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Technology Transfer as an Issue in North/South Negotiations

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TECHNOLOGY TRANSFER AS AN ISSUE IN NORTH/SOUTH NEGOTIATIONS

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TABLE OF CONTENTS

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I. INTRODUCTION

For a number of years, negotiations have been taking place on an international scale, usually under the auspices of the United Nations or one of its specialized agencies, on a wide variety of subjects involving technology transfer between the developed countries (the North) and the less developed or developing countries (the South). Three primary groups are involved in the United Nations negotiations. The first is known as the Group of 77, which now includes more than 120 developing countries, including countries in South and Central America, Africa, and Asia. Within this group the degree of development varies from countries such as Brazil, Argentina, and Mexico, which are quite developed, to the least developed countries, which include very large countries such as Bangladesh and very small countries, a number of which have recently become independent. Group B, the second major group, includes the developed, market-oriented countries, which include those of Western Europe, the United States, Canada, Japan, Australia, and New Zealand. The third major group, Group D, includes the Soviet Union and other Eastern European socialist nations. The comparative development of Group D countries sometimes leads them to agree with Group B countries on transfer of technology items. In other cases, they align themselves with the developing countries. These groups are not always defined strictly in accordance with economic terms because political considerations often prevail. For example, Turkey is not part of the Group of 77 where it logically should be, but is in Group B because of its NATO affiliation. Two United Nations organizations that have been heavily involved in technology transfer negotiations are the United Nations Conference on Trade and Development (UNCTAD) and the World Industrial Property Organization (WIPO). UNCTAD is an ongoing organization, which is involved in holding many negotiations having an impact on technology transfer. Because UNCTAD operates in a very political manner, its critics feel that it is not actually interested in helping developing nations, but in maintaining its own prominence. By proposing many seemingly radical and impractical schemes, UNCTAD keeps itself in the forefront of controversy, but nothing actually happens to help developing countries. WIPO is in charge of administering a number of international treaties on patents, trademarks, and copyrights. WIPO tends not to be as political as UNCTAD. WIPO, however, often seems to adopt attitudes somewhat similar to those of UNCTAD in an apparent ef-

fort to demonstrate to the developing nations that WIPO can also get results.

II. UNCTAD Code of Conduct for International Transfer of Technology

In April 1974 the Pugwash Conference was held in Geneva, resulting in a proposed Code of Conduct for Transfer of Technology, which was published and circulated by UNCTAD on July 15, 1974.[1] Since that time, there have been a number of meetings of governmental groups of experts under the auspices of UNCTAD. While it was originally thought that an acceptable code could be prepared quickly, that goal has yet to be obtained.

Those supporting the necessity of such a code assume that the desired technology is principally possessed by large multinational enterprises located in the developed nations. These businesses must be forced to make technology available to the developing countries on terms that are advantageous to the developing countries. The code's proponents further assume that the multinational organizations are eager to transfer their technology to developing nations and that governments must play a major role in the negotiation and transfer process.

A. *Composition of Governmental Negotiating Delegations*

One problem with the UNCTAD negotiations is that meetings are conducted by groups of governmental "experts," who usually do not have any experience in the field being discussed and certainly will not have any responsibility for operating in the area after an agreement is reached. Most governmental delegations, including that of the United States, do not trust private industry representatives and do not wish them on the delegation even though they may truly be experts on the subject. Government officials tend to regard university professors to be more expert and less biased and often consult them for opinions. Occasionally, the United States does permit those from private industry to be a part of the delegation, and I have been a member of three delegations to the United Nations negotiations in Geneva. With one unusual exception, these meetings have been composed of people who have little, if any, knowledge of the subject being negotiated, although a few of the developed nations' delegations had compe-

1. U.N. Doc. TD/B/AC.11/L.12 (1974).

tent people. Group of 77 negotiators are usually government employees who have never worked on the subject. Many are members of the permanent missions at Geneva and attend conferences one after the other. Industries in the developing nations often disagree with the policies of their governments in international negotiations, but do not feel they are in a position to do anything about it. The lack of industrial experts is unfortunate as these meetings tend to drag on for years with very little positive results. If a meeting were held with true experts on technology transfer and it was decided that a code of conduct was necessary, an acceptable code could probably be negotiated in a rather short time. This is not the case with the UNCTAD Code of Conduct.

B. *Transactions Covered*

While many of those negotiating, writing, and speaking about the proposed code believe it will only cover technology transfer from large multinational corporations to smaller developing country organizations, a close reading of the proposed code indicates that this is not true. For example, if a Canadian citizen owned a United States patent and wished to grant a license to a United States company, the agreement would be covered by the proposed Code even if no know-how was transferred under the patent. Some even feel that an employment invention agreement between a corporation and an employee, who is a citizen of another country, might fall within the Code. The provisions of the proposed Code are not limited to transactions with developing country organizations. They cover technology transfer agreements between organizations located in two different developed countries.[2]

I am an employee of a company that is a licensee more often than it is a licensor and pays more in royalties than it receives in royalties from others. Most other United States corporations are also licensees more often than they are licensors. Even as a licensee, I see no need for a code to help my company deal with other organizations in developed countries. At some time in the future, I predict that there will be a code that may initially be voluntary, but become mandatory at a later time. It is possible that national governments may feel that the international code is such a good idea that they will unilaterally adopt the provisions of this code.

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2. *See* Blair, *United Nations International Code of Conduct on the Transfer of Technology*, 13 J. M. J. PRAC. & PROC. 163 (1979).

The negotiators apparently assume that all licensing agreements are many pages long involving provisions for guarantees of product quality, suitability of the technology, training of personnel, and the transferring of complete information, spare parts, and components. Those in the technology transfer business know that, while such clauses may be appropriate in the transfer of large, commercially operable chemical process technology, they are not appropriate or even useful in many types of technology transfer. For example, Itek Corporation has no agreements that include any of the above clauses, nor do we, as a licensee, feel they would be appropriate in our agreements. We have some agreements that are only one-page long, in which we acquire rights to make, use, and sell items developed by others.

While many companies, particularly larger ones, will be able to live with any code that is promulgated, others will simply decide it is not worth the bother and do even less international technology transfer than at present. The vast majority of small and medium-sized companies do no technology transfer with developing countries and certainly will not be encouraged to investigate this field under a code such as that proposed at the UNCTAD meetings. A recent draft of the UNCTAD Code of Conduct[3] is a twenty-six page document and is not complete because additional language must be agreed upon and other chapters must be provided. This Code has been written about elsewhere.[4] The pro-

3. Draft International Code of Conduct on the Transfer of Technology as of 16 November 1979, U.N. Doc. TD/CODE TOT/20 (1979).

4. *See* Blair, *supra* note 2; Wallender, *Conflict in International Transfer,* in FINNEGAN & GOLDSCHEIDER, THE LAW AND BUSINESS OF LICENSING [hereinafter cited as FINNEGAN ET AL.] 520.257-75 (1978), *reprinted in* 12 LES NOUVELLES No. 2 (1977); Lockwood, *Commonality and Agreement with Third World on Technology Transfer,* in FINNEGAN ET AL. at 520.277-85, *reprinted in* 12 LES NOUVELLES No. 2 (1977); Wionczek, *Code of Conduct on Transfer of Technology—When and Why?,* in FINNEGAN ET AL. at 520.381-89, *reprinted in* 13 LES NOUVELLES No. 1 (1978); Finnegan, *Code: A Panacea or Pitfall?* in FINNEGAN ET AL. at 520.407-45, *reprinted in* 13 LES NOUVELLES No. 2 (1978); Joelson, *United States Law and the Proposed Code of Conduct on the Transfer of Technology,* 23 ANTITRUST BULL. 835 (1978). *See generally* UNITED NATIONS INSTITUTE FOR TRAINING AND RESEARCH, W. Chudson, The International Transfer of Commercial Technology to Developing Countries, Research Report No. 13 (1971); U.N. Dep't of Econ. & Soc. Aff., Transfer of Operative Technology at the Enterprise Level, U.N. Doc. ST/ECA/151 (1972); UNITED NATIONS CONFERENCE ON TRADE AND DEVELOPMENT, Guidelines for the Study of the Transfer of Technology to Developing Countries, U.N. Doc. TD/B/AC.11/9 (1972); UNITED NATIONS INDUS-

posed Code's Table of Contents shows the complexity of the Code, which applies to many agreements that should be very straightforward and simple.

C. *The Necessity of the Code*

Politicians and economists from a number of the developing countries and the United Nations think a code of conduct for technology transfer is necessary because developed country organizations have taken advantage of developing countries for many years. They feel that developed countries and developed country organizations have an obligation to transfer technology to developing countries and that the incremental costs of the technology transfer are the only costs that should be recouped. Those familiar with technology development realize that most research does not result in real products so that often the profits and licensing returns on one product line must be used to support general research and development activity. If each particular licensing transaction involved only the incremental cost of the technology transfer and, by analogous reasoning, each product line profit only reflected the profit of that particular line, there would be no money left to do any new product development. If there is no incentive to transfer technology, prospective technology transferors will turn their attention to areas that are more useful and profitable.

Developing countries feel that their citizens are at an unfair disadvantage when negotiating with large, developed country corporations. Thus, many developing countries have passed legislation and regulations making negotiations at least equal. Developing nations wish to follow Japan's example. Under the Japanese

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TRIAL DEVELOPMENT ORGANIZATION, Guidelines for the Acquisition of Foreign Technology in Developing Countries, U.N. Doc. E.73.II.B.1 (1973); U.N. Econ. & Soc. Aff., The Acquisition of Technology from Multinational Corporations by Developing Countries, U.N. Doc. ST/ESA/12 (1974); UNCTAD, Major Issues Arising from the Transfer of Technology to Developing Countries, U.N. Doc. TD/B/AC.11/10/Rev.2 (1975); UNCTAD, An International Code of Conduct on Transfer of Technology, U.N. Doc. TD/B/C.6/AC.1/Supp.1/Rev.1 (1975); UNCTAD, Report of the Intergovernment Group of Experts on an International Code of Conduct on Transfer of Technology on its Third Session, U.N. Doc. TD/AC.1/9 (1977); UNCTAD, Transfer of Technology—Its Implications for Development and Environment, U.N. Doc. TD/B/C.6/22 (1978). *See also* Joelson, *The Proposed International Codes of Conduct as Related to Restrictive Business Practices*, 8 L. & POL'Y INT'L BUS. 837-51 (1976).

system, a government agency regulated and ruled on many technology transfer agreements. Developing nations do not consider that Japan was a highly developed and literate society able to utilize the transferred technology. Most of the developing countries have not yet reached that state of development.

Another viewpoint put forth by the developing countries is that technology is a part of a universal human heritage and should therefore be available to all. All countries have the right of access to technology. The same reasoning implies that all countries should have the right of access to the oil and natural resources owned by the developing nations. Taking this argument to its logical extremes, everyone should have access to everything. I doubt if you will find any organization that has spent money to develop its own technology will agree that this technology should be made available to all. Developing nations feel that they are entitled to special treatment in technology transfer transactions and that they need an unrestricted flow of technological information. They have come to the conclusion that an international, legally-binding instrument is the only effective way to regulate the transfer of technology.

Many of the developing nations feel that they have been abused by over forty restrictive business practices that developed nations have imposed on them in the past. These restrictions include:

(1) Restricting the use of technology after expiration or termination of the agreement;
(2) restricting the freedom of the acquiring party with respect to similar or competing technologies or products;
(3) restricting the use of technology after expiration of the patents or other industrial property rights involved;
(4) requiring the acquiring party to grant exclusive sales rights to the supplying party;
(5) requiring the acquiring party to grant back improvements on the acquired technology to the supplying party;
(6) restricting the research and development activities of the acquiring party;
(7) restricting the receiving party's adoption or improvement of the technology;
(8) requiring the acquiring party to use personnel designated by the supplying party;
(9) fixing the price of products made by using transferred technology;
(10) restricting the export of products made using the technology;

(11) requiring the acquiring party to refrain from challenging the validity of patents and other industrial property rights;
(12) requiring acceptance of additional technology or goods not needed or wanted by the acquiring party;
(13) requiring the acquiring party to obtain its raw material, equipment, and other parts from specified sources;
(14) restricting patent pool or cross-licensing agreements that impose territorial quantity or price restrictions.

Many of these restrictions are not necessary in most agreements, but others are legitimate in certain fact situations, showing the near impossibility of making a universal code for the transfer of technology.

The developing countries want the Code of Conduct to apply to technology transfer arrangements between foreign enterprises and their subsidiaries. The United States Department of Justice has always taken the position that a company and its subsidiary are really one entity and should be treated as such. This is still a point that is being discussed at the UNCTAD conference. The final result is unclear at present.

III. UNCTAD Meetings on the Role of Intellectual Property in International Transfer of Technology

A. *Patent Meeting—1975*

There have been two major UNCTAD meetings held relating to the role of intellectual property in international transfer of technology. Governmental "experts" from over fifty countries met in September 1975 to discuss a document prepared for the meeting by the United Nations Department of Economic and Social Affairs, UNCTAD, and WIPO.[5] The vast majority of people attending this meeting were not experts in the subject, and only the two nongovernmental employees were delegates. The meeting dealt with the same issues that had been addressed at WIPO's meetings on the Paris Convention. It served primarily as a forum for the airing of the complaints about patents by economists and other government employees of the developing nations. The developing nations felt that the majority of patents obtained in their country were not used in manufacturing in that country. The developing nations felt the Paris Convention did not take

5. UNCTAD, The Role of the Patent System in the Transfer of Technology to Developing Countries, U.N. Doc. TD/B/AC.11/19/Rev.1 (1975).

into consideration the needs of the developing countries.

The developing country representatives presented numerous proposals. They felt that the "national treatment" philosophy should be eliminated. This philosophy provides that all nations are to be treated equally. The developing countries preferred discrimination in their favor.

Developing nations' proposals required that patents must actually be worked in the country where the patent is issued. The invention covered by the patent must be manufactured in the patent-granting country. Developing countries do not regard importation as satisfactory working. In actual practice, however, if a company obtains patents in thirty countries, it would not be possible to manufacture products in all of them within the two or three-year time period within which the developing countries feel the manufacture should be started. Often a product will be manufactured in one country and exported to other countries in the same region. A developing country in which a manufacturing plant is established will be very interested in exporting that product to surrounding countries. If the patent owner establishes a manufacturing plant in each of the surrounding countries, no market will be left in those countries, thus isolating international trade.

Another proposal shortened the duration of patents. The life of patents in most countries is arbitrary, but it is difficult to say that the duration of all patents should be shorter. The commercial product life varies tremendously among different technologies. Most patents' lives have been selected as a compromise that is about right for many products. Shortening the life of patents would not encourage manufacturers to innovate. In the future, developing nations will own a number of patents and will probably wish to make patent life longer.

Another proposal stated that a patent should not include the exclusive right of importation. Closely related was the proposition that patents should not be used to limit exportation of products from one country to another. Developing nations feel that exclusive patent rights should only protect manufacture in certain locations and should not control exports or imports. Such a proposal could actually hurt the developing nations. Without the export-import controls provided by patents, a developing nation organization owning patent rights would be unable to protect itself against manufacturers in other countries that might be able to manufacture the product more efficiently because of larger cap-

ital resources and access to more efficient labor. This could drive the local organization out of business. The licensing business would be impossible because the licensee could not protect himself from the licensor, other licensees, or others having similar technology.

Inadequate patent disclosure was also a target of the developing nations' attacks. This is particularly interesting because patent offices in most countries, including developing countries, object to the large amount of disclosure that occurs in patents filed by United States companies. Most other patent offices require the deletion of large amounts of disclosed material. The law of all countries of the world, except the United States, Canada, and the Philippines, is that the patent owner who files first in the patent office wins. For this reason, the developing nations and others have structured their law to encourage early filing. This often means that an early laboratory development will be filed. A patent is usually issued some time before the technical information necessary for commercial implementation is available. If such information were available and included in the patent, disclosure might involve thousands of pages of information and drawings that would be entirely too bulky for a patent, making the patent system worthless.

One developing country proposal moved to change the principle of independence of patents in each country. This principle is that each patent is a separate document. If a patent is invalid in one country, it may still be valid in another. Those proposing this change have not thought the subject through. There are a number of instances in which a patent is perfectly valid in one country and invalid in another country because the laws of each country differ. For example, a company may have a patent in the United States naming one individual as the inventor and own a patent on the same invention in another country with different inventors. In each case, the differences in these patents is completely in accordance with local law. In the United States, a patent is awarded to the first to invent, not the first to file. Publication is a bar to obtaining a patent under certain circumstances in many countries, but it is not a bar under the laws of other countries. Something may be a patentable invention in one country and not in another. If the laws of all countries were the same, they were all interpreted the same, and the facts occurring in each country were the same, a better argument could be made for some kind of universal validity test. In practice, however, this abolishment of

the independence of patents is not logical or reasonable. This first meeting[6] did not accomplish any particularly startling results. It did, however, call for another meeting.

B. *Trademark Meeting—1977*

The second meeting took place in October 1977 and was entitled "The Role of the Industrial Property System in the Transfer of Technology." This title differs from the earlier title because it is broadened sufficiently to include trademarks. Although a draft of a document on patents[7] was submitted to various delegations who were planning to attend the meeting, most of the meeting was devoted to the subject of trademarks, which are not thought to have a very large role in the transfer of technology. The trademark document[8] was prepared by the UNCTAD Secretariat. The people preparing the document had no knowledge of trademarks in the commercial world. The same was true for those in attendance at the meeting, where there were only three people from the private sector.

The developing nations emphasized that countries should have the right to revoke or challenge trademarks in the public interest. Countries can revoke or forfeit trademarks when the owner or licensee of the marks has speculated or misused the trademarked product with regard to price or quality to the detriment of the public. In actual practice, if a trademark is forfeited or revoked, the trademark becomes available to all. Many products will have the same trademark, leading to confusion and consumer deception. Thus, the trademark owner is penalized, but the public is in a worse position than before.

The developing nations also felt that the Paris Convention should provide that developing countries can refuse to register or can invalidate a registered trademark when it has been revoked in the country of origin. The finding of invalidity in a particular

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6. UNCTAD, Agreed Conclusions and Recommendations of the Group of Experts, U.N. Doc. TD/B/C.6/AC.2/L.2 (1975).

7. UNCTAD, The International Patent System: A Revision of the Paris Convention for the Protection of Industrial Property, U.N. Doc. TD/B/C.6/AC.3/2 (1977).

8. UNCTAD, The Impact of Trademarks on the Development Process of the Developing Country, U.N. Doc. TD/B/C.6/AC.3/3 (1977), *later published as* UNCTAD, The Role of Trademarks in Developing Countries, U.N. Doc. TD/B/C.6/AC.3/3/Rev.1 (1979).

country because of substantial prior use in that country should have no bearing on the validity of the mark in another country because the use may not have occurred there. The plans proposed by the developing countries would also require any industrial property office, such as the United States Patent and Trademark Office, to provide, on request, information concerning the validity of trademarks to other industrial property offices. In practice, it would seem to be more useful if the foreign trademark office acquired such information from the trademark owner because the local industrial property office often does not have adequate information available.

There were several other less sweeping suggestions made by the developing countries. Trademarks should be revoked if they are not used. The principle of national treatment, which says that the citizens of each nation should be treated in a nondiscriminatory fashion by other nations and should be treated the same as their own citizens, should not constitute an obstacle in attempts to reduce the harmful effects of foreign-owned trademarks in developing nations. Preferential treatment should be provided to nationals of developing countries by relieving priority periods and fees. Appellations of origin, which are words or names used to describe products that are known by the location from which they come, and are the sole, nontransferable property of the country where they exist, prevail over trademarks. Trademarks containing geographic indications should only be registered by nationals of the countries where the geographic indication is located, if the geographic indication is an appellation of origin or can be interpreted as an indication of source. There should be no industrial designs and no service marks.

The results of this particular meeting were inconclusive, as was true of the 1975 meeting.

IV. THE PARIS CONVENTION FOR THE PROTECTION OF INDUSTRIAL PROPERTY

The Paris Convention is the basic international treaty relating to patents and trademarks. It was originally signed in 1883.[9] It has been revised a number of times and has been the subject of a

9. G. BODENHAUSEN, GUIDE TO THE APPLICATION OF THE PARIS CONVENTION FOR THE PROTECTION OF INDUSTRIAL PROPERTY 9 (1968); 1 S. LADAS, PATENTS, TRADEMARKS, AND RELATED RIGHTS 67 (1975).

number of meetings at the United Nations for additional revision since the last revision in Stockholm in 1967.[10] A number of items have been discussed in these Paris Convention revision meetings, many of which are similar to points raised in other North/South discussions. These Paris Convention discussions have involved the following fourteen points:[11]

(1) *National Treatment*—The developing nations propose that nationals of developing nations be treated preferentially by other countries.[12]

(a) They suggest that all countries should charge developing country nationals fifty percent of the fee charged others for obtaining and maintaining patents and trademarks.[13]
(b) The developing nations would have a fifty percent longer priority period in which to file their patent and trademark applications to get the benefit of the original filing date in a particular country.[14]

(2) *Independence of Patents*—As referred to above in connection with the UNCTAD meetings on the Role of Intellectual Property in the International Transfer of Technology, the developing countries wish to have interdependent patent rights. After considerable negotiation, the developing nations have moderated their position and now are merely asking for information about corresponding patents in other countries.[15]

(3-5) *Local Working*—These items are all related and concern nonworking and delays in working of patented inventions in the local country.[16] Compulsory licenses for nonworking and the granting of licenses of right in certain cases were requested. After considerable negotiation, it appears that the Paris Convention may be revised to provide that local working can be required and that im-

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10. BODENHAUSEN, at 9; LADAS, at 89, *supra* note 10.

11. WORLD INTELLECTUAL PROPERTY ORGANIZATION, Report adopted by the Ad Hoc Group of Governmental Experts on the Revisions of the Paris Convention 11-14, U.N. Doc. PR/GE/1/10 (1975); 935 OFFICIAL GAZETTE OF THE UNITED STATES PATENT & TRADEMARK OFFICE 446-48 (1975); WIPO, The Fourteen Questions of the First Session of the Ad Hoc Group of Governmental Experts, U.N. Doc. PR/GE/II/2 (1975).

12. *See* WIPO *Basic Proposals, Memorandum by the Director General, in preparation for the Diplomatic Conference on the Revision of the Paris Convention,* Mar. 4, 1980, U.N. Doc. PR/DC/3 (1979).

13. *Id.* art. A, at 66.

14. *Id.* art. B, at 72.

15. *Id.* art. 12 bis, at 76.

16. *Id.* art. 5A, at 38.

portation of a product is not working of the patent unless the local country wishes to regard it as so. At present, nonexclusive, nonvoluntary (compulsory) licenses may be provided for nonworking unless the patentee justifies its nonworking. While the nonvoluntary license may be nonexclusive in many cases, there are approved provisions for it to be compulsory in the present revision talks. The United States has asked for this subject to be reopened and has pointed out that a patent owner could be stopped from practising his invention in a country by his own patent if another had an exclusive license. Thus, in some instances, the patent owner would be better off if he hadn't filed a patent application on his invention in that country in the first place. This matter has not yet been resolved.

(6) *Preferential Treatment*—Preferential treatment without reciprocity has been merged into point (1) above.

(7) *Technical Assistance*—A new Paris Convention article 12 *ter*[17] would provide for assistance to developing countries in matters of industrial property.

(8) *Types of Protection Other than Patents*—Negotiations are continuing over how to handle inventor's certificates in the Paris Convention.[18] The Group D countries, particularly the Soviet Union, want inventor's certificates to be given the same status as patents. The United States and others have said that they are willing to do so, but that if a country has inventor's certificates, it must grant patents and inventor's certificates in the same field. The grounds and time limits for challenging patents and inventor's certificates must be the same, and the term of the patent and the inventor's certificates must be the same.

(9) *Trademarks and Appellations of Origin*—Trademarks and appellations of origin are the subject of considerable discussion.[19] Developing nations and some of the Group B countries, particularly France, wish to disallow the use of appellations of origin as trademarks by those from other countries. While a number of compromises have been suggested, some of which are acceptable to the United States, this question remains unresolved.

(10) *Paris Convention Reservations*—Originally, the developing countries wanted to be permitted to make reservations with re-

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17. *Id.* at 82.

18. *Id.* art. 1, at 18.

19. WIPO, *Working Group on Conflict between an Appellation of Origin and a Trademark*, Preparatory Intergovernmental Committee on the Revision of the Paris Convention for the Protection of Industrial Property, various documents including PR/WGAO/II/2; PR/WGAO/II/3; PR/WGAO/II3.Rev.; PR/WGAO/II/4; PR/WGAO/II/5; PR/WGAO/II/6; PR/WGAO/II/7; PR/DC/4.

spect to certain provisions of the revised Paris Convention, but this request has apparently been dropped.

(11) *Deletion of Paris Convention Article 24*—The developing countries wish to delete article 24 of the Paris Convention, which provides that any country may inform WIPO that the Paris Convention shall be applicable to all, or just part of, the territories for which it is responsible.[20] This subject has not been resolved.

(12) *Article 5 quater*[21] *of the Paris Convention*—This article provides that when a product is imported into a country where there is a patent on the process of making the product, the patent owner shall have all the rights with regard to the imported product that are accorded to him by the legislation of the country of importation on the basis of a process patent if the product was manufactured in that country. The developing nations are concerned that they would not be permitted to give process patent protection to products produced by the patented process in their country, giving no protection from imported products produced by the patented process. They feel, therefore, that article 5 *quater* should be changed. The Group B countries say that the developing countries can do as they desire on this subject. They see no reason for a change in article 5. This matter is still under discussion.

(13) *Priority Privileges*—Developing nations wish special privileges with respect to the right of priority. This was discussed in connection with (1) and (6) above.

(14) *Unanimity*—The process for amending the Paris Convention has been the subject of the most controversy in the revision discussion. In the past, the Paris Convention has been amended only by unanimous vote, although the Paris Convention itself does not require this. WIPO is now part of the United Nations, and United Nations document agreements are usually adopted on a two-thirds majority vote. A diplomatic conference to revise the Paris Convention meeting in February and March 1980 was supposed to revise and sign a new treaty in a six-week period. Unfortunately, the unanimity rule became a problem. The entire period of the conference dealt with this subject. The United States was the only country that held out for unanimity in changing the provisions of the Paris Convention.[22] The other Group B countries were willing to accept less than unanimity. Finally, all of the countries except the United States unofficially agreed that the Paris Convention should be revised by consensus. If consensus could not be obtained, a two-

20. *Basic Proposals, supra* note 13, at 104.

21. *Id.* at 64.

22. U.S. PATENT AND TRADEMARK OFFICE REPORT ON PARIS TREATY CONVENTION (March 1980).

thirds majority of those countries voting, as long as more than twelve were not opposed to the change, would be required. The United States suggested that it could accept a move to change the unanimity requirement. It proposed that passage be conditioned on no more than two countries voting against any proposal. The president of the conference, who was from a developing nation, ruled without a vote that the consensus rule of thirteen was to be the rule of the conference.[23] With only one more day of the conference remaining, it was adjourned without resolving the other problems discussed above.

The United States delegation, the United States Patent and Trademark Office, and the State Department have been discussing unanimity with a number of other countries and organizations, such as the United States Trademark Association, the Licensing Executives Society, the American Patent Law Association, the American Bar Association Patent, Trademark & Copyright Section, the Pacific Industrial Property Association, and the United States Chamber of Commerce. These organizations have been very supportive of the United States delegation. They have contacted a number of their non-United States members to explain the situation to them and to urge them to discuss the matter with their local government to see if some support can be generated for the United States position. The "more than twelve" idea has the support of the European Economic Community (EEC), which has voted as a bloc in the Paris Convention. The EEC countries would oppose the idea of an exclusive compulsory license being granted under a patent, and thus, the EEC countries together with the United States, Canada, Australia, New Zealand, and Japan would be able to stop that particular provision from being approved. France, however, feels very strongly about the appellation of origin provisions, and the EEC will probably go along with France. The United States probably cannot get more than twelve countries to vote against the appellation of origin outside of the EEC. In effect, the EEC has reached a position where it can veto any provision it wishes, but the United States, with only one vote, will not be able to do so.

Apparently, the United States will attend the diplomatic con-

23. Professor G.H.C. Bodenhausen, former Director General of BIRPI (now WIPO) and a recognized authority on the Paris Convention, wrote that the unanimity rule will still prevail unless the United States drops its opposition. 11 INT'L REV. INDUS. PROP. & COPYRIGHT L. (IIC) 427 (1980).

ference and the WIPO meetings to set the time and place for the resumed conference. The United States position is still under discussion. The United States will probably argue against the use of the "more than twelve" rule and may not agree to sign the treaty if any provisions are adopted without a unanimous vote.

V. Negotiations in Which Technology Transfer is a Comparatively Minor Issue

There have been a number of other negotiations in which technology transfer is a fairly minor issue. Even in these negotiations, technology transfer situations may be very important with respect to a particular matter.

A. *Restrictive Business Practices*

After a number of years of meetings[24] and the publication of a number of documents,[25] an UNCTAD Conference on Restrictive Business Practices agreed to A Set of Multilaterally Agreed Equitable Principles and Rules for the Control of Restrictive Business Practices.[26] This document will be transmitted to the United Nations General Assembly for adoption as a resolution. While the Principles and Rules do not specifically discuss technology transfer, many could be regarded as relating to technology transfer. Section D4e provides that enterprises should refrain, in certain circumstances, from imposing restrictions on the importation of goods that have been legitimately marked abroad with a mark identical or similar to the trademark for similar goods, when the marks are of the same origin. A licensee of technology and trademarks in one country might not, in some circumstances, be able

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24. Joelson, *The Proposed International Codes of Conduct as Related to Restrictive Business Practices,* 8 L. & Pol'y Int'l Bus. 837-74 (1976); UNCTAD, Report of the Third Ad Hoc Group of Experts on Restrictive Business Practices on its Sixth Session, U.N. Docs. TD/250, TD/B/C.2/201, TD/B/C.2/AC.6/20 (1979).

25. UNCTAD, Restrictive Business Practices, U.N. Doc. TD/B/C.2/104/Rev.1 (1971); UNCTAD, Restrictive Business Practices—Studies on the United Kingdom of Great Britain and Northern Ireland, the United States of America and Japan, U.N. Doc. TD/B/390 (1973); UNCTAD, Restrictive Business Practices in Relation to the Trade and Development of Developing Countries, U.N. Doc. TD/B/C.2/119/Rev.1 (1974); UNCTAD, Control of Restrictive Business Practices in the European Economic Community, U.N. Doc. TD/B/608 (1977).

26. UNCTAD, United Nations Conference on Restrictive Business Practices, U.N. Doc. TD/RBP/CONF./10 (1980).

to prevent the importation of a product marked with the same trademark that was imported by another licensee in another country. Section D4f discusses the control of the supply of goods or services and the form or quantities in which goods may be sold. This may have an impact on technology transfer. The real impact of the section's qualifications and exceptions will depend on how it is interpreted and applied.

In addition to the Principles and Rules, UNCTAD has published the first draft of a model law on restrictive business practices to assist developing countries in devising appropriate legislation.[27] This model law provides for the registration and approval of many types of agreements by the local government and defines a number of restrictive agreements of which the administering authority must be notified. Whether this draft will be used by developing countries in enacting restrictive business practices legislation remains to be seen.

B. *Law of the Sea*

The United Nations Report on the Third Conference of the Law of the Sea[28] includes article 144[29] entitled "Transfer of Technology," which provides that the authority administering the activities envisaged by the Law of the Sea Conference will take measures to acquire technology and scientific knowledge relating to the activities of the sea and will promote and encourage transfer of this technology to developing nations.

Article 5 of Annex III,[30] which is entitled "Transfer of Technology," provides that anyone submitting a proposed plan of work to the authority to conduct activities such as mining or drilling for oil shall make available to the authority a general description of the equipment and methods to be used. The applicant shall agree to make his technology available to the enterprise established by the proposed treaty or the authority administering the Law of the Sea operations on fair and reasonable commercial terms and conditions. The applicant's technology must be available to developing nations in certain circumstances. Thus, by a compulsory license arrangement, the technology of any particular organization will be available to others. This will not encourage innovation, as

27. UNCTAD, U.N. Doc. TD/B/C.2/AC.6/16/Rev.1 (1979).
28. U.N. Doc. A/CONF.62/WP.10/Rev.2 (1980).
29. *Id.* at 78.
30. *Id.* at 152.

the innovator's competitors will be able to use the innovations by paying the royalty established by the United Nations Authority.

C. *United Nations Conference on Science and Technology for Development (UNCSTD)*

In August 1979 the United Nations Conference on Science and Technology for Development was held. It was attended by representatives of many nations, and some of them, particularly the United States, spent substantial time and money attempting to prepare position papers[31] on science and technology for development. In these papers, transfer of technology played a very small part, although some felt it should have played a much larger part. The developing nations presented their usual demands. Unfortunately, the conference did not accomplish anything concrete.[32]

D. *Related National or Regional Regulations*

The Latin American countries have attempted to regulate technology transfer through the Andean Pact and national legislation. Other developing nations, such as Nigeria, have enacted legislation and regulations. The developing countries are attempting to emulate Japan, which closely controlled incoming technology transfer for a number of years after World War II. As Japan's technology advanced, the regulations were liberalized and are now practically nonexistent. The major difference between post-World War II Japan and the developing countries is that the Japanese were able to develop the appropriate societal infrastructure to build upon technology that was transferred to their corporations. With the high level of education and dedication of the Japanese, they were able to adapt technology and improve upon it themselves. Unfortunately, the developing nations are not yet able to do this.

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31. The U.S. Position Paper is U.S. DEP'T OF STATE, SCIENCE AND TECHNOLOGY FOR DEVELOPMENT, Publication 8966, U.S. Superintendent of Documents, Stock No. 044-000-01695-8 (1979).

32. Maddock, *Development: Where are the Real Experts?*, 282 NATURE 437 (1979). *See also* Roark, *U.N. Technology Meeting Lacked Clear Direction*, 205 SCIENCE 1236 (1979); *New LDC Demands for Technology Transfer*, BUS. WEEK, Sept. 17, 1979, at 60.

VI. Possible Solutions

The developing countries do not have the ability to design, build, or operate manufacturing facilities for many modern products, nor do they have the marketing ability to distribute or service these products. The reason is not that the citizens of these countries lack innate intelligence. The inability to produce high technology products stems from the low level of education and training. Various components that are needed to manufacture many products are unavailable, including a lack of distribution channels, available capital, and ability of the local society to use these products.

A. *The Developing Countries' Solution*

The developing countries feel that forcing technology-owning enterprises in developed nations to transfer technology to the developing countries under regulated conditions favorable to the developing countries will provide a solution to their problems. The developing nations hope to accomplish these objectives by means of international treaties and codes of conduct. The negotiations are usually initiated and encouraged by United Nations employees, national governmental employees, and various consultants, many with an academic background in economics, but rarely, if ever, with industrial developmental or technology transfer experience.

Unfortunately, even if developing countries get all the treaties, codes, and regulations they have requested, they would have little, if any, positive impact on the economy, society, or people of the developing countries. Industrial technology in market-oriented developed countries is not owned by governments, but by private organizations. Even when governments own certain patent rights, the government usually does not have the know-how to make real products. While some technology will be transferred to developing countries in any event, much more would be transferred if there were more incentive to do so. This is particularly true for the small and medium-sized companies, which do not have large internal staffs of licensing people, lawyers, or economists. Itek Corporation has annual sales of over $300,000,000, but at present, we have no patents issued in developing countries and have no plans to obtain any. Our company, as is true with many others, has a number of internal priorities, most of which relate to making money. There are many more projects proposed internally

than we are capable of accomplishing. The items which we undertake are usually selected on financial return criteria. Attempting to license some of our technology to developing nations, therefore, does not receive a high priority. While we have nothing against the developing nations, and philosophically would be quite interested in helping them, specific incentives sufficient for us to spend considerable time negotiating technology transfer agreements, obtaining government approvals, and using a number of our expert people in attempting to teach developing countries enough so that they could manufacture our product, market it, and service it are lacking. Of course, this is even more true for a company that might have ten to fifteen million dollars in annual sales. Even though they might have technology that would be useful to a developing nation, they cannot spend the time to license it as they lack the capacity. Without incentives, most organizations will not get involved in international technology transfer to developing nations.

B. *Patents in Developing Countries*

Most companies in developed countries, particularly those that are small or medium-sized, have few trademarks and even fewer patents in developing countries. Trademarks last forever, and it is sometimes useful to establish a trademark in a country even without immediate plans to use it. At present, there are few incentives to obtain patents in developing nations. The World Intellectual Property Organization has noted that there are very few patent applications filed in the developing nations. It is rare when a small or medium-sized company in the United States spends the money necessary to get patents in these countries. Even large multinational corporations usually attempt to patent only a small minority of their inventions in developing countries. For example, compare the applications filed on inventions in developing countries with the number filed in developed countries in 1976:[33]

33. WIPO, Industrial Property Statistics for 1976, U.N. Doc. 1P/STAT/1976/1 (1977).

Developing Country	Number Filed Per Year	Number Filed Per Week (Average)
Argentina	4,262	82
Bangladesh	154	3
Bolivia	171	3
Chile	756	15
Colombia	622	12
Ghana	45	1
India	3,093	59
Kenya	93	2
Tanzania	57	1
Uruguay	270	5
Zambia	152	3

Developed Country	Number Filed Per Year	Number Filed Per Week (Average)
Australia	14,117	271
Canada	26,163	503
Denmark	5,901	114
France	39,890	767
East Germany	6,474	125
West Germany	61,705	1,189
Ireland	2,865	55
Japan	161,016	3,100
Luxembourg	2,384	46
Netherlands	14,639	284
Poland	8,805	169
USSR	132,855	2,550
Switzerland	16,513	319
USA	102,344	1,970

The number of invention applications filed per week is the most meaningful statistic. Bangladesh, the eighth most populous country in the world, has three invention applications per week, while tiny Luxembourg has forty-six. India, the second most populous country, has fifty-nine, while Ireland has fifty-five and Denmark has nearly twice as many. This lack of patent filing in the developing countries occurs for two reasons. First, the expense involved today often runs to more than $1,000 per invention per country. This cost includes translation fees, government fees, and legal costs. Many products include ten patentable inventions in their first development embodiment. If this is the case, attempting to get patents in a large number of foreign countries becomes financially impossible. As a practical matter, many United States corporations file less than half of their inventions in foreign countries. Corporations usually choose a small number of countries in which to file, when they file at all. In a vast majority of the countries in the world, no patents are filed by the interested corpora-

tions. Second, inventors often fail to apply for a patent because they do not feel the patent will be used enough to produce an adequate return on investment. If no patents are owned by a company in a developing country, any transfer of technology to an organization in that country must occur through a license of technical know-how. Even though copies of patents issued in the United States or other countries are available to the developing countries, it is usually much more practical to pay the technology owner for the rights to his technical know-how than to attempt to develop it independently. In addition to being cheaper, this method avoids duplication of effort.

C. *Licensing Executives Society's Solutions*

In preparation for the United Nations Conference on Science and Technology meeting, the Licensing Executives Society (LES) made a number of proposals[34] to the United States Government. For the most part, the LES proposals were ignored by the government, but a brief review of the proposals is appropriate because they appear to be the type that might have some actual positive impact.

The LES plan called on the United States and the United Nations to take a number of steps to improve the technology transfer process. First, they should recommend to developing nations that their organizations hire expert licensing consultants to represent them in negotiating technology transfer and to assist them in finding the appropriate technology. The process of negotiating and contracting for technology transfer is highly sophisticated. This is not commonly understood in developing countries, which have minimal experience with technology business transactions. Developing nations must require that their local governmental or nongovernmental organizations hire expert licensing consultants to represent them in finding appropriate technology. Many developing nations are adverse to using the expertise of developed nations. If this idea can be presented in such a way that they are not asking for help, but are acting rationally in retaining an expert to work to accomplish their own objectives, it may succeed. The national origin of the expert should not matter as long

34. For complete details of the proposed LES plan, see *LES USA Proposal to Encourage Technology Transfer to the Developing Nations*, 12 LES NOUVELLES 11-15 (blue pages) (Dec. 1977).

as he is a legitimate expert in technology transfer and licensing.

The LES proposals also called for the establishment of various educational programs. One would provide for technology transfer fellowship programs to train technology transfer experts for developing nations. Programs to educate engineers, accountants, and marketing experts for developing nations would also be created. The training of farmers from developing nations would be increased. An opportunity for officials of developing countries to study techniques used to attract industrial investment by other national, territorial, and state governments would also be provided.

Other proposals called for the creation of incentives to aid in the technology transfer process. One calls for incentives for local businesses within developing nations to acquire technology from others and to assist them in capitalizing on such technology transfer. Another calls for the establishment of a specific technology transfer incentive program providing the necessary incentives to private industry to tranfer technology to the developing nations. The LES recommended that the large amounts of aid money not be provided directly to developing nations' governments, as has often been the case with foreign aid programs in the past. The money should be spent either by the government of the developed nation furnishing the money or by an international agency such as the World Bank. The developing nations should provide some of the money used to finance the technology transfer, as this will require them to be selective. The financing country would pay a significant technology transfer incentive payment to the owner of the technology.

The LES recommended that twenty-five percent of the payment be made when the initial arrangement is concluded, twenty-five percent be made at the actual start of construction of the plant, and the remaining half paid upon completion of the plant. The financing country would pay the costs of training people to work in the plant. It would enter into a cost-sharing arrangement with the developing nation organization for the cost of building and equipping the plant in the developing nation. The cost of building the plant would be divided between the financing country and the developing nation. The developing nation would provide ten to twenty-five percent of the financing. This would insure that it is really interested in the particular technology and plant being provided.

The developing nation operating the plant should pay a royalty

on net sales. The payment would be made to the technology owner for a period of fifteen years after the plant is completed and operating. In some instances, a royalty as low as one percent may encourage the technology owner to assist in getting the plant operating. More commonly, the royalty will be in the five to fifteen percent range.

For a period of ten years the technology owner would provide thirty professional-level technical man-days per year to transfer improvement technology to the plant sharing the cost with the developing country. In this way, improvements in the technology will be made available to the developing nation licensee, and there will be access to this improvement for the ten year period. If the licensee still desires improvement technology following the ten year period, an arms-length agreement could be negotiated. At the expense of the financing country, the technology owner would train people with the five year goal of running the plant without employing more than two people from outside the developing country. The ten year goal will be to run the plant without employing anyone from other countries. Such training is necessary so that the people from the developing country will not be doing merely low level labor, but will also become trained for supervisory positions within the plant.

In exchange, the technology owner would receive a royalty-free nonexclusive license to use any improvements conceived or developed by plant employees during the eleven years following the construction of the plant. This would encourage a full disclosure of improvement technology to the licensee. The technology owner would be able to grant a sublicense on the licensee's improvements only to those who have taken a license under his basic technology. In arrangements in which technology is being exchanged, it is always preferable to have each party make complete disclosure to the other party. This arrangement would insure that this would be done.

For ten years after the plant completion date, the plant would be prevented from exporting products to the country from which the technology came. The concern that some have in making technology available to others is that a potential competitor is created. It is probable that during the first ten years of operation the plant would only be able to supply the product to the developing country and other nearby countries. After the first ten years, the technology owner should have no objection to importation. Of course, this importation could only be prevented if the

technology owner still has unexpired patents to prevent such importation. In some situations the transferee plant could be expected to compete with the transferor in third country markets. Specific arrangements may be necessary to induce the transferor to voluntarily part with control over his technology.

VII. Conclusion

Despite negotiations involving technology transfer between developed nations and developing nations, no real increase in technology transfer has taken place. The negotiations have not really helped developing nations. Unless a program, such as that suggested by the LES, is adopted to provide incentives for technology owners to transfer their technology, it will be difficult for the developing nations to raise their standards of living.