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U.S. Software Protection: Problems of Trade Secret Estoppel under International and Brazilian Technology Transfer Regimes Note

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A fundamental tension exists between developing countries and the United States concerning the protection of technological information. The developing countries regard technological information developed in the industrialized nations as knowledge which should be in the public domain.[1] The United States protects the developers of technological information by giving them extensive intellectual property rights.[2] Since 1976, the United Nations Conference on Trade and Development (UNCTAD) has been working on a code of conduct for the international transfer of technology.[3] While the developing countries known as the Group of 77 initiated the movement at UNCTAD in order to establish their philosophy internationally,[4] specific developing countries such as Brazil already have domestically regulated the transfer of technology to increase technological information in the public domain.[5]

Despite their intent to promote the acquisition of technology, these two types of regimes—the UNCTAD international code of conduct and domestic regulation such as the Brazilian regulations—may actually jeopardize international distribution of software originating in the United States. U.S. software exporters already are showing reluctance to send software to countries where they are threatened by transfer of technology regimes.[6] Software ideas are extremely valua-

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1. See Patel, *What the Group of 77 Wanted at UNCTAD and Why,* in CURRENT INTERNATIONAL LEGAL ASPECTS OF LICENSING AND INTELLECTUAL PROPERTY 124-33 (1980)(S. Patel was Chief of the Technology Division of the United Nations Conference on Trade and Development (UNCTAD)).

2. See *infra* notes 13-20 and accompanying text.

3. United Nations Conference on Trade and Development, Draft International Code of Conduct on the Transfer of Technology [hereinafter cited as UNCTAD Code], U.N. Doc. TD/CODE TOT/1, pts. 1 & 2 (1976).

4. See *supra* note 1.

5. Normative Act No. 015 (Sept. 11, 1975) pursuant to authority granted by Law No. 5,648 (Dec. 11, 1970), *translated in* Compilation of Legal Material Dealing with Transfer and Development of Technology, U.N. Doc. TD/B/C.6/81, at 16-48 (1982).

6. At the Tenth Annual Symposium on International Licensing, Technology Transfer and Distribution, Nov. 16, 1984, sponsored by the World Trade Institute in New York, many of those attending the panel discussion on "Commercial and Legal Aspects of Software Devel-

ble,[7] and with global computer networks and transborder data flows, loss of secrecy in one part of the world can rapidly result in the disclosure of highly confidential software ideas back in the United States. Under the current state of U.S. law, trade secret protection may be lost merely by distribution of software with a licensing agreement which authorizes foreign disclosure.

This note describes the fundamental aspects of software protection and applies the requisites of U.S. trade secret protection to software. After explaining how the UNCTAD and Brazilian transfer of technology regimes apply to software licensing arrangements, this note argues that software distribution under these regimes estops U.S. trade secret protection by defeating the requisites of secrecy and competitive advantage. Specifically, the effects of the UNCTAD Draft International Code of Conduct on the Transfer of Technology (UNCTAD Code) and the Brazilian technology transfer regulations are analyzed to demonstrate the difficulties posed by legal regimes being considered and already in force in a number of developing countries. This note concludes with an analysis of some of the possibilities for protection of trade secrets with international software distribution.

I. SOFTWARE PROTECTION[8]

The term "software," often broadly defined, encompasses basically four elements: the source code, object code, terminal display and documentation. The most valuable aspect of these software elements is the underlying ideas from which they were created. The *source code* is the tangible expression of the software ideas; it consists of a series of computer instructions and algorithms written in a programming language such as BASIC, FORTRAN or C, and is intelligible to any computer programmer fluent in the language. The *object code* is the source code version converted into a language intelligible only to the computer itself; this is also referred to as machine readable code. The *terminal display* is the "external or functional ele-

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opment, Distribution and Licensing" indicated that their companies were reluctant to do business in Latin America.

7. More than 80% of the software development process is devoted to the underlying ideas. Remarks by Phillip Dorn at the American Foreign Law Association Panel Discussion on Legal Protection of American Computer Technology in International Trade, New York, at 2 (Nov. 3, 1984)(statement available from the American Foreign Law Association) [hereinafter cited as Dorn].

8. This note only applies to "industrial purpose" software distributed under a signed license agreement such as financial analysis packages, and does not apply to software for recreational or entertainment purposes, as well as relatively inexpensive, mass marketed programs like LOTUS 1-2-3.

ments"[9] of the program which appear on the computer screen and include the interactions between the user and the software. The quality of the terminal display and user interactions enhance the commercial value of the software and are a reflection of the ideas contained in the source code. Instructions for the use of the software are contained in the *documentation*. The documentation also indicates some of the underlying program structure and ideas.

Misappropriation and misuse of the software are easily and frequently effected. The simplest form of software piracy occurs whenever an individual makes a direct copy of the software. Since much of the information is stored on magnetic tape, unauthorized duplication can take place in a matter of minutes.[10] A more sophisticated misappropriation occurs when an individual obtains access to the source code, terminal display or documentation, and then uses the ideas for a competing software program. This type of misappropriation is far less expensive than original software development,[11] and yet is quite significant since the value of the software depends upon the quality of the ideas embodied in it. The software industry is estimated to be worth $19 billion worldwide,[12] and misappropriation has software developers seriously worried. A company making significant investments in software development wants to have confidence that its investments are secure and subject to minimal risk of software piracy.

For a U.S. high technology company or individual software developer, legal protection against these forms of misappropriation remains unsettled both domestically and internationally. In the United States, a software developer may protect its product by using three different forms of protection: copyright law, patent law and trade secret law.[13] Each form of protection guards against violation of spe-

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9. Gilburne & Johnston, *Trade Secret Protection for Software Generally and in the Mass Market*, 3 COMPUTER L.J. 211, 262 (1982). This unique terminology aptly describes the important visual element of software.

10. The object code almost always is stored in a manner that easily enables magnetic tape copying. This magnetic copying is significant because the object code version is the one capable of working most efficiently on the computer.

11. For example, the cost of making a duplicate tape copy is several dollars whereas the cost of developing a standard accounting program for a large corporation is approximately $3 million. *See* Dorn, *supra* note 7, at 2.

12. Remarks by Michael Keplinger at the American Foreign Law Association Panel Discussion on Legal Protection of American Computer Technology in International Trade, New York (Nov. 3, 1984).

13. *See generally* Davidson, *Protecting Computer Software: A Comprehensive Analysis*, 4 ARIZ. ST. L.J. 611 (1983)(final report prepared for the American Bar Association Computer Law Division Project entitled "The Legal Means of Protecting the Value of Information in Modern Computer Systems"); Mantle, *Trade Secret and Copyright Protection of Computer Software*, 4 COMPUTER L.J. 669 (1984)(discussion of dual protection through trade secret doctrine and copyright statutory scheme); *Final Report of the National Commission on New Tech-*

cific types of proprietary rights. *Copyrights* protect the tangible form or expression of works of authorship[14] and guard only against copying the tangible expression of the software.[15] *Patents* protect inventions and the embodiment of new and useful processes[16] and are only available to software that is part of an otherwise patentable process.[17] *Trade secret law* protects the underlying ideas[18] and is widely available for software meeting certain requirements.[19] Given the limitation that neither copyright nor patent law protects the underlying ideas embodied in software, only trade secret law gives the software developer the adequate protection against more sophisticated types of misappropriation. Trade secret law protects the software developer by giving it a right to sue the misappropriator for damages and by giving it a right to injunctive relief when the software ideas have been misappropriated.[20] Overseas, however, only the U.S. company's or programmer's rights under copyright and patent regimes are governed by international treaties and foreign law.[21]

II. APPLICABILITY OF TRADE SECRET REQUISITES TO SOFTWARE

Since state doctrine governs trade secret law in the United States, uniformity in definition does not exist.[22] The *Restatement of Torts,* however, provides a widely-used standard that a trade secret is:

> any formula, pattern, devise or compilation of information which is used in one's business and which gives him an opportunity to obtain an advantage over competitors who do not know or use it . . . .
>   The subject matter of a trade secret must be secret . . .

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nological Uses of Copyrighted Works, July 31, 1978 (1979)(recommending changes in the federal copyright statute to accommodate software protection)[hereinafter cited as CONTU].

14. *See* U.S. CONST. art. I, § 8, cl. 8; 17 U.S.C. §§ 101-801 (1982).

15. Technicon Medical Information Sys. v. Green Bay Packaging, 687 F.2d 1032, *cert. denied,* 103 S. Ct. 732 (1983).

16. *See* 35 U.S.C. §§ 1-376 (1982).

17. Diamond v. Diehr, 450 U.S. 175 (1981).

18. *See* RESTATEMENT (FIRST) OF TORTS § 757, comment b (1939).

19. *See infra* text accompanying notes 22-50.

20. Davidson, *supra* note 13, at 718; *see also* R. MILGRAM, TRADE SECRETS § 5.04 (1984)(discussion of available relief from third party use of misappropriated trade secrets).

21. *See, e.g.,* Universal Copyright Convention (as revised at Paris 1971), 25 U.S.T. 1341, T.I.A.S. No. 7868, 943 U.N.T.S. 178, Berne Convention 1886 (as revised at Paris on July 24, 1971), 828 U.N.T.S. 221; Paris Convention for the Protection of Industrial Property, Mar. 20, 1883 (as revised at Stockholm on July 14, 1967), 828 U.N.T.S. 107, T.I.A.S. No. 6923, 21 U.S.T. 1583.

22. R. MILGRAM, *supra* note 20, at § 7.02[3]; Davidson, *supra* note 13, at 729. Note also that federal patent and copyright laws do not preempt state trade secret law since the rights protected are different under each regime. CONTU, *supra* note 13, at 18; Davidson, *supra* note 13, at 750; Mantle, *supra* note 13, at 690.

> so that, except by the use of improper means, there would be
> difficulty in acquiring the information. An exact definition
> of a trade secret is not possible. Some factors to be consid-
> ered . . . are: (1) the extent to which the information is
> known outside of his business; . . . (3) the extent of the
> measures taken by him to guard the secrecy of the informa-
> tion; (4) the value of the information to him and to his com-
> petitors; (5) the amount of effort or money expended by him
> in developing the information; (6) the ease or difficulty with
> which the information could be properly acquired or dupli-
> cated by others.[23]

In his treatise, Roger Milgram usefully characterizes the key elements of the *Restatement* definition as commercial use or value, novelty, competitive advantage, and secrecy.[24]

Information classified as a trade secret may be disseminated in the United States or elsewhere without losing that classification, pro-vided that confidentiality is preserved through the sale, license, or lease agreement. In *Kewanee Oil Co. v. Bicron*,[25] Chief Justice Burger wrote that a trade secret continues to qualify for protection when it is revealed in confidence. Since the recipient of confidential knowledge often gains it pursuant to a license agreement, the license agreement defines the conditions under which the information is disclosed. If confidentiality is lost and the information becomes public knowledge, then trade secret protection is inapplicable. A license agreement thus plays a vital role in establishing the necessary confidential relationship between the software developer and the software user. The license agreement also helps in establishing that the other requisites for trade secret protection are satisfied, such as a clause acknowledging infor-mation which would demonstrate a competitive advantage.

The ideas used to create software represent subject matter which can be protected by U.S. trade secret law.[26] The commercial value element to trade secrets means that the idea must actually have been used in trade or business so that the usefulness of the idea is not just speculative.[27] Once the software developer plans the program and writes a flow chart, the ideas can become valuable. After the software is created, the license agreement shows that the value is not just spec-

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23. RESTATEMENT (FIRST) OF TORTS § 757, comment b (1939). While the RESTATE-MENT (SECOND) OF TORTS (1974) omits the section on trade secrets, state courts continue to use the first *Restatement's* standards. *See* R. MILGRAM, *supra* note 20, at § 2.01.

24. R. MILGRAM, *supra* note 20, at app. A1-4—A1-6.

25. 416 U.S. 470, 475 (1974).

26. For a list of cases, see R. MILGRAM, *supra* note 20, at app. A1-1, A1-6.

27. *See* R. MILGRAM, *supra* note 20, at § 2.02.

ulative, because the agreement itself evidences the existence of a productive use for the software.

The uniqueness of any given software satisfies the novelty requirement for trade secret protection.[28] A computer program is rarely entirely "new" in the sense that it uses a newly-created technique or language.[29] More often than not, programmers adapt similar codes written in the past to new requirements.[30] This reworking, however, represents the essence of "new" software. The new combination of past techniques may result in an unprecedented set of external elements (such as input/output interactions, data flow, on-line assistance)[31] or may result in a program which runs more efficiently. U.S. courts have found that a new combination of algorithms, processes, or external elements can satisfy the trade secret "novelty" requirement. In *Dickerman Associates v. Tiverton Bottled Gas Co.,*[32] the court found a software menu display[33] to be a trade secret where "some of the screens are mandated by the needs of the market, [but] the particular combination of procedures used in plaintiff's system . . . are neither obvious nor easily duplicated."[34] Other courts have used the uniqueness theory and approved new combinations of general concepts for trade secret protection.[35]

The competitive advantage element is an alternative to the novelty requirement. There are two approaches to this doctrine: research and development investment or a "headstart" temporal criteria.[36] The software developer's investment of time, effort or money in creating software which has a competitive edge over other software fulfills the research and development test of competitive advantage.[37] Since software development is labor intensive, the results of research and development lose their competitive edge if either the

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28. This novelty requirement is not as strict as that required for a patent. R. MILGRAM, *supra* note 20, at § 2.08. A patent is not permissible for "novel and useful mathematical formulas." CONTU, *supra* note 13, at 17.

29. Dorn, *supra* note 7, at 3.

30. *Id.*

31. For a list of external elements, see Gilburne & Johnston, *supra* note 9, at 262.

32. 594 F. Supp. 30 (D. Mass. 1984).

33. The menu display is the set of choices presented to the user for selection of the functions and tasks to be performed. The number and type of choices, as well as the form of presentation, are entirely structured by the author of the software.

34. 594 F. Supp. at 35.

35. Cybertek Computer Products v. Whitfield, 203 U.S.P.Q. 1020, 1024 (Cal. Super. Ct. 1977); Com-Share, Inc. v. Computer Complex, 338 F. Supp. 1229, 1234 (E.D. Mich. 1971). *But c.f.* Jostens, Inc. v. National Computer Sys., 318 N.W.2d 691, 698-700 (Minn. 1982)("Mere variations in general processes known in the field which embody no superior advances are not protected.").

36. R. MILGRAM, *supra* note 20, at A1-6.

37. Computer Print Sys. v. Lewis, 281 Pa. Super. 240, 422 A.2d 148 (1980).

results become public information or independent discovery leads someone else to the same results. A loss of the competitive edge defeats competitive advantage based on research and development. The "headstart" theory of competitive advantage grants trade secret protection based on prior development; in other words, protection is available for the duration of the "headstart" in development of software easily developed independently.[38] In this instance too, the labor intensive nature of software development necessitates a loss of the headstart as soon as the software ideas become public, and a reduction in the duration, if not the elimination, of the headstart as the ideas are otherwise discovered. Any loss or significant reduction of the headstart defeats the competitive advantage element of the software.

In all cases, the software developer must maintain secrecy or take measures to guard the secrecy of the information in order to have protection.[39] Secrecy is especially important where misappropriation or disclosure cannot be confined to one jurisdiction.[40] If the software developer reveals essential details of the software, trade secret protection is jeopardized. While there can be no effective disclosure of the object code for trade secret purposes, since the object code is unintelligible to a programmer,[41] disclosure of the source code, the external elements or the documentation would reveal the underlying ideas and destroy the secrecy requirement of trade secret protection.[42] Similarly, if the ideas are independently discovered by a third party, the secrecy element automatically is defeated.[43]

Since software creation is labor intensive, secrecy and competi-

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38. *E.g.* Winston Research Corp. v. Minnesota Mining & Mfg., 350 F.2d 134, 142 (9th Cir. 1965)("the approximate injunction period is that which competitors would require after public disclosure [of confidential information] to develop a competitive machine"); Analogic Corp. v. Data Translation, 358 N.E.2d 804, 808 (Mass. 1976)("plaintiff is entitled to have its trade secrets protected at least until others in the trade are likely through legitimate business procedures to have become aware of these secrets").

39. RESTATEMENT (FIRST) OF TORTS § 757, comment b (1939); Telex Corp. v. IBM Corp., 510 F.2d 894 (10th Cir. 1975); Davidson, *supra* note 13, at 723; Jostens v. National Computer Sys., 318 N.W.2d 691, 700 (Minn. 1982); Electro-Craft Corp. v. Controlled Motion, 332 N.W.2d 890, 901 (Minn. 1983).

40. For example, even if software is disclosed or illegally copied overseas, international computer networks make it impossible to prevent access to the software from the United States.

41. Since the object code is unintelligible to a programmer, it cannot be disclosed in the sense of becoming "widely known." It is, nonetheless, conceivable that making the object code available would make it subject to disassembly or decompiling and hence directly cause the source code to become public.

42. For a discussion of ideas embodied in the source code, external elements and documentation, see *supra* text following note 8.

43. RESTATEMENT (FIRST) OF TORTS § 757, comment b (1939).

tive advantage are interrelated. Loss of secrecy for a software idea eliminates both the competitive edge achieved through research and development and the headstart of prior development. Yet, competitive advantage is also relinquished at the moment software is revealed in confidence without restrictions on the use of the software ideas. Permission for unrestricted use waives the value of a software developer's research and development as well as his or her headstart.

Notwithstanding the secrecy requirement, the software developer may make limited public disclosures without defeating trade secret protection as long as confidentiality and restrictions on use are a condition of such disclosures.[44] These measures usually take two forms: practical methods for preserving secrecy and contractual restraints imposed on customers receiving copies of the software.[45] The practical methods involve mechanisms incorporated directly into the software, such as special encryptions which prevent unauthorized copying or use on an unauthorized computer.[46] The contractual restraints on customers entail license agreements with a series of restrictions on copying, use, access and disclosure.[47] Typical contract provisions forbid the licensee to: make copies of the software (except for a back-up); use the software on more than one computer; disclose information about the software except to the licensee's employees or customers who have signed confidentiality agreements and need to use the software in the course of their employment or business; transfer the software; make modifications or adaptations for purposes other than the licensee's own use in an updated version of the software; and keep the software upon termination of the agreement.[48] Each of these restrictions acts as proof that the software developer took the requisite steps to guard the secrecy of the software[49] and in fact defines the necessary confidential relationship. The license agreement also enables the software developer to have a breach of contract claim as well

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44. Data General Corp. v. Digital Computer Controls, 357 A.2d 105, 108, 110-11 (Del. 1975); *see* Davidson, *supra* note 13, at 725. The disclosure based on confidentiality might be either to an employee or to a customer. Kewanee Oil Co. v. Bicron Corp., 416 U.S. 470, 475 (1974). The principle applies equally to both, though the basis for the relationship is different and additional restrictions will apply. With respect to object code, confidentiality restrictions create an obligation not to attempt to learn or disassemble the software. Davidson, *supra* note 13, at 726.

45. Gilburne & Johnston, *supra* note 9, at 225.

46. *Id.* at 225-26. It should also be noted that no practical method is foolproof.

47. *Id.* at 225; Davidson, *supra* note 13, at 724-25.

48. Gilburne & Johnston, *supra* note 9, at 225; Davidson, *supra* note 13, at 724-25; *see also* Agreement for IBM Licensed Programs (standard form contract available from International Business Machines, Armonk, N.Y.).

49. *See supra* note 47.

as a trade secret tort claim.[50] Hence, the license agreements permit a software company or individual developer to transfer possession of the software without losing protection of the intellectual property.

III. THE TECHNOLOGY TRANSFER REGIMES

A. *UNCTAD International Code of Conduct on the Transfer of Technology*

For almost a decade, UNCTAD has sought international guidelines for technology transfer transactions. The UNCTAD Code represents the general trend and philosophy of the developing countries toward technology transfer and corresponding license agreements. While the fifth negotiation session in 1983 did not resolve all of the UNCTAD Code's outstanding issues,[51] a sixth negotiation session will be convened during the first quarter of 1985.[52]

Members of UNCTAD intend the UNCTAD Code to apply to all technology transfers and not just to those between a supplier from a developed country and an acquirer from a developing country.[53] All technology exports from the United States would be affected by this regime. Although the UNCTAD Code is presently designed to become a United Nations resolution and not a treaty, unsettled provisions might require a review after four or six years in order to bring about "universal application as a legally binding instrument."[54] Even without the UNCTAD Code ever having treaty force, U.S. software exporters might still be bound by its provisions as evidence of customary international law.[55] Nonetheless, prior to any possible implementation as a binding instrument, the UNCTAD Code directs that states "should take appropriate steps at the national level to meet their commitment to the Code."[56] Since the Group of 77 countries first pro-

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50. Mass marketing and wide distribution of software, however, places the effect of these confidentiality agreements in some doubt. *See* Davidson, *supra* note 13, at 726-27.

51. G.A. Res. 153, U.N. Doc. TD/CODE TOT/40 (1983); Roffe, *UNCTAD: Transfer of Technology Code Fifth Session of the U.N. Conference*, 18 J. WORLD TRADE L. 176 (1984).

52. G.A. Res. 153, U.N. Doc. TD/CODE TOT/40 (1983).

53. International Code of Conduct on the Transfer of Technology: Recommendations by the Secretary-General of UNCTAD and the President of the United Nations Conference on an International Code of Conduct on the Transfer of Technology on issues outstanding on the draft Code of Conduct, U.N. Doc. TD/CODE TOT/38, at 1 (1983).

54. UNCTAD Code Ch. 8.3, U.N. Doc. TD/CODE TOT/41, app. E (1983).

55. The texts under consideration for the UNCTAD Code Preamble, paragraphs 11-13, each support the interpretation that an international norm of conduct has evolved over the last decade of negotiations. Even the regional group proposal from the industrialized nations describes the document as setting forth guidelines for the international transfer of technology. *See* UNCTAD Code Preamble, U.N. Doc. TD/CODE TOT/41, apps. A & B (1983).

56. UNCTAD Code Ch. 8.1(c), U.N. Doc. TD/CODE TOT/41, at 19 (1983).

posed the UNCTAD Code, it is likely that this group's member states will continue to adopt similar national legislation. Consequently, the impact of the UNCTAD code will be felt by U.S. software exporters at the local level. The UNCTAD Code, in any event, will establish an "international institutional machinery" to seek compliance and monitor technology transfers.[57]

The UNCTAD Code sets forth rights and obligations for the software supplier and software acquirer.[58] The UNCTAD Code defines transfer of technology as "the transfer of systematic knowledge for the manufacture of a product, for the application of a process or for the rendering of a service and does not extend to the transactions involving the mere sale or mere lease of goods."[59] The definitions explicitly state that "the provision of know-how and technical expertise in the form of . . . instructions"[60] also are considered technology under the UNCTAD Code. This definition of know-how includes trade secrets[61] and software since they are essentially confidential instructions. Chapter 5.4 of the UNCTAD Code, which remains unsettled, would obligate the acquiring party to maintain "confidentiality including its scope and duration and the use of any assets like trade secrets."[62] This obligation would apply to the software recipient, but Chapter 4 limits the technology or software supplier from including restrictive practices in the license agreement. Though the list and description of restrictive business practices is still being revised, the licensor may not impose restrictions on research precluding absorption of the transferred technology in new products, restrictions on adaptations of the imported technology, a requirement of exclusive dealing, restrictions after expiration of the arrangement, and unlimited or unduly long duration of arrangements.[63] The current text leaves the international legal effect of prohibiting the enumerated practices at issue by retaining a choice of language between "shall [and] should refrain" from the restrictive practices[64] as well as maintaining disagreement on the heading for the list of practices.[65] Yet these limitations nonetheless circumvent the scope and duration of the confidentiality obligation. Until the Group of 77 is satisfied with the progress toward

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57. UNCTAD Code Ch. 8.2, U.N. Doc. TD/CODE TOT/41, at 19 (1983).

58. UNCTAD Code Ch. 2.1(x), U.N. Doc. TD/CODE TOT/41, at 5 (1983).

59. UNCTAD Code Ch. 1.2, U.N. Doc. TD/CODE TOT/41, at 2 (1983).

60. UNCTAD Code Ch. 1.3(b), U.N. Doc. TD/CODE TOT/41, at 2 (1983).

61. Blair, *Overview of Licensing and Technology Transfer*, 8 N.C. J. INT'L L. & COM. REG. 167, at 173 (1983).

62. UNCTAD Code Ch. 5.4(ii), U.N. Doc. TD/CODE TOT/41, app. A at 2 (1983).

63. UNCTAD Code Ch. 4, U.N. Doc. TD/CODE TOT/41, app. A at 2 (1983).

64. UNCTAD Code Ch. 2.1(ix), U.N. Doc. TD/CODE TOT/41, at 4 (1983).

65. UNCTAD Code Ch. 4, U.N. Doc. TD/CODE TOT/41, at 8 (1983).

completion of the list of restrictive business practices (meaning that the list adequately limits the scope and duration of any confidentiality obligation), it will object to the confidentiality clause in the UNCTAD Code.[66]

One other dispute under the UNCTAD Code highlights the need to examine an example of how a foreign country's national regulations affect the software license agreement. The UNCTAD Code's definition of "international transfer" remains unresolved. While the code would apply to all transactions crossing national boundaries (including transfers between parent and subsidiary companies), there is disagreement as to whether the code should apply to transactions within a developing country between companies under foreign control.[67] Software distribution might be made through transactions by a subsidiary in the foreign country.[68] Any form of distribution, of course, will always be subject to additional national regulations (export as well as import regulations).[69] Hence, it is worthwhile to look at a domestic regulatory regime.

B. Brazilian Transfer of Technology Regime

Brazil is an important example of a developing country with a technology transfer law. Brazil is estimated to rank "between seventh and tenth in the world computer market"[70] and has recently issued regulations concerning the importation of software.[71] Brazil is also a leader in the Group of 77, so its actions are watched by fellow developing nations.[72]

In Brazil, the government permits access to the computer market only for those agreeing to the transfer of technology.[73] The National

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66. *See* Roffe, *supra* note 51, at 181.

67. UNCTAD Code Ch. 1.4, U.N. Doc. TD/CODE TOT/41, app. C (1983).

68. International distribution with a Multinational Corporation is not immune from application of these provisions.

69. *See, e.g.,* UNCTAD Code Ch. 3, U.N. Doc. TD/CODE TOT/41, at 6 (1983) (permissible state regulations under the UNCTAD Code regime).

70. TIGRE, TECHNOLOGY AND COMPETITION IN THE BRAZILIAN COMPUTER INDUSTRY 5 (1983).

71. Normative Act No. 22 (Dec. 7, 1982), 1983 Vade-Mecum Forense 1854, *translated in* Daniel, *Notes from Brazil,* 82 PAT. & TRADEMARK REV. 97, 108-11 (1984) [hereinafter cited as Normative Act No. 22].

72. D. BENDER, LEGAL ASPECTS OF SOFTWARE LICENSING § VIII (1984) (unpublished manuscript).

73. Castro, *The Computer Industry: Restrictions and Performance Requirements,* in HIGH TECHNOLOGY INDUSTRIES: PROFILES AND OUTLOOKS OF THE COMPUTER INDUSTRY 55 (published by the U.S. Dept. of Commerce, 1983). Brazil has created a "reserved market" to encourage and to give preferential treatment to the domestic informatics industry. Business Latin America, Aug. 15, 1984, at 262, col. 1. A bill recently passed by the legislature maintains this policy for eight more years. Though the new law makes it harder to qualify for

Industrial Property Institute (INPI), established as an agency of the Ministry of Commerce and Industry, originally was given the authority to regulate technology transfers.[74] Though know-how and trade secrets were never defined or identified in the statute establishing INPI, they did receive protection through license agreements to furnish technology.[75] In 1979, however, Brazil established the Special Secretariat for Informatics (SEI) to regulate the in-flow of computer technology[76] and in 1982 SEI promulgated Normative Act No. 22 which expressly requires registration of computer programs "made available to the public in the Brazilian marketplace."[77] According to the regulation, registration is required for all software "intended for use . . . in Brazilian territory."[78] This requires registration for commercial distribution as well as distribution within a multinational corporation. Until 1984, SEI had policy-making authority as well as administrative control over registration; now policy-making rests with the National Council of Informatics and Automation (CONIN).[79] In addition to registration with SEI, any software transfer agreement must be recorded with the INPI.[80]

Normative Act No. 22 provides that SEI must approve any "agreements involving computer programs."[81] Among the restrictive practices forbidden by SEI in the transfer agreements are: restrictions after expiration of the agreement; restrictions after expiration of industrial property rights; restrictions on research and development; restrictions to the access of new technology; restrictions on use of personnel; and restrictions on distribution or sales.[82] Brazil desires to make these contractual provisions illegal and claims that unpatented,

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permission to import computer products and changes the policy-making apparatus, it does not change the terms of transfer agreements. Business Latin America, Oct. 10, 1984, at 321, col. 1.

74. *See supra* note 5.

75. Comment, *Proprietary Protection of Computer Software in the United States and Brazil,* 19 TEX. INT'L L.J. 643, 665 (1984).

76. Decree No. 84,067 of Oct. 8, 1979.

77. Normative Act No. 22, *supra* note 71, at Preamble.

78. *Id.* at art. 1.

79. Business Latin America, Oct. 10, 1984, at 321, col. 1. Despite the recent shift in policy-making authority, Normative Act No. 22 is still controlling.

80. Normative Act No. 22, *supra* note 71, at art. 3. INPI will not record any document claiming to be a license agreement for trade secrets, though it will record a "transfer" agreement for trade secrets. *See* Comment, *supra* note 75 (discussion of various Brazilian requirements for registering patent, copyrights and trade secrets under Brazilian law).

81. Normative Act No. 22, *supra* note 71, at art. 5(b).

82. Correa, *Transfer of Technology in Latin America: A Decade of Control,* 15 J. WORLD TRADE L. 388, 403 (1981). Restrictions after expiration enable confidentiality requirements to survive the duration of any license or transfer agreement. Restrictions on access and distribution are also used to guard the secrecy of the software. Restrictions on research and development hinder the independent discovery of the software ideas. Brazil is trying to prevent these protective measures.

technological information should become freely available to all Brazilians as soon as possible.[83] Yet these are contractual restrictions which are always requested by the software-supplying party and are important for maintaining U.S. trade secret protection. The Normative Act also stipulates that registration of the software is only valid for two years.[84] No provision of the Normative Act discusses the validity of a transfer agreement beyond the expiration of the two year registration period. This time limitation increases the risk that the software will lose all protection, not just U.S. protection, before it becomes obsolete.[85] The Normative Act and SEI registration requirements have made many U.S. software exporters reluctant to do business in Brazil.

IV. EFFECT OF TECHNOLOGY TRANSFER REGIMES ON U.S. TRADE SECRET PROTECTION

A. *The Estoppel Impact on the Key Elements*

Aside from their effect overseas, the UNCTAD Code and the Brazilian transfer of technology rules estop U.S. trade secret protection. The impact of the two regimes on license agreements defeats the applicability of competitive advantage and secrecy to software in the United States. The trade secret requirements of novelty and commercial value remain unaffected, since these tests relate to software characteristics at the time of misappropriation and not to the distribution relationship governed by the technology transfer regimes.

1. Competitive Advantage

Under the UNCTAD Code, a U.S. company exporting software loses any previously existing competitive advantage. UNCTAD Code Chapter 4 will prohibit license restrictions on research directed to the absorption of the software in new products[86] and restrictions on adaptations[87] of the software. Requiring permission for fair use would eliminate the value of the software developer's investment by significantly reducing the difficulty of independent discovery of the information (software ideas) and therefore eliminate the competitive edge requirement of the research and development test.[88] Similarly, the required permission for fair use would vitiate any headstart obtained

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83. Comment, *supra* note 75, at 665. This attitude reflects the opinion of other developing countries. *See generally* Patel *supra* note 1.

84. Normative Act No. 22, *supra* note 71, at art. 6.

85. *See generally* Comment *supra* note 75 (discussion of Brazilian protection).

86. UNCTAD Code Ch. 4.4, U.N. Doc. TD/CODE TOT/41, at 9 (1983).

87. UNCTAD Code Ch. 4.7, U.N. Doc. TD/CODE TOT/41, at 9 (1983).

88. *See supra* text accompanying notes 36-38.

by prior development and would defeat this theory of competitive advantage.[89] Although the components of software are affected differently by the fair use requirement of the UNCTAD Code, the U.S. exporter will suffer loss of competitive advantage for each component. While it is most unlikely that the source code version of the software will be exported, if research is permitted on the object code version, the source code ideas will be ascertained quickly. Likewise, where the terminal display or external functions of the software can be adapted easily for use in other circumstances, fair use essentially will give away an important part of the software's value.

The Brazilian technology transfer regulations cause a similar loss of competitive advantage. The restrictive practices forbidden in Brazilian technology transfer agreements parallel the UNCTAD Code's required fair use. By requiring authorization for research on and access to transferred technology, Brazil facilitates the independent discovery of the software ideas. This defeats the necessary competitive edge condition and automatically estops a headstart claim by negating the value of the headstart at the time of transfer. Also, like the UNCTAD Code, the Brazilian regime affects the various elements of software differently. Since Brazil requires that permission be granted to conduct research on the software, a foreign company cannot effectively preserve the advantage of a major investment in source code ideas by distributing only the object code; the object code can be deciphered very quickly.

The only significant difference between the Brazilian regime and the UNCTAD Code in their threats to competitive advantage is that the external functions of the software might be subjected to a smaller risk under the Brazilian regime. The Brazilian regime requires that access to the technology not be restricted,[90] rather than requiring that permission be granted for adaptations as found in the UNCTAD Code.[91] Unrestricted access only indirectly threatens the investment value and the headstart advantage of the external functions of the software by enabling others to observe the terminal display. Permissible adaptations directly threaten the worth of the investment and headstart since development of the external functions is labor inten-

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89. If the entire headstart is not lost, then perhaps the competitive advantage should still exist. If the headstart is not waived implicitly by fair use permission, then certainly it is drastically compromised since the doctrine protects the trade secret "for the length of time it is estimated to take someone not having access to the trade secret to recreate the same program." Davidson, *supra* note 13, at 720. Fair use would radically shorten if not eliminate that time lag.

90. *See supra* note 82 and accompanying text.

91. *See supra* note 63 and accompanying text.

sive. The overall result, however, is the same; grants of permission for research and development and access to the technology waive or eliminate the competitive advantage of investment and headstart.

2. Secrecy

The UNCTAD proposal would preclude distribution of software under a license agreement with a sufficiently high level of secrecy to maintain trade secret protection. As previously discussed, license provisions restricting disclosures and the permissible uses of the software are needed to insure adequate secrecy.[92] In Chapter 4, the UNCTAD Code considers limits on the duration of any license agreement without reference to confidentiality of trade secrets upon termination of the agreement,[93] and might deny post-termination restrictions on the licensee.[94] An obligation not to disclose software information must survive the term of the license agreement for the software developer to guard the secrecy of distributed software, but the proposed texts of Chapter 4.14 are in effect a "catch-22."[95] A continuing obligation of confidentiality is allowed only if the software ideas are still secret, yet the software ideas cannot remain secret without continuing confidentiality beyond the term of the license agreement. The degree to which non-disclosure may be maintained during the term of any agreement also is limited by the UNCTAD Code prohibition against restrictions on research and adaptations.[96] By banning a license clause which restricts attempts at object code disassembly and limits adaptations, the licensee can readily ascertain the software ideas and then make them public. These same prohibitions would preclude enforceable covenants against appropriation of the external elements of the software. In essence, software distribution under a regime based on the proposed UNCTAD Code would allow legitimate public disclosure of trade secrets by the technology-acquiring party.[97]

If the disclosure by the technology acquiring party occurs outside the United States, the U.S. software developer probably will suffer the same consequences as though the disclosure were made in

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92. *See supra* text accompanying notes 44-50.

93. UNCTAD Code Ch. 4.20, U.N. Doc. TD/CODE TOT/41, app. D, at 2 (1983).

94. UNCTAD Code Ch. 4.14, U.N. Doc. TD/CODE TOT/41, app. D, at 1 (1983).

95. The Group of 77 proposal prohibits "restrictions on the use of the technology after expiration or termination of the arrangement or after the know-how has lost its secret character independently of the acquiring party." UNCTAD Code Ch. 4.14, U.N. Doc. TD/CODE TOT/41, app. D, at 1 (1983).

96. UNCTAD Code Ch. 4.4, U.N. Doc. TD/CODE TOT/41, at 9 (1983).

97. Even international distribution within a multinational corporation is not immune from the application of these provisions.

the United States. The U.S. trade secret doctrine does not appear to have a geographic limitation to public knowledge.[98] Moreover, even if the knowledge had to be public in the United States before the secrecy requirement was defeated, practically speaking, disclosure overseas can lead to instantaneous disclosure in the United States through computer telecommunications.[99] Constructive disclosure in the United States would occur and should satisfy any constructive condition that the information be public in the United States. Thus, the UNCTAD Code defeats the required effort to guard the secrecy of the information.

The Brazilian situation is similar. The duration of any software transfer agreement probably is limited to two years and restrictions imposed upon the transfer cannot exceed the term of the agreement.[100] Hence, there can be no continuing obligation of non-disclosure and confidentiality, nor effective confidentiality for the lifetime of the software.[101] With mandatory permission for research and access to the acquired technology,[102] there can be no obligation against disassembly. Secrecy of the software ideas therefore cannot be maintained by distributing the object code only. The personnel access allowed under the Brazilian regime[103] also raises the possibility that an employee may be permitted to divulge the confidential information without breaching the transfer agreement.[104] This possibility is an important aspect if any local arrangement is used since the developer may not maintain control over the local distributor.[105] If the software ideas were disclosed legitimately in Brazil, a U.S. software exporter would not have any basis to claim that secrecy was guarded adequately in the United States.[106] Since there is effective disclosure in the United States once the software information becomes public in Brazil, submission to the Brazilian statutory scheme will estop a claim that secrecy was guarded.[107]

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98. *See* RESTATEMENT (FIRST) OF TORTS § 757, comment b (1939). No geographic restrictions are mentioned, and case support is lacking for a geographic test.

99. Once the software idea is exposed and stored on a timesharing computer, access to the computer and hence the software idea can be effected worldwide.

100. *See supra* notes 82 & 84 and accompanying text.

101. Industrial purpose software should not become obsolete within two years.

102. *See supra* note 82 and accompanying text.

103. *Id.*

104. *See generally* Davidson, *supra* note 13 (discussion of employee obligations not to disclose trade secrets); Gilburne & Johnston, *supra* note 9 (discussion of employee implied covenant of non-disclosure). These doctrines, however, govern an employee's obligations in the United States and do not address the obligations of employees in Brazil.

105. *See supra* note 82 and accompanying text.

106. *See supra* text accompanying notes 98 & 99.

107. It is possible to argue that the statutory disclosure should not preclude trade secret

B. Mitigating the Estoppel of Trade Secret Protection

The acceptance of estoppel of U.S. trade secret protection either by the UNCTAD Code or the Brazilian regime would have a devastating effect on the progress of technology transfers. The business impact would be felt in either of two ways: the price of the software would be increased abroad to reflect the loss of the trade secret or the software would not be distributed in the foreign country.[108] Each of these possibilities inhibits socio-economic development for those developing countries seeking industrialization. As the number of countries enacting national technology transfer laws grows,[109] the stifling effect on software distribution will increase.

U.S. foreign policy objectives concerning technology transfer do not help one in attempting to avoid estoppel on policy grounds. The United States has recognized political, institutional and economic reasons to participate in the regulation of technology transfers to the developing world.[110] While the United States desires equitable and effective technology transfers,[111] the U.S. commitment is also to a technology transfer environment that is beneficial for U.S. firms seeking to do business abroad.[112] The United States recognizes the need for an international consensus on technology transfer and recognizes that compromises are necessary.[113] Nevertheless, within this framework, a U.S. court's rejection of trade secret estoppel would clash with U.S. foreign policy objectives.

A mitigating doctrine might be constructed from the emerging business practice in which software developers who license their products abroad make gentlemen's agreements with their licensees that the licensees will not assert their full rights under their country's laws.[114]

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protection since dual protection is permissable and copyright protection requires public disclosure. *See generally* Mantle *supra* note 13. But the copyright law has adopted special techniques to prevent public disclosure of software secrets. *See* Davidson, *supra* note 13, at 736-43.

108. *See supra* note 6.

109. Already Colombia, Ecuador, Mexico, Peru and Venezuela have technology transfer laws. *See generally* Correa, *supra* note 82; Control of Restrictive Practices in Transfer of Technology Transactions: Selected Principal Regulations, Policy Guidelines and Case Law at the National and Regional Levels, U.N. Doc. TD/B/C.6/72 (1982).

110. *See* Lehner, *What the Developed Countries Want at UNCTAD*, in CURRENT INTERNATIONAL LEGAL ASPECTS OF LICENSING AND INTELLECTUAL PROPERTY 20, 20-21 (1980) (G. Lehner was an Attorney Advisor in the Office of the Legal Advisor of the U.S. Department of State).

111. *Id.* at 22.

112. *Id.* at 23.

113. *Id.* at 23-24.

114. Remarks by Roger Milgram at the American Foreign Law Association Panel Discussion on Legal Protection of American Computer Technology in International Trade, New York (Nov. 3, 1984).

This practice can work only when the licensee has an on-going relationship with the licensor. The situation is only a technical estoppel because the technology transfer code creates rights that if exercised would estop trade secret protection even though continued secrecy and competitive advantage in practice would indicate that the software is still a trade secret. When the estoppel is only technical, the relative secrecy and competitive advantage which remain are not functions of the software developer's required efforts to guard the secrecy of the information,[115] but rather functions of the licensee's choice.[116] The legal effect of technical estoppel should not be any different from an actual estoppel which occurs when secrecy and competitive advantage are not maintained. It is distribution under the UNCTAD or Brazilian technology transfer regime which defeats the secrecy requirements.

V.   PROPOSALS FOR SOLUTIONS TO ESTOPPEL

Given that estoppel of U.S. trade secret protection would have a devastating effect on world software trade, it is important to find a solution that will provide adequate protection for internationally distributed software. An obvious solution would be the adoption of a treaty specifically protecting software ideas in international trade. The World Intellectual Property Organization has proposed a Draft Treaty for the Protection of Computer Software[117] which would circumvent the pitfalls of the technology transfer regimes by establishing global protection for software ideas. Unfortunately, the treaty faces such strong opposition that it has been abandoned for the time being[118] with little hope of resurrection. Two other approaches might improve the situation for U.S. software exporters. The first is an attempt by the United States to seek modifications in the UNCTAD Code and the Brazilian regime; while the second is an attempt by the United States to enhance domestic protection.

A.   *The Modification Approach*

An alternative to an international treaty specifically for software protection is to encourage changes in the UNCTAD Code and the Brazilian regime so that international transfers of software do not preclude the U.S. software exporter from taking measures to guard the

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115. *See supra* notes 39-50 and accompanying text.
116. From a practical standpoint, the licensee might be so dependent upon its continuing relationship with the licensor that it would have little choice in the matter.
117. WIPO, LPCS/II/3 of Feb. 24, 1983, *partially reprinted in WIPO: Legal Protection of Computer Software*, 17 J. WORLD TRADE 537, 544 (1983).
118. *Id.*

software's secrecy and from having a competitive advantage. Unfortunately, these necessary changes contradict the developing countries' objective of complete technology acquisition.[119] The likelihood of successfully modifying either the UNCTAD Code or the Brazilian regime is therefore small. Nevertheless, it is worthwhile to examine how the two could be modified in case the developing countries find that they have completely closed their borders to desired foreign software.

1. The UNCTAD Code

While provisions in Chapter 4 of the UNCTAD Code invalidate the competitive advantage requirement for U.S. trade secret protection,[120] several modifications and accepted interpretations of the textual language could avoid the issue. The developed nations have proposed prefacing the description of the prohibited restrictions on research with the term "unreasonable"[121] so that reasonable restrictions on research would be permissible. The developed nations have also requested that reasonable restrictions on adaptations be permitted.[122] UNCTAD has thus far rejected these proposals. If these proposals are accepted, and if restrictions on software use[123] are considered reasonable, then the value of a competitive edge from research and development or the "difficulty with which the information could be properly acquired"[124] would not be defeated. In addition, the headstart obtained by the investment expense would not be foregone.

The addition of a reasonableness standard in Chapter 4 would also help solve the secrecy problem otherwise created by the UNCTAD Code. Reasonable restrictions on research and adaptations would strengthen the compromise language for the Chapter 5 confidentiality obligation[125] and enable confidentiality to survive adequately the termination of the license agreement. A U.S. software exporter would thus be able to maintain the required secrecy for the software ideas and would not suffer loss of trade secret protection through legitimate public disclosure of those ideas by the software importer.

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119. *See generally* Patel *supra* note 1.
120. *See supra* text accompanying and preceeding notes 86-89.
121. UNCTAD Code Ch. 4.4, U.N. Doc. TD/CODE TOT/41, at 9 (1983).
122. UNCTAD Code Ch. 4.7, U.N. Doc. TD/CODE TOT/41, at 9 (1983).
123. These restrictions include the obligation not to attempt to decipher the object code and not to incorporate the external functions of the software into other software.
124. RESTATEMENT (FIRST) OF TORTS § 757, comment b (1939).
125. UNCTAD Code Ch. 5.4(ii), U.N. Doc. TD/CODE TOT/41, app. A, at 2 (1983). This text has not yet been accepted by the Group of 77. *See generally* Correa, *supra* note 82.

A further modification of the UNCTAD Code that might help defeat U.S. trade secret estoppel is the selection of the UNCTAD president's proposal for the choice of applicable law. This text for Chapter 9 of the UNCTAD Code would enable the parties to choose which nation's laws would apply to the contractual relationship.[126] Under the recommended language, the selection of applicable law may not derogate from inalienable international rights or inalienable rights under the laws of either the acquiring or supplying country.[127] As long as the ban on the restrictive practices listed in Chapter 4 of the UNCTAD Code is not considered inalienable, however, the parties to a software transaction could agree to U.S. contract law and thus preserve trade secret protection. The alternate texts for the choice of law provision provide that the public policy of either party's country would be controlling against the choice of law.[128] This language would preclude a U.S. software exporter from maintaining trade secret protection since it is the expressed policy of the developing world to acquire technology without restraints.[129]

It is an unlikely scenario that enough of these modifications will be accepted at the Sixth Session of the Conference in 1985 to save U.S. software exporters from losing their U.S. trade secret protection. The nature of these changes directly addresses a crucial and sensitive issue in technology transfer, and the developing countries are not likely to compromise their fundamental desire for placing technological information in the public domain after nearly ten years of UNCTAD debate. As a result, trade secret protection in the United States for internationally distributed software will remain estopped.

2. The Brazilian Regime

A U.S. software exporter would require modifications to the Brazilian regime similar to those proposed for the UNCTAD Code if the U.S. trade secret requirement of competitive advantage is to be satisfied. Brazil would have to accept restrictions on access to the software ideas through restrictions on research and development of the transferred software.[130] These restrictions are essential so that the U.S. software exporter does not lose the competitive edge by eliminating "the difficulty with which the information could be properly acquired."[131] If Brazil accepts these restrictions in software licenses, the

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126. UNCTAD Code Ch. 9.1, U.N. Doc. TD/CODE TOT/41, app. A, at 3 (1983).
127. *Id.*
128. *Id.* at app. F.
129. *See* Patel *supra* note 1.
130. *See supra* note 123.
131. RESTATEMENT (FIRST) OF TORTS § 757, comment b (1939).

U.S. software exporter would not lose the investment headstart either.

Brazil must also change its rules that preclude secrecy of software ideas. The two year duration for software registration is too short. The contracting parties should have freedom to contract for a duration based on the expected lifetime of the software. At least five or ten year contracts should be permissible. In addition, Brazil must allow for confidentiality of the software ideas beyond the term of the contract. Again, Brazil will have to permit prohibitions on research and development that might expose software ideas contained in the object code. This is a necessary condition for guarding secrecy. Finally, Brazil needs to allow some restrictions on access to the software by personnel as another step enabling the U.S. software exporter to assert that the necessary measures were taken to guard the secrecy of the software ideas.

Brazil, of course, is unlikely to modify the technology transfer regime in any of these fashions. The reserved market policy for informatics products[132] shows that Brazil is reluctant to ease the legal environment for software imports. Currently in Brazil there is a debate over sui generis legislation for domestic software protection.[133] The Brazilian government proposes to establish an entirely new system for software protection and has ignored criticism from other countries.[134] If anything, Brazil wants foreign software developers to rely on Brazilian protection for their software distributed in Brazil.[135]

B. The U.S. Domestic Approach

Since satisfactory modifications of the UNCTAD Code and the Brazilian regime are not realistic, U.S. software exporters can only hope for a domestic solution to their problem. An exception to the estoppel of trade secret protection faces two major hurdles. First, trade secret doctrine is governed by state law,[136] so exporters will have trouble establishing uniform acceptance for any possible exception. Even given the difficulty of obtaining uniform acceptance, however, an insurmountable hurdle exists for any legal theory attempting to preserve trade secret protection through some exception. By definition, a trade secret cannot be public knowledge, yet the international rules and Brazilian regulations analyzed in this note operate to place the software ideas in the public domain. The software exporters

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132. *See supra* note 73 and accompanying text.
133. 28 PAT. TRADEMARK & COPYRIGHT J. (BNA) No. 694, at 482 (1984).
134. *Id.*
135. *See generally* Comment *supra* note 75 (discussion of existing Brazilian domestic protection for software).
136. *See supra* note 22.

might try to argue that the software ideas entered the public domain by a form of foreign government expropriation.[137] As such, they might try to claim that this extraordinary event should not destroy their domestic software protection. Yet this theory fails because the software exporters initiated and consented to the publication of their software ideas; they distributed the software internationally under these regimes.

A software developer is also unlikely to be able to obtain insurance against the loss of trade secret protection. Since the software developer voluntarily discloses the trade secrets by distributing the software under the UNCTAD and Brazilian regimes, no risk of loss is involved. Given the disclosure of trade secrets whenever software is distributed internationally, this loss of secrecy is a not an insurable event.

The U.S. government lacks the capacity to provide a solution, because it cannot effectively contribute to minimizing the damage through protectionism. The protectionist policies would have to prevent importation of software[138] that use ideas that become public by operation of a technology transfer regime. While there are existing federal statutes for relief from injury caused by import competition under the Trade Act of 1974,[139] as amended in 1979, and unfair trade practices under the 1930 Tariff Act,[140]these statutes do not apply to the problem associated with the loss of software trade secrets. The software imports using disclosed ideas would not meet the injury test of Section 201 of the Trade Act since the damage would not affect the entire domestic software industry.[141] The imports would also fail the unfair methods of competition requirement of the Tariff Act, since consent to disclosure prevents the use of the software ideas from being classified as misappropriation and thus as an unfair method of competition.[142]

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137. The type of expropriation that would be argued would necessarily be a regulatory taking.

138. Importation of software must also include use of the software on a foreign-based computer even though accessed from the United States.

139. 19 U.S.C. § 2251(b)(1) (1982). *See generally* Sandstrom, *Import Relief, Unfair Trade Practices and the Generalized System of Preferences,* 11 LAWYER OF THE AMERICAS 359 (1979) (discussion of U.S. protectionist legislation).

140. 19 U.S.C. § 1337 (1982). *See generally* Sandstrom *supra* note 139.

141. *See* 19 U.S.C. § 2251(b)(1) (1982). The imports would only damage the particular software exporter whose trade secrets were used. Other domestic competitors in fact would benefit by the disclosure. In addition, there is an on-going debate as to whether software is classified as a good or a service. If software is considered a service, it is outside the ambit of 19 U.S.C. § 2251(b)(1). *See generally* Cavanagh, *The Supply of Computer Software—Goods or Services?* 12 AUSTR. BUS. L. REV. 195 (1984)(discussion of software classification).

142. *See* 19 U.S.C. § 1337 (1982). This section broadly refers to unfair methods of com-

Under its commerce clause authority,[143] Congress could propose a new statute barring the importation of foreign software that originates in a country whose legal regime precludes U.S. trade secret protection and that employs software ideas otherwise protected under U.S. trade secret law. As a practical matter, a statute of this kind would not significantly help the U.S. software developer since any domestic competitor could still use the new software ideas by obtaining the information abroad. Any legislative attempt of this sort would also encounter constitutional objections. The First Amendment freedom of speech[144] could be invoked to invalidate any such statute as an improper restriction on the expression of ideas. Though the Supreme Court has upheld an import ban on obscene material,[145] the Court relied on its previous holding in *Roth v. United States*[146] that obscenity was not constitutionally protected.[147] In *Roth*, the Court enunciated the standard that "all the ideas having even the slightest redeeming social importance . . . have the full protection of the guarantees, unless excludable because they encroach upon the limited area of more important interests."[148] The expression of software ideas are of significant value for social progress. The interest of safeguarding the individual software developer upon which these software imports would encroach is quite small; the ideas are already in the public domain and available for use by domestic competitors. Hence, software should be protected by the First Amendment and an import ban ought not to withstand a constitutional challenge. Even if the existing statutes were applicable or a new protectionist statute were constitutional, the remedies would be inadequate for the U.S. software exporters. The market for software is worldwide and only the domestic damage would be reduced for the U.S. software exporters.

One possibility still remains for minimizing the effects of the technology transfer regimes on U.S. trade secret protection. The U.S. software exporter can use a license agreement protecting trade secrets if it includes a choice of law provision that stipulates the governing law of a particular U.S. state and includes a provision for consent by the licensee to the jurisdiction of that state's courts.[149] If this agree-

petition and includes such methods as U.S. patent infringement overseas. Sealed Air Corp. v. U.S. Int'l Trade Comm., 645 F.2d 976 (C.C.P.A. 1981).

143. U.S. CONST. art. I, § 8, cl.3.

144. U.S. CONST. amend. I.

145. United States v. Thirty-Seven Photographs, 402 U.S. 363 (1971).

146. 354 U.S. 476 (1957).

147. *Id.* at 485.

148. *Id.* at 484.

149. *See generally* Reese, *Choice of Law in Torts and Contracts and Directions for the Future,* 16 COLUM. J. TRANSNAT'L L. 1 (1977)(analysis of the effectiveness of contractual

ment is enforceable in U.S. courts, it would preclude the technology transfer estoppel of U.S. trade secret protection since the licensee would be bound overseas to the terms of an agreement that adequately guards the secrecy of the software and maintains competitive advantage.

Given that this agreement might not be valid under foreign law, the choice of law provision which circumvents the public policy of a foreign party's home forum would be of suspect enforceability in the United States. Several states have enacted statutes which mandate that effect be given to choice of law provisions stipulating the forum state's law.[150] Otherwise courts have sometimes looked to the public policy of the forum where the suit is brought to determine whether to give effect to a choice of foreign law.[151] In *Kewanee Oil v. Bicron*,[152] the Supreme Court indicated that public policy in the United States should protect trade secrets to encourage business initiative and competition.[153] The encouragement of advances in software technology necessitates trade secret protection for software ideas. If the court looks to U.S. public policy, then the choice of law clause should be upheld as valid, especially since the chosen law is U.S. law and not foreign law.

The *Restatement (Second) of Conflicts* uses a slightly different approach. In the event that the chosen law is contrary to a fundamental policy of the forum which has a greater interest in the contract, the law which governs is the law applicable in the absence of an effective choice by the parties.[154] The proposal to choose U.S. law to govern a software license agreement between a U.S. company and a Brazilian company would violate the fundamental Brazilian policy of technol-

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choice of law provisions); Gruson, *Forum-Selection Clauses in International and Interstate Commercial Agreements*, [1982] ILL. L. REV. 133 (discussion of the effectiveness of contractual choice of forum provisions).

150. *See, e.g.,* CAL. CIV. CODE § 1646 (West 1973) (stipulating that a contract is governed by the law of the place of performance or, if the place of performance is not indicated, the place of making); MASS. ANN. LAWS ch. 106, § 1-105 (Michie/Law. Co-op. 1984) (stipulating that effect be given to a choice of law provision if there is a reasonable relation to the chosen law); N.Y. GEN. OBLIG. § 5-1401 (Consol. 1984)(stipulating that a choice of New York law shall be effective for contracts with a value greater than $250,000 regardless of the relation between the transaction and New York law).

151. Merrill, Lynch, Pierce, Fenner & Smith v. Stidhorn, 658 F.2d 1098, 1100 n.5 (5th Cir. 1981); American Electric Welding Alloys Sales v. Rodriquez, 480 F.2d 223, 227 (1st Cir. 1973); Hellenic Lines v. Rhoditis, 398 U.S. 307 (1970). *But cf.* Lauritzen v. Larsen, 345 U.S. 571 (1953)(court looks to the public policy of the state to which the transaction bears the most significant relationship).

152. 416 U.S. 470 (1974).

153. *Id.* at 483.

154. RESTATEMENT (SECOND) CONFLICT OF LAWS § 187(2)(b) (1971).

ogy transfer.[155]   In order to determine the greater state interest, the *Restatement* refers to the law which would govern in the absence of a choice of law provision.[156]   Governing law is determined by an analysis of the following contacts: place of contracting, place of negotiation of the contract, place of performance, place of the subject matter of the contract, and place of the domicile, residence, nationality, incorporation and business of the parties.[157]   While the place of contracting and negotiation of the software license agreement may be in the United States, these factors are a weak basis for a substantial relationship to a U.S. forum.[158]   Though the software will be used and located overseas, the place of performance also might be in the United States if the agreement provides that the foreign licensee must remit royalties to the U.S. licensor in the United States or, better still, that the U.S. licensor must update the software and render consulting services.

If the relationship is structured so that the contract is negotiated and signed in the United States and that an aspect of performance in the United States is coupled with a party's domicile, residence, place of incorporation or business in the forum of performance, there should be sufficient contacts to support a choice of that forum's law. In *Nordson v. Plasschaert*[159] the Eleventh Circuit gave effect to the parties' choice of law clause despite its violation of the forum's public policy because the court found that the contract with multinational contacts transcended political borders so that no state had a materially greater interest.[160]   Any doubts should be resolved in favor of applying the choice of U.S. law since U.S. public policy considerations are against the technology transfer regimes[161] and strongly supportive of trade secret protection.

Even with a choice of law clause valid under U.S. law, enforcement may be impossible. If the foreign licensee has limited or no other contacts with the United States and if foreign courts refuse to give effect to a U.S. judgment based on the choice of law clause, then the foreign licensee benefits from a breach of the agreement. To insure against the foreign licensee's breach of the agreement overseas and to protect any future judgments, the U.S. licensor should require

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155. There is no way to bring the UNCTAD regime under the RESTATEMENT since it is not the policy of a foreign forum with a governing law that may have a greater state interest.

156. *See supra* note 154.

157. *Id.* at § 188(2).

158. E. SCOLES & P. HAY, CONFLICT OF LAWS § 18.7, at 645 (1984).

159. 674 F.2d 1371 (11th Cir. 1982).

160. *Id.* at 1376; *see also* Barnes Group v. C & C Prods., 716 F.2d 1023, 1030-31 (4th Cir. 1983) (no effect given to choice of Ohio law when it conflicted with the public policy of Alabama where the contract was performed).

161. *See supra* text accompanying notes 110-13.

that an escrow account be established. While the escrow fund could never equal the value of the trade secret, it may provide adequate incentive to the foreign licensee to adhere to the contract overseas. Therefore, a license agreement governed by the laws of a U.S. state combined with an escrow account from the foreign licensee may be able to preserve trade secrecy when software is distributed internationally.

VI. CONCLUSION

Trade secret protection under U.S. law, while normally available for software, cannot be maintained if the software is distributed in Brazil or in a country which has a technology transfer code similar to the current UNCTAD proposal. The Brazilian technology transfer regime does not permit software imports with license agreements that are adequate to maintain the competitive advantage and secrecy requisites of U.S. trade secret protection. The current UNCTAD proposal presents the same set of problems and causes the same result. Possible solutions through modifications of the UNCTAD Code and the Brazilian regime do not seem likely, and a domestic approach to resolve the issues of a loss of trade secret protection provides only a minor solution and not a comprehensive resolution of the problem. Today, it is quite conceivable that any international distribution of software might jeopardize U.S. trade secret protection depending on the cloak of secrecy available in the foreign destination. To enable the use of U.S. software overseas, the best alternative is for a software exporter to structure the transaction with as many contacts in the United States as possible and to insert a choice of law clause stipulating that the law of a particular U.S. state will apply.

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