmaceuticals and drugs would not be patentable as they were important to society. They needed effective drugs.182 Originally, the R.O.C. was deficient in research and development, so they imported the necessary medicines, copied them, repackaged and sold them as their own.

Developing countries have difficulty protecting intellectual property. Primarily, the investigative process to adjudicate claims is expensive and calls for experts who are either unavailable or too costly for these governments. Additionally, certain infringements on intellectual property are necessary for these nations to develop – these nations are not willing to afford protections to foreign businesses at the cost of domestic economics.

Pharmaceuticals, which have taken years to develop – and millions of dollars to research – are easily reproduced in industrializing countries.183

180. Id.

181. Hsu, supra note 28, at 11.

182. It is asserted that inadequate IPRs in the pharmaceutical area can lead to substandard drugs which can hurt a society. See Ann Sturtz Viksnins, Amgen, Inc. v. United States International Trade Commission: Designer Genes Don't Fit, 76 MINN. L. REV. 161 (1991).

183. Leaffer, infra note 219, at n5.
Biotechnology is currently one of Taiwan's top ten industries. The expect to produce new medicines and become highly competitive over the next ten years.\footnote{184} It is also important to understand the cultural considerations regarding pharmaceuticals. The West tends to have widespread use of its medicines whereas the R.O.C. observes a more limited use. In the West, with the extensive system of intellectual property rights that promotes the exchange of ideas, people are very willing to share the fruits of research. The R.O.C. medical industry does not have this willingness to disclose due to the "negative attitudes of the old masters [who] would rather see the art and science they mastered during their lifetime die with them than be handed on to unworthy successors."\footnote{185}

In 1986, Taiwan's Patent Law was revised to include pharmaceuticals and agro-chemicals. Prior to the 1986 Patent Law revision, pharmaceuticals and agro-chemical products were not subject to patent protection.\footnote{186} The United States is interested in finding a way to provide "pipeline," or retroactive, protection for American firms dealing in such products.\footnote{187} Currently, there is no protection for pre-1986 patents. The R.O.C. government tried to find legislative authority for protection under the Taiwan Food and Drug Control Act; they determined that there was no protection there for pharmaceuticals without a patent.\footnote{188} New uses for pre-1986 pharmaceuticals are patentable, provided the discovery was made after December, 1986. R.O.C. businesses objected vehemently to this potential provision and predicted that such protection would force 600 locally manufactured pharmaceuticals to go out of production, increasing the United States share in this market by 30%.\footnote{189} A retroactive protection provision for American pharmaceuticals would be viewed as a strategically poor move on the part of the R.O.C.

\footnote{184}{This parallels Taiwan's access to computer technology. In 1983, they had virtually no industry, today it is their number one industry. Taiwan is hoping for the same in the area of biotechnology.}

\footnote{185}{Hsu, supra note 28, at 6.}


\footnote{187}{The United States has reached similar agreements with South Korea, Mexico and the P.R.C.}


government. It would be perceived as bowing to American pressure, which would alienate citizens. The government does not want it to appear that the U.S. is dictating domestic policy and law. Additionally, it is contrary to the principles of law. However, the R.O.C. realized that this point of contention could be potentially disastrous for the industry and have developed a way around this lack of "pipeline" protection.

The Taiwan Department of Health (DOH) has developed a strategy to avoid direct conflict between American and firms. With the advent of new drug registration procedures, the DOH has cleverly devised a function which gives benefits to American companies in the future for pharmaceutical leniency now. The idea is that if the U.S. firms are willing to compromise today, they will be rewarded in the future with easier registration procedures and less restrictions in filing, marketing and testing.

It appears that both sides agree that retroactive protection will not work. As a result, the government will continue to generate other 'benefits' to make up for the lack of pipeline protection.

SUPER 301 PROVISION

As a result of continuing intellectual property rights violations, the United States, on April 29, 1992, placed Taiwan on the "priority foreign county" list under the "Super 301" provision of the Omnibus Trade and Competitiveness Act of 1988. This is the first time that Taiwan has been threatened with this provision. The Act "calls for the [unilateral] identification of trading partners which deny adequate and effective protection for U.S. intellectual property, such as patents, trademarks, and copyrights, or that deny market access for persons relying on intellectual property protection." This provision has been considered the "most feared weapon in the U.S. trade expansion armory."

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190. 1992 was a brutal election year in Taiwan. Thus, it would have been politically disastrous for any politician or government official to support such a provision. With the election over, it is hoped that a resolution can be reached.


Upon the listing of a country as a "priority foreign country," the USTR has 30 days to determine whether an investigation is necessary. On May 29, 1992, the USTR launched a 301 investigation, under the 1988 Trade Act, to examine the IPR protection in Taiwan.\footnote{195} As a result of this investigation, the USTR, under the 301 statute, determined that the IPR protections in Taiwan were unsatisfactory and that IPR practices were unreasonable. However, with signing of the 'Understanding' on June 5, 1992,\footnote{196} and the anticipation of its implementation, the USTR has lifted the "priority foreign country" status of Taiwan, hence halting the 301 investigation. Since Super 301 is a continuing process,\footnote{197} the United States is under an obligation to keep a close eye on the effectuation of the 'Understanding,' in compliance with section 306 of the 1974 Trade Act.\footnote{198} "The scope and level of the actions taken" prior to the first quarterly review by the USTR were "encouraging."

The 1988 Act amended the 1974 Trade Act.\footnote{199} Section 301 of the 1974 Trade Act authorizes trade sanctions against offending countries. The 1988 Act introduced the Super 301 and Special 301 provisions. These provisions require the documentation, via an annual list, of all countries which fail to adequately protect American IPRs.\footnote{200} Super 301 expired in 1990, but President Clinton revived this Act in February of 1994.\footnote{201} Specifically, the Act addressed the Super 301 retaliation provision.\footnote{202} It was regarded as the "main U.S. trade law designed to pry open foreign markets to U.S. investment and exports of goods and services, and to achieve adequate and effective

\footnote{195. AIT, infra note 207, at 2.}
\footnote{196. AMERICAN INSTITUTE IN TAIWAN, TRADE TAIWAN, Fact Sheet on AIT-CCNAA Understanding Regarding IPR Protection in Taiwan, [Sept.-Oct.] Vol. 13, No. 5, 1992, at 2.}
\footnote{197. Id.}
\footnote{198. Id.}
\footnote{200. IE Report Urges Administration Not to Use Super 301 Trade Weapon, INTL TRADE REP., Vol. 11 No. 37, Sept 21, 1994, at 452.}
\footnote{201. Id., 11 I.T.R. 367, (Mar. 9, 1994).}
\footnote{202. Id. at tit. III, @ 301.}
protection abroad for intellectual property rights." The 1974 Act authorized the President to take retaliatory action "unjustifiable, unreasonable or discriminatory" which adversely affected American commerce.

With the advent of the 1988 Act, the USTR was endowed with the powers previously held by the President regarding international trade, and given great discretion when considering Super 301 status and the resulting action. The USTR can review or change a country's status at any time, based on the monitorization of the country's IPR provisions and enforcement. According to American businesses in Taiwan, the 301 provision listing was, and continues to be, taken seriously by the government.

The Super 301 provision demands a widespread, holistic approach to ensure satisfactory and effective protection of IPRs, both domestically and transnationally. This includes, "equitable market access for U.S. goods which rely on intellectual property rights protection." The purpose of this classification is to try to effect substantial improvements in the protection of U.S. intellectual property through bilateral negotiations. Retaliatory measures have rarely been necessary because bilateral negotiations have proved successful in settling disputes.

Under the "Super 301," offending countries have six months to convince the USTR that they have taken the necessary measures to adequately protect American intellectual property, or face retaliation. "Improved protection for intellectual property was one of the Bush Administration's top


205. It was believed that this transfer of authority would less the likelihood of non-trade benefits being exchanged for political, foreign policy, defense or other considerations. Nara, infra note 220, at n106.


207. AMERICAN INSTITUTE IN TAIWAN, TRADE TAIWAN, Trade Note: Intellectual Property and "Special 301," Vol. 13, No. 4 July/August, 1992 at 2.


210. If the country is making progress, the U.S.T.R. can increase this to nine months.

trade priorities. [The U.S. is] firmly committed to achieving satisfactory results with these trading partners and we are prepared to take every step that will move us towards that goal." The Clinton Administration echoes this same sentiment.

The Act compels the USTR to:

Identify "priority" trading partners with the most "egregious and onerous" practices and the "greatest adverse impact on U.S. products, unless they are involved in good faith negotiations or "making significant progress in bilateral or multilateral negotiations."

Due to the complex nature of international trade, two extra-statutory lists were established to monitor countries whose IPR dealings necessitated Super attention. The "watch list" contained trading partners who had drafted IPR regulations and were in the process of implementing the new legislation. The "priority watch list" included countries whose IPR practices or restriction to market access were of greater consideration. In order to avoid the "priority" classification, trading partners on either list must be involved in good faith, bilateral or multilateral negotiations.

Opponents of the use of Super 301 state that it could undermine multilateral systems — such as GATT — terming the use as "aggressive unilateralism." Additionally, many of the economies which were dependent on the U.S. during the 80s no longer rely as heavily on U.S. markets, and may not be as willing to bow to the "U.S. crowbar" (Super 301). However, studies on the use of the Super 301 provision have shown that it "was responsible for achieving at least a partial opening of foreign markets about 50 percent of the time it was used between 1975 and 1992."

212. AIT, supra note 196, at 3.

213. Interview with Robert Cox, supra note 146.

214. AIT, supra note 196, at 2.

215. Id. at 2.

216. IIIE Report, supra note 195.


218. Id.
Taiwan has historically been very lax in its protection of IPRs. Recently, it has made "significant improvements," but it has done little in regard to enacting and enforcing the newest IPR legislation. This "chronic enforcement" problem seems to be a response to insufficient penalties for IPR infringers and deficient enforcement. Harsher penalties and stricter enforcement would aid in deterrence. "The key is enforcement. Without adequate enforcement, the legislation is just a piece of paper."

"Taiwan is a center for copyright piracy and trademark counterfeiting of U.S. products. Improved intellectual property laws have been under consideration for some time in Taiwan, but prompt enactment is key to improved protection." In early bilateral negotiations, a Memorandum of Understanding was reached whereby R.O.C. officials agreed to put forth a stronger effort in the enforcement of IPRs and to enact stiffer legislation regarding IPRs. All of this was an effort to bring them up to international standards. This Understanding was "an important step, but only one step in the continuing process of improving intellectual property protection in Taiwan." The Understanding outlines monthly reporting and very specific milestones for the R.O.C. to meet. If Taiwan breaches this Understanding, the U.S. can immediately impose retaliatory tariff action.

Legislation, no matter how good, is useless without proper enforcement. The USTR is intently observing the progress of the Understanding and the resulting legislation and enforcement efforts, to ensure that IPRs are adequately protected in Taiwan. Proper execution of this


220. Id., supra note 196, at 3.

221. Taiwan Takes on its 'Pirates,' supra note 148.

222. Id.

223. AMERICAN INSTITUTE IN TAIWAN, TRADE TAIWAN, Agreement to Protect Intellectual Property in Taiwan, [Sept.-Oct.] Vol. 13, No. 5, 1992, at 2. This 'Understanding,' "includes commitments to take administrative actions to improve copyright protection for sound recordings, video and computer software. It also includes commitments to bring up to internationally recognized standards Taiwan's laws protecting patents, trademarks, industrial design, semiconductors and trade secrets. Once implemented, these measures should bring Taiwan's IPR regime into conformity with the texts now being negotiated in the GATT Uruguay Round." (p. 2). Additionally, Taiwan has agreed to "submit amendments to Taiwan's patent and trademark laws, and draft laws covering semiconductors, industrial designs and trade secrets, consistent with the draft agreement on Trade-Related Aspects of Intellectual Property." (AIT-Fact Sheet, p.2). Further outlined on p.3, AIT, supra note 196.

224. Id. at 2.
agreement will strengthen Taiwan’s bid for membership in GATT.\textsuperscript{225} As a result of the Understanding, the 301 investigation against Taiwan was terminated.\textsuperscript{226} However, recent trade talks have been disappointing for the U.S. side.

The American Institute in Taiwan was dissatisfied with Taiwan’s slow advancement of the 5 June 1992 Memorandum of Agreement. It is estimated that U.S.$240 million was lost to pirating between the signing of the Agreement (June 5, 1992) and December 1992.\textsuperscript{227} The R.O.C. seems unwilling to bow to U.S. pressure, contending that U.S. government and businesses must realize that different nations have different establishments and cultures, thus widely divergent interests and considerations. "America should not force other countries to conduct themselves according to American criterion and methods."\textsuperscript{228} In March of 1993, the talks began again, and if the U.S. is still dissatisfied with R.O.C. efforts, Taiwan may by subject to the 301 classification again.

The Yüan, or R.O.C. Parliament, was outraged by this "Super 301" classification with which the United States has labeled Taiwan citing that the U.S.T.R. has failed to recognize Taiwan’s efforts to try to curb piracy and counterfeiting of US intellectual property.\textsuperscript{229} Sheu Ke-sheng, director general of the Board of Foreign Trade was quoted as saying, "The U.S. was not fair and ignored our past efforts. The U.S. should not threaten us...this is unhealthy for trade relations between our countries."\textsuperscript{230}

The United States is concerned about Taiwan’s inadequate enforcement of the IPR laws already enacted. It also questions Taiwan’s failure to develop legislation to improve intellectual property right protection. The fundamental part for the U.S. is prompt action by Taiwan to prove its

\textsuperscript{225} GATT member nations have debated the appropriateness of the 301 classification, stating that it "violates accepted public international law principles" and the multilateral negotiation system imposed by GATT’s "dispute settlement mechanism[s]," concluding that @ 301 should be repealed. See Fusae Nara, \textit{A Shift Toward Protectionism Under § 301 of the 1974 Trade Act: Problems of Unilateral Trade Retaliation Under International Law}, 19 \textit{HOFSTRA L. REV.} 229 (1990).

\textsuperscript{226} \textit{AMERICAN INSTITUTE IN TAIWAN, TRADE TAIWAN, Trade Note: AIT and CCNAA Conclude IPR Review, Vol. 13, No.6 (1992) at 2.}


\textsuperscript{228} \textit{Taiwan, U.S. Split Over Success of Copyright Talks}, \textit{THE CHINA NEWS}, (Dec. 10, 1992) at 3.


\textsuperscript{230} Id.
willingness to work with the U.S. in bringing about a resolution to this problem.\textsuperscript{231} "It does not seem appropriate to give duty free entry to products that are benefiting from the theft of our patents."\textsuperscript{232} "Taiwan...should be aware that it is straining its trading relationship with the U.S. by tolerating intellectual property piracy."\textsuperscript{233}

The Yüan is confident that sanctions can be avoided by continuing negotiations with the United States and increasing Taiwan's investigation and punishment for IPR offenders.\textsuperscript{234} The Taiwan government is installing an "export inspection system" as an attempt to catch intellectual property right infringers. Offenders of Taiwan's intellectual property laws regarding American industries will have their licenses revoked and the administering officers of these R.O.C. firms may be subject to incarceration. Additionally, the Taiwan Cabinet is encouraging the Yüan to expedite the passage of new intellectual property rights legislation. This will strengthen copyright protection and encourage judges to deliver stiffer penalties to violators.

Most valid R.O.C. firms are in agreement with the Yüan, and they support this crackdown on violators. These infringements pose a great threat to the long-term economic acceleration plans of Taiwan. These same firms have their own intellectual property that they have an interest in protecting. "Taiwan also is trying to import new technologies in a bid to become a high-tech center in Asia. Industry analysts said that unless the government gets a handle on the intellectual property issue, computer and telecommunications companies will not invest in Taiwan."\textsuperscript{235} "Better IPR protection will encourage local entrepreneurs to invest more in research and development, thus accelerating [Taiwan's] industrial upgrading...even without U.S. pressures, we must consistently clamp down on counterfeiting."\textsuperscript{236}

In partial response to the Super 301 classification, Taiwan hosted a computer software show during May 1992. "Softex Taipei '92," was described

\textsuperscript{231} Pass the Copyright Law, CENTRAL NEWS AGENCY, Taipei, Taiwan, R.O.C., May 4, 1992, available in LEXIS, News Library, Arcnws File.

\textsuperscript{232} Id.

\textsuperscript{233} Id. at 35.

\textsuperscript{234} Id.

\textsuperscript{235} Id. at 3.

as "a software olympics in Taipei."\textsuperscript{237} The former Director of the American Institute in Taiwan, Thomas Brooks, commended Taiwan for its continuing efforts to protect American intellectual property rights.\textsuperscript{238} Taiwan was hoping that this exposition would help to prove to the United States that the Yüan is serious about eradicating the counterfeiting and piracy that has, until now, been rampant in Taiwan. "We hope such face-to-face talks will help American software makers better understand our determination and efforts to eliminate commercial piracy."\textsuperscript{239}

Taiwan took the Super 301 classification seriously and has been striving to rectify the inadequate enforcement of IPRs.\textsuperscript{240} A major problem is that with so many small businesses involved in "pirating," it is very difficult to catch them all. When a company is fined or closed down due to IPR infringements, the penalties are not very severe and the offender often opens a new business the very next day.\textsuperscript{241}

Taiwan has begun raiding enterprises that illegally copy and show movies on video tapes and laser disks. New legislation has been introduced to indict pirated computer goods. These regulations have been given top priority and judges have been encouraged to hand down stricter sentencing for convicted IPR offenders. Movies are confiscated and the owners of the establishments are charged for using the intellectual property, and sanctions are a possible consequence.\textsuperscript{242} An interagency task force has been developed to help terminate the manufacture of illegal computer wares. The task force will be targeting chronic IPR violators for inspection.\textsuperscript{243}


\textsuperscript{238} Replacing the Embassy as a result of the derecognition previously discussed.

\textsuperscript{239} New Efforts to Prevent Pirated Computer Exports, CENTRAL NEWS AGENCY, Taipei, Taiwan, R.O.C., May 6, 1992, available in LEXIS, News Library, Arcnws File.

\textsuperscript{240} Interview with James A. Boyle, Director, Oregon State Trade Representative's Office in Taipei, Taiwan, (Nov. 15 1992).

\textsuperscript{241} Id.


\textsuperscript{243} Id at 3.
The biotechnology and pollution control industries of Taiwan stand to be affected most by any IPR protection. The R.O.C. acknowledges that "there is definite demand for pollution prevention and control. [The] economy has reached a point where people recognize the importance of upgrading...environmental quality and [they] have to spend money to do that. While [they] have the money, and...the demand, [they] are short on the technology." Taiwan realizes the importance of the American experience in both areas, and wants to profit from it -- but so do the parent companies.

Japan has recognized the global importance and domestic remunerative nature of the biotechnology and pollution control industries, labeling them eco-industrial development. The United States is currently the largest eco-industrial developer, but Japan is doing everything it can to become a major manufacturer and exporter of eco-industrial designs and products. According to the Japanese, "the best plan will win," and as such they have introduced a 100 year plan. At UNCED in Rio, the Japanese pledged U.S.$7 billion to support pollution control in developing countries, a very smart marketing move. As these states become industrialized nations, they will need ecologically sound equipment for production and for the clean-up of...

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244. Biotechnology is known as an integrated science and technology including molecular biology, biochemistry, immunology, cell biology, physiology, microbiology, bioengineering, chemical engineering and so forth. In order to conduct an effective R&D, the team work arrangement is essential to integrate all the needed skills together for the same goal. Taken directly from Soong, supra note 66, at 13.

245. The government has launched many public-private projects in both areas, increasing funding and public support. Interview with Soong, supra note 179.


247. The Japanese are designing a plan called Genesis, whereby a global system of energy is developed, linking all the continents via cables. For example, the energy transmitted from China during its day time would be given back when the sun is over South America. This is a very ambitious program. It would need great cooperation among the nations involved to make it a success. The potential benefits would be felt world-wide.

248. This has been criticized by many as a marketing ploy. It is worth noting that while the United States government portends to support this area, it does not deliver on financing. The Japanese government provides loans at 0% interest for larger purchases. It is often stated that "we want to buy American goods, but too expensive." Phone interview with Peter Illig, Director U.S.-Asia Outreach, U.S.-A.E.P., October 10, 1994.
their environment. The Japanese have struck a cooperative level between the government and the private sector, a team effort to develop a strong eco-industrial enterprise for the entire country. Mitsubishi is developing wind turbines for clean electricity and Sanyo is exploring the use of solar energy for private homes. While this approach seems to be effective, from the American perspective, it must be evaluated for appropriateness in a democracy. This approach has worked in Japan and is appearing to work in Taiwan.

Mainland China is viewed as the biggest potential market for biotechnology and pollution control mechanisms. In the P.R.C., the Japanese have designed a "cleaner" cement factory for them. It uses smoke stack scrubbers that were developed in the United States. The process was improved in Japan and then exported to China, with the Japanese firm reaping all the benefits. Although this is a dramatic example of the good that can come from sharing technology, it is a harsh reminder of the effect of unchecked technology transfer.

The Taipei World Trade Center, in conjunction with CETRA, hosted a medical equipment & pharmaceuticals show from November 12-14, 1992. This particular program is the longest running trade show in Taiwan. This proves Taiwan's commitment to international trade and its desire to import advancing technologies in these fields.

The Executive Yuan is providing an additional U.S.$0.4 billion in loans to manufacturers and businesses involved in environmental protection and also to private medical institutions. This is a continuation of an effort to support businesses interested in increasing pollution control facilities. If government and industry are selective in their respective areas of research, if there is an efficient use of capital in conjunction with 'international strategic alliances,' including the transfer of key technologies and joint ventures (including licensing agreements and cooperative marketing strategies), the biotechnology industry in Taiwan will explode as researchers are forecasting it will.

In response to the government naming industrial biotechnology development as one of the key industries for Taiwan's future, the Development Center for Biotechnology (DCB) was established. Development Center for Biotechnology's mission is "to transform basic research into industrial processes which can be further developed by local industries for commercial purposes." The Development Center for Biotechnology

249. CHINA EXTERNAL TRADE DEVELOPMENT COUNCIL, TRADE OPPORTUNITIES IN TAIWAN, Environmental Protection Loans Offered, Taipei, Taiwan, R.O.C., Vol. 20, No. 4, (Oct. 22, 1992) at 12.

"develop[s] biotechnology of commercial value and transfer[s] it to...local industries for production."  

The Development Center for Biotechnology was established 11 years ago and has been in service for about 9 of those years due to the time necessary to implement the project. There is currently one plant in service, with two more on the way. The Development Center for Biotechnology works by establishing research teams and recognizing important areas for research and development. In 1991 Development Center for Biotechnology highlighted pharmaceuticals, agriculture, specialty chemicals (amino acids, generic drugs, antibiotics) and pollution control.

Difficulties in the biotechnology industry in Taiwan include a lack of proper management, inadequate international marketing techniques and an insufficient number of properly trained and educated engineers to fine tune the processes that are discovered during research. Both the public and private sectors are aware of these inhibitors to biotechnology advancement in Taiwan. They are working together toward a solution so that with proper management there can be quicker returns to investors and increasing the probability of a "solid integral development of technology."

The Development Center for Biotechnology is a government-sponsored entity that operates on a contractual basis in a very competitive field. It is both non-profit and semi-privately owned, thus funding can come from the government or the private sector. This allows the Center the flexibility to foster the growth of the biotechnology industry in Taiwan. Many funding sources and private sector donations accounted for initial building and operation of the Development Center for Biotechnology. The government has identified six areas of biotechnology development which are eligible for research and development support. Hence, these are prime areas for development of the biotechnology industry in Taiwan - pharmaceuticals, agriculture, specialty chemicals, bioagents for pollution control, biosensors, and strain collection and improvement.

Previous Patent Law extended only the end product and not the process leading up to the final chemical/bio compound. The Patent Law has since been amended to include these processes. Some countries, like the PRC and South Korea, have acquiesced and granted retroactive patent protection. However, since Taiwan is relying on U.S. markets less and less, it is unwilling to follow suit. At one time, U.S. markets were 50% of the export business

251. Id. at 13.

252. Id. at 11.

253. Id. at 17.

254. Interview with Tai-sen Soong, supra note 179.
for Taiwan. That heavy reliance has dwindled to 20% of the total share of the export market. As Taiwan's export markets expand, this reliance will continue to decrease and trade negotiations may reflect this trend. Taiwan will be in a position to get firmer in its dealings with the United States.

Taiwan's biotechnology industry is the second best developed in Southeast Asia. However, by Western standards, they are just beginning. In the U.S., there are two types of biotechnology research, namely in the university area, and the commercial or industrial sector. The United States has huge chemical manufacturers that invest enormous amounts of time and capital into research and development. They produce pharmaceuticals and bio-chem-agro products that will aid businesses which are aimed at answering market needs. Academia is geared more toward general research and the areas of interest to the researchers. This discipline oriented approach is good for research, but commercially unsound. In academia, without a specific need to meet, researchers serendipitously discover technology that can be marketed, and profits reflect this.

The Development Center for Biotechnology underwent reorganization several years ago, to make the center more business and production oriented. They have become proactive and reactive to meet customer needs—taking into account the social and market needs of the customer. The Center no longer researches whatever it finds interesting; now they must account for their time and investigate what the businesses need and desire. Originally, this created a lot of controversy at the Center because this approach was foreign to the scientists. Now they are being held specifically accountable, and must explore what is necessary to fulfill the contracts with the hiring businesses. The research has become increasingly market-driven.

This will impact the rate and quality of development. Market-driven research will meet market needs and have the added benefit of 'accidental discovery.' The increase in funding will make the ventures more profitable and the research more socially based, thus improving the quality of life.

Biotechnology is a very expensive business. It takes enormous amounts of time, energy, patience and human capital to make profitable discoveries. It is also a bit abstract in that the key technology under consideration may not be what is necessary to develop the key process. There is a lot of grey area in translation, and the transition from the laboratory to the marketplace can prove to be very costly.

Biotechnology involves long-term investment – both human and capital. It is not advisable to have a quick turnover of professionals as it takes considerable time and experience to achieve quality results. Taiwan is aware of this and in this area out performs many other nations. They have the human capital necessary to make the biotechnology industry the burgeoning

255. For example, DuPont and DOW Chemical.
business of the future. The R.O.C. is not as interested in the quick rush for development as many western nations are.

The government of Taiwan supplements research and development in many industries. It realizes that many small and mid-sized businesses cannot afford to put large sums of resources into the research and development necessary to produce advanced forms of biological and other technologies. So the government provides funding for research and development. Thus, in Taiwan, there is more steady funding available for biotechnology and research and development, whereas in the U.S. funding might be withdrawn from certain projects, leaving incomplete research and frustrated researchers. The attraction for businesses (the big thrust is to get traditional industries working in this realm) in this area is the numerous inducements by the R.O.C. government. These include up to 5 years of eligibility for tax holidays, government grants and loans for research and development, access to government-sponsored market information services and customs duty exclusions for imported goods to be used in the manufacturing of biotechnology products and research and development.

The biotechnology industry in Taiwan is growing at a slow but steady pace which, according to top researchers,256 is what is needed to lay the foundation for an expanding, powerful and leading industry in the future. This also aids in the steady accumulation of experience, which Taiwan desperately needs. They are the first to admit that they make many mistakes, but that they acquire enormous amounts of information from their mistakes. They feel this will aid them in the future, by giving them the experience necessary to surpass other nations in the development of its biotechnology industry.

The infrastructure needed to be a world-class biotechnology exporter and developer in the future is being laid now. As the key manufacturing industries and facilities are currently being built, experts are predicting that the biotechnology industry in Taiwan will explode over the next few years and that the industry will be ready to accept the challenge of becoming a world power in the biotechnology field.

Taiwan combines government and business — they consider themselves to be a team, and as such, they consciously work together. They realize that in the event of unfinished research, not only is the information lost, but so is the initial investment; thus everything is lost. In comparison, in the United States, many industries do well, but many get lost in the process. Many go bankrupt, while others survive. From the R.O.C. perspective, the American system is a market oriented, free enterprise system that has gone too far. People, and society, can lose everything.

256. Interviews with Soong, supra note 179, and Peng, supra note 86.
The environment for biotechnology development is good—it has been named as a global interest—and the government is offering great subsidies for companies involved in research and development and the manufacture of products. In 1990, Taiwan's government made research grants available to private industry involved in research and development, on a competitive basis. The result of this has been the establishment of biotechnology labs and increased private investment in biotechnology development.

Private firms have taken advantage of the government incentives. Since 1986, at least thirteen 'venture capital firms' with a total equity of U.S.$250 million, have been established. These firms will be instrumental in the management, marketing and innovation stages of the development of the biotechnology industry.

The combination of private support and professional commercial research labs is complimenting government policy. Additionally, Taiwan's desire for technology transfer, coupled with the global insistence on clean manufacturing processes and a halt to the environmental destruction, will enhance the development of the biotechnology industry in Taiwan.

Patent law regarding biotechnology is extremely difficult to enforce. (In fact, the Development Center for Biotechnology has had no cases yet.) To illustrate this, consider a patent which is awarded to a U.S. firm for a piece or string of DNA. In Taiwan, there may be a variation or a local string that is very close to the originally patented biological string but slightly different. For example, the two strings are 95% the same and 5% different but they produce an end product which is the same in essence, yet slightly different scientifically. Under Taiwan's law, there can be no legal action. There is no adequate way to stop the production of that particular commodity. In Taiwan, A must equal A exactly, any variation is considered to be a different product.

Biotechnology is very difficult to judge; it is really a question of enforcement. In the United States, for example, there is a much broader sense of interpretation. In Taiwan, if a judge is unable to differentiate between two biological products, the judge will send the items back to the patent office where the respective items will be evaluated. If necessary, the patent office will compare each patent, word by word, which in most cases results in the initial inventor losing the case. If the spirit of the invention is the same, but the end product is "patently" different, there can be no action. Mutations and variations provide large areas of controversy; strings can be slightly different and, thus, a party will lose in court. This adversarially affects the importation of research; a company can start research in Taiwan and another company can "steal" the idea, make certain alterations and legally market it. The R.O.C. company saves the time, energy and financial resources involved in the initial

research while the original company loses the profits realized by the marketing of the modified product.

Pollution is an effect of industrial and commercial processes. It is necessary to incorporate pollution control in the engineering process in order to be most effective. Prevention is the best medicine. Biotechnology in this area is essentially an afterthought. For example, where shock loading occurs, biotechnology treatments can be used to mitigate the damage as a damage control method. Taiwan does not presently employ much biotechnology in pollution control. In order to advance the biotechnology and pollution control industries in Taiwan, there must be international cooperation including technology transfer to expedite research and development, joint ventures and better marketing, especially with friendly nations.

CONCLUSION

Trading blocs, or partnerships, are a viable answer to the problems confronted by technology transfers in biotechnology and environmental fields. In order to facilitate this transfer of information, adequate IPR protection for foreign technologies is necessary. Depending on the countries involved, great benefits can be realized. For example, the Guatemalan President visited Taiwan to encourage R.O.C. investment in the Guatemalan public construction projects (mainly air and seaports). He happened to mention that "domestic industries relocating in Guatemala would have full access to the benefits of the North American Free Trade Agreement."260

As the United States moves from a defense economy to a domestic economy, investing in pollution control and biotechnology industries will create more jobs and keep America a viable force in the international marketplace. Many proponents of the discussions in Rio believe that adherence to the treaties will create American jobs rather than cost Americans jobs, as the opponents contend. It is possible to be simultaneously pro-business and pro-labor, and more importantly, it is possible, and necessary, to be both pro-growth and pro-environment.

There is tremendous opportunity and challenge in this area, to become more environmentally conscious while devising environmentally sound

258. For example, chemical spills that exceed designed specifications of a treatment plant; or when a compound is dumped into waste water, biotechnology is used to take care of bacteria forming. However, this rarely occurs.

259. Interview with Soong, supra note 179.

strategies and products to continue growth while conserving our resources and biological diversity. In high growth countries, like Taiwan, the government is playing an active role. This partnership-oriented technique should be studied and implemented in the United States. Although Americans would question the proper mix of government activity in the private sector, some is needed if we are going to continue leading the world in these booming areas.

The solutions to providing for the Earth's continually expanding population needs to be addressed without exacerbating the already degraded conditions. No matter what policy choices are made, the implementation will be costly, "but the costs of inaction would prove much higher still." 261

It appears that Taiwan has taken the 301 classification seriously and is trying to convince the United States that the Yüan is trying to curb the gross intellectual property rights violations in Taiwan. If Taiwan is unable to persuade the United States Trade Representative's Office that they have made substantial progress in stamping out piracy and counterfeiting of intellectual property, it could be detrimental to U.S.-R.O.C. trade negotiations. However, according to Carla Hills, "with a good faith effort, we can negotiate a solution." 262

On a recent visit to Taiwan, then-Ambassador Carla Hills asserted that trading blocs are not necessarily bad. "Nearly everywhere—from the emerging democracies of Eastern Europe and the former Soviet Union to Latin America—people are beginning to understand that open markets and competition, not government interference and control, generate growth and prosperity. The United States will do all it can to open markets. We want Taiwan to work with us to achieve this grand goal. Together, in partnership, we can help create a truly open trading system that will fuel the engine of global economic growth through this century and well into the next." 263 American firms are beginning to adapt from U.S.-style strategies to market-style schemes, which will open markets even further. 264


263. Remarks by Hills, supra note 42.

264. For example, Whirlpool washing machines were once a prime seller in the R.O.C., but the machines themselves were too big for the very limited space available. A Japanese company adapted their products to reflect this and became the primary market source for washing machines. Additionally, products that meet U.S. EPA standards are too expensive for the Chinese market. U.S. firms are adapting their products to meet the minimum R.O.C. EPA requirements. By lowering production costs, the American businesses are beginning to sell more on the island.
"We also believe that most of the legitimate businesses in Taiwan recognize the importance of IPR protection to its own economic success, and that all will thrive in an environment which protects everyone's IPR and encourages innovation and progress in Taiwan. We are, however, concerned that some enterprises in Taiwan still continue to violate the intellectual property rights of others, leading to their unjust enrichment. Such practices do not enhance Taiwan's image in the international arena."

Even after all of the talks by both sides, no permanent solution has been devised. "IPR protection in Taiwan remains a major concern for the United States. We look forward to continued cooperation in this important area." All of the answers require a change in attitudes via mass education. It appears that Taiwan is doing what it can to educate its populace on the importance of IPRs, environmental concerns and pollution control.

265. AIT, supra note 249.

266. Id., at 2.
APPENDIX A

OVERVIEW OF THE CHINESE DEMOCRACY AND LEGAL SYSTEM

The R.O.C. governmental system is based on the philosophy of Dr. Sun Yat-Sen\textsuperscript{267} combining the democratic experiences of the West with the salient aspects of traditional R.O.C. thought. The government combines both presidential organization and a cabinet arrangement to form a unique blend of governmental authority and structure.\textsuperscript{268} The administrative government is constructed of five separate branches. Sun Yat-Sen believed that the three-tiered system of the West was insufficient to adequately represent the people's interests, that the branches were too overburdened.\textsuperscript{269}

The different branches of R.O.C. government are called Yiian. The central government consists of the Executive Yiian, the Judicial Yiian, the Legislative Yiian, the Examination Yiian and the Control Yiian. This "Five-power Constitution" is a centralized National Assembly, comprised of elected officials who exercise the four "political rights" of the people that Yat-Sen supported.\textsuperscript{270}

The differentiation between the powers and jurisdiction of the national government are specifically listed as are those accorded to the local governments, all in an effort to further separate the government and adequately represent the people's interests. Any matters of national concern or those requiring a consolidated effort are designated to the central government. This is the case with international trade and negotiations and matters affecting foreign nationals.\textsuperscript{271}

Due to the constant threat of invasion by mainland China, Taiwan, until 1987, was under martial law, which inhibited many trade negotiations and agreements. More recently, however, the government has been putting forth an affirmative effort to ease those restrictions and to encourage international investment and transnational trade. Further, the R.O.C. government has continually been enacting legislation to facilitate international

\textsuperscript{267} Comprising nationalism, democracy and people's livelihood. MA, supra note 63, at 4.

\textsuperscript{268} Hsieh Kwan-Shen, A BRIEF SURVEY OF THE CHINESE CONSTITUTION (Taipei, 1954).

\textsuperscript{269} MA, supra note 63, at 11.

\textsuperscript{270} Consisting of election, recall, initiative and referendum. For a more formal chart see Chui supra note 70.

\textsuperscript{271} MA, supra note 63, at 6. R.O.C. CONST. (1949).
investment and trade,\(^ {272}\) which ultimately has strengthened the domestic economy and social infrastructure.\(^ {273}\)

The R.O.C. legal system, similar to the government, was based on a variety of experiences of other nations. Among those were states that relied on Roman law as a formulative basis for its legal systems. Hence, contemporary R.O.C. law is a code-based structure.

It might be helpful to outline the basics of the R.O.C. democracy and legal system in order to more fully understand its system of self-government. After thousands of years of traditional Chineses law and justice,\(^ {274}\) R.O.C. western legal theories were incorporated into Chinese society during the early 20th century. As a result there was expansive judicial reform, and the basic laws were codified during the 1920s and 1930s; in 1947 a final constitution was drafted. After World War II, when the Communists took over the mainland, the Nationalist government sought refuge on the island of Taiwan, bringing this legal organization with them, and today makes up modern R.O.C. law. The legal system relies on code books. The R.O.C. Civil Code is comprised of five books covering general civil action.\(^ {275}\) This is supplemented by the Book of Obligations of the Civil Code, a four volume set dealing with "special laws of civil matters," essentially all commercial matters. The Code of Civil Procedure is made up of nine books, and there is a series of laws regarding economic matters.

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\(^ {273}\) MA, supra note 63, at 23.

\(^ {274}\) Traditional Chinese law was based on two concepts, Fa, and Li. Fa, was the literal law and dealt with crime and punishment. Li, on the other hand, dealt with social rules and individual conduct, which could be equated to today's civil law. Confucius (551-479 B.C.) promoted Li, and consequently as Confucianism became widely followed in China during the 1st century B.C., Li grew to become the governing force over Fa. Thus, in the resulting structure Fa was used to strengthen and sustain Li, forming a highly ethics-oriented society. Additionally, the letter of law became less compelling to the preservation of peace and order in ancient China. See TUNG-TSU CH’U, LAW AND SOCIETY IN TRADITIONAL CHINA, (1965).

Even with the judicial reforms of the early 20th century, these Chinese principles persist. The populace still looks to extralegal ideals (Li) rather than legislation when questioning civil matters. However, with increase in the frequency and importance of international trade and negotiations, Chinese attitudes have begun to change, but this can still be a problem. See HERBERT H.P. MA, LAW AND MORALITY: SOME REFLECTIONS ON THE CHINESE EXPERIENCE PAST AND PRESENT, PHILOSOPHY EAST AND WEST (1971).

\(^ {275}\) It is interesting to note that much of the legislation is aimed at shifting moral blame to social responsibility. See MA, supra note 63, at 15, n50.
Similar to other code countries, Taiwan does not officially recognize the doctrine of judicial precedent.\textsuperscript{276} Judges do not create law based on public policy perceptions, rather, judges apply the appropriate code to the case at hand.\textsuperscript{277} Additionally, R.O.C. courts are not bound by decisions rendered by the high court, nor is the high court bound by its own decisions.\textsuperscript{278} Historically speaking however, the R.O.C. has practiced following judicial precedents. When the Republic first formed, it had no laws, and relied on ancient dynastical law and precedent.\textsuperscript{279} This practice continued even after the promulgation of the permanent codes.\textsuperscript{280}

Custom is invoked when no laws are relevant to the case at hand.\textsuperscript{281} "Custom is applicable in civil matters only when it is not contrary to public order or social good." Thus judges are given great discretion when deciding on the custom to be used. The people on Taiwan are a diverse group with often conflicting customs; the government hoped to establish and maintain uniformity for national policy and modern social life. Although Asian cultures are becoming more litigation-oriented, arbitration is the preferred course of action when disputes arise.\textsuperscript{282} In fact, Taiwan recently passed a law for "dispute resolution" for environmental damage claims.

\textsuperscript{276} MA, \textit{supra} note 63, at 24.

\textsuperscript{277} See Comment, \textit{supra} note 129.

\textsuperscript{278} Interview with Eric Chin, patent department, Lee & Li Attorney's in Ta'ipei, Taiwan (Nov. 25, 1992).

\textsuperscript{279} The law in force during the early forming of the Republic was the code system of the Ch'ing dynasty (1644-1911).

\textsuperscript{280} Lower courts feared being overruled by the Supreme Court and the judiciary hoped to achieve uniformity within the system. MA, \textit{supra} note 63, at 25.

\textsuperscript{281} "In civil matters, if there is no provision of law applicable to the case, the case shall be decided by custom..." \textit{CHINESE CIV. CODE}, art. 1.

\textsuperscript{282} Even the Civil Code (art 219) demonstrates the Chinese thought of Li, "in exercising his rights or executing his obligations every person should abide by the rules of honesty and good faith.".