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NAVIGATING UNCHARTED WATERS: THE OPENING OF BRAZIL'S SOFTWARE MARKET TO FOREIGN ENTERPRISE†

INTRODUCTION

The Brazilian software market is in a state of flux. For many years the software industry fell under the umbrella of Brazil's broader "informatics"[1] policy, which focused on the minicomputer and microcomputer industries. The informatics policy—the Brazilian government's cornerstone for regulating intellectual property and technology trade—excluded foreign participation as part of a broader protectionist strategy designed to establish Brazilian autonomy in key industries. At least for the software market, however, protectionist policies operated as a double-edged sword. On the one hand, protectionism encouraged economic development in an important industrial sector. On the other hand, erecting trade barriers for the software market conflicted with the economic interests of many industrialized countries, including the United States.

In the mid-1980s the U.S. government sought to undercut Brazil's informatics policy by targeting a vulnerable market segment—software. Two developments focused attention on the need for a specialized software policy in Brazil. First, severe restrictions on software imports had created a black market for U.S. software in Brazil. Second, Brazil's failure to provide adequate legal protection for software had generated widespread piracy of foreign and domestic software.[2] These interre-

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1. "Informatics" is a term used in Europe and the Third World to describe the information industries of telecommunications and data processing. The Brazilian informatics policy is avowedly protectionist, designed to foster growth of an indigenous informatics industry and especially the creation of a domestic minicomputer and microcomputer market. *See* Recent Development, *Brazilian Computer Import Restrictions: Technological Independence and Commercial Reality*, 17 LAW & POL'Y INT'L BUS. 619 (1985) (authored by Anne Piorkowski) [hereinafter Recent Development, *Computer Import Restrictions*].

2. A 1987 U.S. Trade Representative report estimated that software piracy losses in Brazil exceed $35 million annually for microcomputer software alone. The report notes that losses may be substantially higher for all kinds of computer software. *See* U.S. Trade

lated developments combined to discourage the growth of Brazil's software industry, and they also harmed U.S. interests.

Official U.S. involvement with Brazil's software market began with a section 301 unfair trade investigation[3] conducted by the U.S. Trade Representative in 1985. The section 301 proceeding, authorized under the Trade Act of 1974, is designed to encourage a less restrictive Brazilian trade policy for software as well as legal sanctions for software piracy. Although the software controversy in Brazil is ongoing, U.S. pressure has already achieved tangible success. Brazil's new Software Law, enacted in December 1987, is a breakthrough that establishes copyright protection for all software. The new law also provides a framework independent of the informatics policy for the marketing of software.

Part One of this Note traces the political, economic and legislative

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Representative, 1987 U.S. Trade Estimate Report 13 (Nov. 1987) (unpublished report on file with the *Stanford Journal of International Law*; also available in the U.S. Embassy, Brasilia) [hereinafter 1987 Trade Estimate Report].

3. Section 301 of the Trade Act of 1974 authorizes the U.S. President to take appropriate action to obtain the removal of any foreign governmental practice that violates an international agreement or unreasonably burdens or restricts U.S. commerce. *See* Trade Act of 1974, § 301, 19 U.S.C. § 2411 (1982). A section 301 investigation, conducted by the office of the U.S. Trade Representative, reviews alleged foreign trade restrictions or unfair practices. An investigation typically occurs after the U.S. Trade Representative receives a complaint from an affected party. Investigations can also be "self-initiated"— sometimes the President directly requests the U.S. Trade Representative to review alleged unfair practices by foreign governments. Upon completion of the U.S. Trade Representative's study, the President may or may not take action under section 301 to eliminate such restrictions or practices. Under the Omnibus Trade and Competitiveness Act of 1988 (the 1988 Trade Act), self-initiated actions in the intellectual property area are mandatory if certain adverse conditions exist. Two sections of the 1988 Trade Act provide a mechanism which addresses the adverse impact on U.S. trade caused by the lack of adequate and effective protection of U.S. intellectual property rights by other countries. Section 1303 of the 1988 Trade Act requires the U.S. Trade Representative to identify "priority foreign countries" within 30 days after the annual section 181 Foreign Trade Barriers report is submitted to congressional committees. The countries selected will be those that have the most egregious acts, policies, or practices, which in turn have the greatest adverse impact on U.S. exports and have not entered into good-faith negotiations or are not making significant progress in bilateral or multilateral negotiations to provide protection for intellectual property rights. Omnibus Trade and Competitiveness Act of 1988, Pub. L. No. 100-418, § 1303, 102 Stat. 1107, 1179-81.

In addition, section 1301(a) of the 1988 Trade Act requires the U.S. Trade Representative to initiate an investigation within 30 days after the above-mentioned identification has occurred. The U.S. Trade Representative must recommend action within six months of the investigation's initiation, unless she determines this would be detrimental to the United States' economic interest. The U.S. Trade Representative must publish in the Federal Register a list of priority foreign countries and any revisions to the list. She may revoke the identification of priority foreign countries upon submission of a written report to Congress or add countries not previously identified if subsequent information indicates there is a change in circumstances. *Id.* § 1301(a).

history of Brazil's Software Law. Part Two describes the law's major provisions, including copyright protection and software commercialization in Brazil. Part Three provides a substantive critique of the Software Law, analyzing whether it adequately protects software against infringement in Brazil. In addition, Part Three analyzes how the Software Law restricts market access and discusses its other practical effects on Brazil's domestic software industry and on U.S. interests. This Note concludes that progress in both the protection and market access areas of the law is needed but suggests that resolving the continuing piracy problems should be addressed first because sufficient Brazilian-U.S. consensus currently exists to achieve immediate reform in this area.

I. BACKGROUND

"Software treatment" in Brazil is shaped by a strongly divided set of governmental policies and political pressures. At the heart of the issue lies the country's approach to informatics. Understanding the environment in which Brazil's Software Law was passed requires looking at the government's informatics policy, which greatly determined the treatment of software as the industry grew. The informatics policy also reflected the political pressures influential in the passage of the new Software Law, pressures that were exemplified in the section 301 investigation by the U.S. Trade Representative and in the Microsoft case.[4]

A. THE INFORMATICS POLICY

Upon determining, in the early 1970s, that technological independence was necessary for economic and military security,[5] Brazil adopted a protectionist policy designed to promote its domestic informatics industry. This policy attempted to improve the control of technology transfer through the imposition of stricter legal mechanisms regarding industrial property and technology trade.[6] Brazil also targeted certain high technology industries (e.g., the informatics sector) for accelerated, government-backed national support.[7] The primary intent of the policy was to replace imported products and technologies with Brazilian equivalents in order to foster the growth of indigenous industries.[8]

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4. For a discussion of the Microsoft case, see *infra* notes 57-80 and accompanying text.

5. *See* Recent Development, *Computer Import Restrictions, supra* note 1, at 619 n.3.

6. *See* Law of Oct. 29, 1984, No. 7.232 [hereinafter Informatics Law] arts. 2-3; *Plano Nacional de Informática* (National Informatics and Automation Plan), §§ 1-2. The *Plano* was developed pursuant to article 1 of the Informatics Law and provides an official informatics policy statement and guidelines.

7. *Plano Nacional de Informática*, §§ 1, 3.3.

8. For background information on the goals of Brazil's informatics policy, see A.

The building blocks of the informatics policy are: 1) tight control over imports of both products and technology and 2) the "market reserve."[9] The "market reserve" policy refers to the creation of a protected environment for the manufacture of certain computer products by local companies. Under the market reserve system, the Brazilian government, not private industrialists, decides whether sufficient domestic capability exists for a computer market segment. If the government's decision is positive, it establishes legal restrictions on the entry of foreign "computer" capital in that segment. In addition, the Brazilian government actively participates in the development of these market segments through financing schemes and purchase plans. In the early stages of this policy, a market reserve for minicomputers was created, for which five companies qualified. Later, other market reserves were established in the microcomputer and peripheral markets.

During the 1970s and early 1980s, implementation of the informatics policy was allocated primarily to three administrative bodies: the *Secretaria Especial de Informática* (SEI) (Special Informatics Secretariat),[10] the *Instituto Nacional de Propriedade Industrial* (INPI) (National Institute for Industrial Property)[11] and the *Carteira de Comércio Exterior* (CACEX) (Foreign Commerce Board of the Bank of Brazil).[12] Relying upon a combination of rules embodied in resolutions, communi-

BOTELHO & P. SMITH, THE COMPUTER QUESTION IN BRAZIL: HIGH TECHNOLOGY IN A DEVELOPING SOCIETY (1985); Erber, *The Development of the Electronics Complex and Government Policies in Brazil*, 13 WORLD DEV. 293 (1985).

9. *See* Evans, *State, Capital, and the Transformation of Dependence: The Brazilian Computer Case*, 14 WORLD DEV. 791 (1986). The software market can be viewed as Brazil's latest attempt at market reserve.

10. SEI has proven to be an aggressive defender of nationalist policies in the technology area. Created in 1979, it originally operated under the National Security Council. It now operates as a part of the Ministry of Science and Technology. For a more detailed history of SEI, see *id.* at 796.

11. INPI, created in 1970, analyzes together with SEI the legal authorization required to legitimate the importation of informatics technology. INPI is in charge of guiding and disciplining the surveillance, control and registration of patents, trademarks and contracts relating to the utilization of such patents, as well as directing all actions relating to contracts that involve the transfer of technology and the rendering of specialized technical services. All licensing and technical assistance agreements, including trademark license agreements, must be registered with INPI. INPI actively participates in technology transfer agreements as a third party. Failure to register with INPI results in denial of license fees, trademark registration cancellation and/or expiration of the patent. For a more detailed description of INPI activities, see Rosenn, *Regulation of Foreign Investment in Brazil: A Critical Analysis*, 15 LAW. AM. 307, 321-28 (1983).

12. According to the U.S. Trade Representative, "[v]irtually all Brazilian imports require a CACEX import license." The regulations governing license issuance provide wide latitude for delaying or denying permission to import a wide range of products. For example, the issuance by CACEX of import licenses for computers and computer-related products, including software, requires SEI's approval. SEI will approve the importation of

qués and normative acts, SEI, INPI and CACEX enforce import controls on high technology products as well as determine the terms of technology transfers. CACEX implicitly controls technology transfer through its financing approval for the importation of machinery and equipment, with SEI having a veto on import financing authorization for informatics-related products.[13] INPI explicitly controls technology transfer through its approval of licensing and technical assistance agreements, subject to SEI's veto in the informatics area.[14] The coordination of efforts[15] among SEI, INPI and CACEX results in the purchase of foreign technology only when such technology is undisputably necessary for the present stage of Brazilian development, when it is not available in Brazil, and when it complements Brazilian research and development efforts.

On October 29, 1984, Brazil approved a complex new Informatics Law codifying and extending policies followed since the 1970s.[16] According to the Informatics Law, national informatics policy aims at "the development of a national capability in informatics activities, to the benefit of the social, cultural, political, technological, and economic development of the Brazilian society."[17] The informatics sector is broadly defined as "any activity related to the rational and automatic treatment of information"[18] and specifically includes the "importation, exportation, production, operation, and marketing of programs for computers and automatic information treatment machines, as well as the corresponding technical documentation (software)."[19]

The Informatics Law created a new administrative agency, the *Conselho Nacional de Informática e Automação* (CONIN) (National Council of Informatics and Automation), which was vested with the policy-making authority formerly held by SEI.[20] CONIN is answerable di-

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finished software only if no domestic alternative exists. *See* 1987 Trade Estimate Report, *supra* note 2, at 8.

13. Rosenn, *supra* note 11, at 353. As discussed in note 12, *supra*, almost all imports to Brazil require a CACEX license. The CACEX license authorizes import financing arrangements. CACEX implicitly controls technology transfer through its regulations concerning import licenses. If CACEX wants to constrain technology imports, it can institute onerous financing policies for imports in general. *See id.* at 329-32.

14. *Id.*

15. Critics of Brazil's implementation of the informatics policy argue that even though SEI's, INPI's and CACEX's roles in controlling technology transfers are interrelated, insufficient coordination among the agencies has resulted in a failure to develop a unified approach to technology transfer. *See, e.g., id.*

16. Informatics Law, *supra* note 6.

17. *Id.* art. 2.

18. *Id.* art. 3.

19. *Id.* art. 3, § 3.

20. *Id.* arts. 6-7. CONIN is composed of several ministers of state, as well as representatives of the private sector, such as the Brazilian Association of Computer and Pe-

rectly to the Brazilian President[21] and provides direction to the other administrative bodies in the implementation of policy.[22] In practical terms, however, the Informatics Law mandates that SEI must be consulted for the solution of controversies involving informatics. The law does not specify the roles of INPI and CACEX, but in practice these agencies have retained their traditional responsibilities.[23] The administrative agencies together—CONIN, SEI, INPI and CACEX—currently control the enforcement of the informatics policy.

B. TREATMENT OF SOFTWARE PREVIOUS TO THE PASSAGE OF THE SOFTWARE LAW

Article 43 of the Informatics Law[24] established that in "[m]atters pertaining to computer programs and associated technical documentation (software) . . . the right to privacy [and] personal rights, because of their scope, shall be dealt with in specific legislation to be approved by the National Congress."[25] Before the passage of specific legislation for the protection and marketing of software, however, SEI established its own interpretation of how foreign software should be marketed in Brazil and, in turn, what legal protection, if any, should be available to software.[26]

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ripheral Industry (ABICOM), the Brazilian Association of Users of Computers and Subsidiary Equipment (SUCESU), the Brazilian Association of Informatic Service Companies (ASSESPRO) and the Brazilian Association of Professionals on Data Processing (APPD). CONIN also includes the presidents of the Confederation of Industries, the National Confederation of Trade and the National Confederation of Credit Companies; one representative each from the National Confederation of Workers in Industry (CNTI), the National Confederation of Workers in Commerce (CNTC) and the National Confederation of Workers in Credit Companies (CONTEC); one representative each of the Brazilian Society for the Progress of Science (SBPC) and the Brazilian Society of Data Processing (SBC); and one representative each nominated by the Brazilian Bar Association and the Institute of Brazilian lawyers. The three-year appointment of the members is made by the Brazilian President. *Id.* art. 6.

21. *Id.* art. 5, § X.

22. CONIN's most important activities include: proposing and overseeing implementation of the National Informatics and Automation Plan; deciding, as an appellate authority, issues resulting from decisions made by SEI; and establishing norms and standards for the registration of informatics goods and services. *Id.* art. 7, §§ II, XIII, VIII. SEI was subordinated to CONIN, but SEI retains certain duties such as providing technical support to CONIN, deciding on projects for development and production and giving a prior opinion on the importation of "informatics goods and services, for a period of eight years [through 1992]." *Id.* art. 8, §§ I, V, VI.

23. Interview with Sonia Homsy, Intellectual Property Lawyer, in Rio de Janeiro (Mar. 2, 1988) [hereinafter Homsy interview].

24. Informatics Law, *supra* note 6, art. 8, § VI.

25. *Id.* art. 43.

26. SEI Normative Act No. 22 (Dec. 2, 1982) (on file with the *Stanford Journal of International Law*).

SEI interpreted the Informatics Law to require that software import agreements be jointly analyzed and approved by SEI and INPI. Acting in this capacity, INPI treated all software licensing and marketing agreements involving foreign companies as technology transfer contracts. This brought foreign software agreements under Law 5.772 of Brazil's Code of Industrial Property, which prohibits restrictions on marketing or exportation in any technology agreement.[27] Various INPI normative acts regulating technology transfer also placed procedural restrictions on foreign software agreements.[28]

The treatment of software agreements in Brazil as technology transfer contracts created several difficulties for concluding a successful software arrangement, principally because the technology transfer contractual scheme treats software as unpatented technology. Under Brazilian informatics regulations, unpatented technology (such as software) cannot generally be licensed, only sold. In addition to the procedural restrictions mentioned above, INPI's onerous criteria for approval of technology transfer agreements prevented a great number of foreign software sales from taking place.[29]

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27. Law of Dec. 21, 1971, No. 5.772. The Industrial Property Code's provisions prohibit a "license [from] impos[ing] any restrictions as to the marketing or exportation of the product covered by it" or as to "the importation of articles or material necessary for the product's manufacture." *Id.* art. 29, § 2.

28. The INPI normative acts regulating technology transfer agreements include:

(a) Normative Act No. 15 (Sept. 11, 1975), which establishes that contracts of technology transfer and related matters must be approved and registered at INPI in order to benefit from fiscal deductions governed by specific tax regulations. Registration is also a condition for providing evidence of actual exploitation of patents within the country;

(b) Normative Act No. 32 (May 5, 1978), which requires prior consultation with INPI before granting a technology transfer contract;

(c) Normative Act No. 60 (Mar. 24, 1982), which establishes conditions governing technical assistance contracts between foreign and Brazilian companies; and

(d) INPI/SEI Joint Normative Act Nos. 53, 13/80 (Feb. 12, 1981), which established a commission composed of individuals from both agencies that meets periodically to examine recommendations for policy decisions and technology transfer contracts (these Normative Acts are on file with the *Stanford Journal of International Law*).

29. One device used to overcome the difficulties created by SEI's and INPI's criteria involved Brazilian subsidiaries of foreign companies receiving the software directly from the parent company without obtaining any governmental approval. Because software deals are treated as technology operations, no payment of fees is allowed. Instead, remittance is made in the form of profits and dividends. Interview with George Herz, Director of the Division of External Relations of Unisys, in Rio de Janeiro (Apr. 20, 1988); *see also* M. Dos Santos, U.S. Government Memorandum Concerning Software Protection and Marketing in Brazil (Aug. 24, 1987) (unpublished memorandum on file with the *Stanford Journal of International Law*; also available in the American Consulate General, Rio de Janeiro) [hereinafter Dos Santos Memo].

Software fees also have been remitted as copyright royalties. Copyright license agreements do not have to be submitted to the Brazilian copyright office. Therefore, such agreements are not subject to registration with the Central Bank of Brazil. In addition,

Few foreign companies were willing to comply with the following INPI "market reserve" requirements: 1) technology transfer agreements must allow the Brazilian licensee to freely use software products after the agreement expires; 2) delivery of source code and all related documentation to the Brazilian licensee is mandatory; 3) royalty payments under the agreements are limited to five percent of net sales, although a higher fee not exceeding ten percent is sometimes possible; 4) contract duration is usually limited to five years; 5) secrecy obligations are also limited to a five-year term from the delivery of each piece of information; and 6) no export restrictions are permitted.[30] In addition, INPI did not allow agreements to restrict research and development on software products by Brazilian firms, and agreements could not restrict access to improvements on original technology during the period of the contract.[31]

The treatment of software as "technology" subjected licensing agreements to the market reserve restrictions listed above without providing software developers with any of the typical protections provided to "technology" goods. For example, patent protection for software was unavailable for two reasons. First, computer programs often do not pass the "novelty" and "industrial application" tests required by the patent laws.[32] Second, article 9, paragraph h of Brazil's Industrial Property Code provides that "systems and programs" are not patentable inventions. Although the statute does not expressly refer to computer programs, it has generally been interpreted to exclude software from patentability.[33]

Another inadequacy was the unavailability of contractual provisions to protect the intellectual property rights of software owners. As previously stated, all software agreements are subject to review and approval by INPI and SEI. Neither agency will approve a contractual clause they deem in conflict with the informatics policy. Unfortunately, many protective clauses desired by foreign software licensors directly conflict with that policy. For example, many software developers protect pro-

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Central Bank authorization is not required for standard copyright remittances, such as those relating to books or records published and distributed in Brazil. As such, some Brazilian companies have remitted software fees under the guise of payments for distribution of user manuals.

The position taken by the Central Bank, however, is that any and all copyright payments that do not fall into specific categories (books, records, press articles and reproduction of characters) require the prior authorization of the appropriate agency. In the case of software agreements, the prior consultation of INPI is then required. *Id.*

30. Dos Santos Memo, *supra* note 29.

31. INPI Normative Act No. 15 (Sept. 11, 1975), art. 2.5.

32. *See* Turner, *Brazil: A Practical Guide to Intellectual Property Protection*, BUS. AM., Jan. 18, 1988.

33. *Id.*

grams by restricting access to their source codes. According to the INPI criteria for approval of a software agreement, however, delivery of a program's source code is mandatory.[34]

SEI and INPI's treatment of software as unpatented technology may have made it easier for the Brazilian government to turn a blind eye to the unauthorized use of foreign software goods. The regulatory scheme devised by SEI and INPI for the importation of foreign software did not regard software as an intellectual work subject to copyright laws, nor did it admit any references to intellectual property or other proprietary rights for software.[35] This ad hoc approach to the protection and marketing of software led to uncertainty, insecurity and anger among investors and businesspersons in the international software industry. Although a more comprehensive and balanced scheme was desired by both foreign and Brazilian investors,[36] the Brazilian government continually avoided broader regulation of software trade. A section 301 investigation by the U.S. Trade Representative may have prompted the Brazilian government to focus on the issue.

C. THE U.S. SECTION 301 INVESTIGATION

Partly in response to the Brazilian government's lack of protection for computer software and its restrictive policy on the importation of software, the U.S. Trade Representative self-initiated a section 301 action against Brazil in September 1985 under the authority provided in the Trade Act of 1974.[37] Under section 301 of the Act, the President is authorized to take all appropriate action, including retaliation, to obtain the removal of any foreign government's act, policy or practice that violates an international agreement or is "unjustifiable or unreasonable

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34. INPI Normative Act No. 15 (Sept. 11, 1975), art. 4.

35. *See supra* notes 26-28 and accompanying text.

36. A more balanced scheme was desired by foreign software manufacturers because they wanted to enter the Brazilian market. Much software technology was not "transferred" because one of the Brazilian governmental agencies would refuse to approve an agreement or a foreign licensor of software would be dissuaded by all of the conditions imposed by Brazil's Byzantine regulatory scheme. *See* Rosenn, *supra* note 11, at 358. Many Brazilian companies wanted more accessible regulations because they were deprived of needed technology and were forced to settle for inferior products. *See id.*

37. Although section 301 procedures clearly allow the President to act on his own initiative, the Reagan administration did not initiate an investigation on its own motion until September 7, 1985. *See* Howell, Benz & Wolff, *International Competition in the Information Technologies: Foreign Government Intervention and the U.S. Response*, 22 STAN. J. INT'L L. 251, 255 n.164 (1986). On that date, the President directed the U.S. Trade Representative to initiate three section 301 investigations for allegedly unfair foreign practices. One of the investigations concerned the Brazilian informatics policy. *See* Weinraub, *Reagan Orders Moves Against Trade Partners*, N.Y. Times, Sept. 8, 1985, at A1, col. 5.

and . . . burden[s] or restrict[s] United States commerce."[38] Once an injury determination is made by the U.S. Trade Representative, the President is given wide latitude in choosing a response. Typically a retaliatory measure or an international agreement formalizing market access is chosen.[39] In the ongoing section 301 investigation concerning Brazil, consultations with the Brazilian government have focused on the market reserve policy, intellectual property protection for software, and the elimination of barriers to foreign investment in the informatics area.

Although the efficacy of section 301 has been questioned,[40] it has proven extremely effective in shaping the development of the Brazilian Software Law. The first hint of influence can be seen in the May 1986 São Paulo State Supreme Court decision holding that existing Brazilian copyright law applied to software.[41] This court's action marked the first time a Brazilian governmental body officially admitted any kind of protection for software. Interestingly, the court chose the protection model for software desired by the United States that had been unacceptable to Brazilian bureaucrats then debating the issue of software protection. This favorable decision by the court also came shortly after the White

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38. Trade Act of 1974, § 301, 19 U.S.C. § 2411 (1982).

39. In attempting to gain access for U.S. exporters into foreign markets, section 301 may be very effective because of its range of available remedies. Presidential retaliation or threats of retaliation can be used as a political tool in negotiating with foreign governments to eliminate their market barriers. The remedy of formal agreement implies that the foreign government's "unjustifiable" policy will be rendered reasonable. Overall, section 301 may be the only U.S. trade remedy available that can counter a foreign government's anticompetitive activities when that government is attempting to develop a national industry through a strong protectionist posture. *See* Howell, Benz & Wolff, *supra* note 37, at 253 n.155.

40. *See, e.g.*, Note, *Defining Unreasonableness in International Trade: Section 301 of the Trade Act of 1974*, 96 YALE L. J. 1122, 1133-36 (1987) (authored by Patricia I. Hansen).

41. Sinclair, a British company, was the plaintiff in this case. Sinclair sued three Brazilian companies, two of which allegedly copied into their personal computers the keyboard, functions and read-only-memory (ROM) of Sinclair's computers. Sinclair complained that the third Brazilian company published a photograph depicting diagrams of Sinclair computers. The lawsuit relied on Brazilian copyright laws. Defendants' response denied the application of Brazilian copyright laws in this case. The trial court judge, basing his conclusion on a report submitted by a court-appointed expert, found that no copying had occurred. The trial judge thereby refrained from deciding whether copyright laws applied to this fact situation.

On appeal, the São Paulo State Supreme Court responded to the controversy by first addressing the issue of the copyrightability of software. The court admitted that there was no consensus on this issue but refused to review the arguments advanced by the plaintiff and the defendants. The court sidestepped the issue of software's copyrightability by *assuming* that software should be protected by the copyright laws. The court did not have to reach the issue expressly because it concluded that Sinclair wanted protection for hardware, not software. Since hardware cannot be afforded copyright protection, Sinclair's suit could not stand. Dos Santos Memo, *supra* note 29.

House Economic Policy Council had formed a working trade group to devise retaliatory actions against Brazil. Given the circumstances, it is understandable why the United States interpreted the court's decision as a signal that pressures from the section 301 investigation were effectively leading Brazil to implement a protection regime for software.[42]

Additional evidence of compromise by the Brazilian government resulting from mounting political pressure can be deduced from the publication of a *parecer* (opinion) by CONIN in September 1986. The *parecer* stated that software should be afforded protection under the "author's rights" copyright legislation, with certain adaptations.[43] The CONIN opinion, like the São Paulo State Supreme Court decision, marked a clear shift in the Brazilian government's position. Until the publication of the *parecer*, the only non-judicial governmental view regarding software protection was the possibility of establishing a *sui generis*[44] regime—an unattractive scheme from the U.S. viewpoint. The political motivations behind the opinion seem evident. The *parecer* was issued immediately before Brazilian President José Sarney's visit to the United States. Furthermore, Brazilians were increasingly concerned that inactivity on their part would lead to retaliatory measures from the United States.[45] The recommendation, however, had no legally binding effect. From a diplomatic perspective, the CONIN opinion demonstrated the Brazilian government's willingness to avoid a harsh confron-

42. *See* 1987 Trade Estimate Report, *supra* note 2, at 13.

43. CONIN *parecer* No. 001/86 (Sept. 22, 1986), *cited in* Dos Santos Memo, *supra* note 29.

44. A *sui generis* regime refers to legislation enacted specifically for computer software. Some commentators believe that the special properties of computer software make it difficult to provide protection for proprietary interests in software by amending existing intellectual property laws. They urge the adoption of *sui generis* legislation, on the order of the World Intellectual Property Organization (WIPO) Model Provisions. See Note, *International Protection of Computer Software: The Need for Sui Generis Legislation*, 8 LOY. L.A. INT'L & COMP. L.J. 511 (1986) (authored by Howard K. Szabo), for a general discussion of the proposals for *sui generis* legislation. *See also* WORLD INTELLECTUAL PROPERTY ORGANIZATION, MODEL PROVISIONS (1978) (on file with the *Stanford Journal of International Law*).

45. Interview with Francisco Ramalho, President of the Associação Brasileira das Empresas de Serviços de Informática-Nacional (ASSESPRO) (Brazilian Association of Informatic Service Companies), in Rio de Janeiro (Apr. 19, 1988). Throughout the section 301 investigation, the threat of possible sanctions concerned the Brazilians. As late as February 1988, an article in the *Jornal do Brasil*, one of Rio de Janeiro's most respected daily papers, informed readers of the threat of sanctions. *See* Garcia, *Sanções estão indefinidas*, Jornal do Brasil, Feb. 1, 1988, § 1, at 13, col. 1. The article reflected Brazilian fears that had been brewing since the inception of the U.S. section 301 investigation in 1985. It mentioned President Reagan's "sword" of sanctions and the constant battle the Brazilians faced in fending off these threats. For a U.S. report of Brazil's diplomatic efforts to head off threatened sanctions, see *Brazil Fights Back*, N.Y. Times, Feb. 8, 1988, at A16, col. 6.

tation with the U.S. government. It also indicated that Brazil might accept the prevailing international principle of recognizing intellectual property protection for software.

Within a month, the Reagan administration determined that Brazil's informatics policies were an "unreasonable" trade action under section 301.[46] To allow time for further consultations with Brazil, the President deferred his decision on actions to be taken until the end of 1986.[47] On December 9, 1986, just before the deadline for action on the section 301 complaint, Sarney sent the Brazilian Congress a bill containing provisions specifying intellectual property protection for software and regulating software marketing.[48] From a U.S. perspective, the bill provided sufficient copyright protection because it was specifically linked to the existing Brazilian copyright act.[49] Unfortunately, preservation of software market reserve and related commercial restrictions were also part of the legislation.[50] While the section 301 action seemed to provide an impetus for intellectual property protection for software, it did not appear effective in helping to open the Brazilian market to U.S. software products. Nonetheless, because the bill did provide a protective scheme for software, the U.S. government directed the U.S. Trade Representative to continue negotiations with Brazil and delayed any retaliatory decision until July 1, 1987.[51]

On June 24, 1987, shortly before the new deadline for retaliation, the Brazilian software bill was approved by the Chamber of Deputies.[52] As a result, President Reagan directed the U.S. Trade Representative to suspend the intellectual property rights section of the section 301 case and to monitor the passage of the bill through Brazil's Senate.[53] While the bill progressed through the Brazilian Senate, the U.S. Trade Representative scrutinized all significant actions taken by the Brazilian government in the software sector. Finally, when SEI denied a license sought by six Brazilian computer hardware firms to use Microsoft Corporation's MS-DOS operating system, President Reagan reevaluated his

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46. *See* Farnsworth, *Reagan Imposes Punitive Tariffs Against Brazil*, N.Y. Times, Nov. 14, 1987, at A38, col. 1.

47. 1987 Trade Estimate Report, *supra* note 2, at 19.

48. *Projeto de lei*, No. 8.551, signed Dec. 9, 1986 (on file with the *Stanford Journal of International Law*).

49. *Id.* art. 2.

50. *See id.* art. 3.

51. Riding, *Brazil Will Renegotiate its Paris Club Debts*, N.Y. Times, Dec. 20, 1986, at A39, col. 6.

52. Riding, *Software Copyright Bill Moves Ahead in Brazil*, N.Y. Times, June 26, 1987, at D1, col. 1.

53. 1987 Trade Estimate Report, *supra* note 2, at 13.

decision to delay retaliatory action.[54]

On November 13, 1987, the Reagan administration ordered the imposition of punitive tariffs on $105 million worth of Brazilian imports.[55] A specific hearing was to be held by the U.S. Trade Representative to determine which Brazilian exports would be affected. The most likely candidates included shoes, civilian aircraft and earthenware products.[56] The threat of actual retaliation seemed to move the software bill through the Brazilian Congress, and in December 1987 the government passed legislation dealing with the software issue.

D.   THE MICROSOFT CASE

Another facet of the U.S.-Brazilian debate on software can be seen in the Microsoft case. The Microsoft controversy began in the first months of 1986, shortly after the U.S. section 301 investigation was initiated.[57] In those initial months, several international companies, including Microsoft Corporation, discovered that the number of personal computers in Brazil exceeded 500,000.[58] This large base of personal computer users indicated Brazil's potential importance as a market for software. The companies decided to conduct a survey to determine which operating systems were being used for 16-bit microcomputers, a popular-sized personal computer.[59] Results from the survey could be considered disturbing—five of the large Brazilian microcomputer manufacturers were copying Microsoft's operating system without authorization.[60] Microsoft contacted the five Brazilian companies and the companies agreed to request SEI's authorization to import Microsoft's operating system, MS-DOS, under a licensing agreement.[61] Consequently, the five companies submitted a "Memo of Understanding" between them and the Microsoft Corporation to SEI on November 24, 1986.[62]

The objective of the agreement was to give the Brazilian companies

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54. Farnsworth, *Software Curb Eased in Brazil*, N.Y. Times, Dec. 23, 1987, at D5, col. 6 (inter city final ed.).

55. *Id.*

56. Farnsworth, *supra* note 46, at A1, col. 2.

57. G. Neves, Information and Market Reserve Law in Brazil 19-20 (Dec. 3, 1987) (remarks at the CLE seminar in Miami) (on file with the *Stanford Journal of International Law*).

58. *Id.*

59. *Id.*

60. *Id.* The five Brazilian microcomputer manufacturers involved in this survey were Itautec Informática, Microtec Sistemas Indústria e Comércio, Polymax Informática, Sid Informática and Labo Eletrônica.

61. *Id.; see also* CONIN *parecer* No. 001/88 (Jan. 20, 1988), para. 1 [hereinafter CONIN's Microsoft opinion].

62. *See* CONIN's Micrsoft opinion, *supra* note 61, para. 1.

licensing rights to distribute, reproduce and modify, for a three-year period, Microsoft's MS-DOS operating system.[63] The Brazilian companies were to receive MS-DOS version 3.0 as well as updates to be released over the three-year period.[64] The contract gave the Brazilian companies the right to export their microcomputers together with the assigned MS-DOS operating system.[65] Under the agreement, Microsoft was obliged to furnish the Brazilian businesses with the same terms and conditions offered to other clients.[66]

SEI reviewed the request over a ten-month period. The agency evaluated whether the agreement complied with the "transfer of technology" regulations devised by SEI, INPI and CACEX.[67] As previously mentioned, in keeping with the informatics policy, one criterion for the purchase of foreign technology was that no similar technology be available in Brazil. Thus, part of the evaluation included an analysis of existing Brazilian operating systems for 16-bit microcomputers to determine whether a "similar" operating system existed in Brazil. SEI denied approval of the agreement on October 6, 1987.[68] The agency based its denial on the existence of three "functionally equivalent" operating systems developed by Brazilian manufacturers: SISNE, by Scopus Tecnologia; SSDDO-SA, by Empresa SSD; and TK MULTIDOS, by Microdigital.[69] SEI claimed that the three Brazilian operating systems were similar to MS-DOS.[70]

Two of the five companies—Sid Informática and Polymax Informática—appealed the decision to CONIN.[71] The most interesting is-

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63. *Id.* para. 2.

64. *Id.*

65. *Id.*

66. *Id.* para. 3.

67. *See supra* informatics policy section, notes 1, 5-25 and accompanying text. SEI Normative Act No. 22 (Dec. 2, 1982) was the legal instrument that guided SEI in this decision. G. Neves, *supra* note 57, at 20, para. E.

68. *See* CONIN's Microsoft opinion, *supra* note 61, para. 5. The *parecer*, in relating the history of the five companies' request, cites SEI/SEXEC Communiqué No. 110/87 as the basis for SEI's refusal. *Id.*

69. *Id.* para. 8.

70. SEI's decision that SISNE was functionally equivalent to MS-DOS was based primarily on an analysis of MS-DOS 3.0. Apparently, SISNE was the most important of the three operating systems. *See A Decisão do Conin Estabelece um Empate*, 78 TEMA 8-9 (1988). Although many will concede SISNE's similarity to MS-DOS 3.0, later MS-DOS versions have superseded the technology of 3.0. Microsoft technicians claim that there is no Brazilian-produced program similar to later MS-DOS generations. SEI's reasoning, then, appears to be that if Brazil has a program functionally equivalent to MS-DOS 3.0, future generations of the Brazilian program should be protected against foreign competition as well. Applying the test of "functional equivalence" in this broad manner suggests that a very narrow category of software programs could ever be imported. *See id.* at 3-9.

71. See *supra* notes 20-22 and accompanying text for an explanation of CONIN's role in the appeal process.

sue raised on appeal had a legal basis: the bill currently in the Brazilian
Congress would make it necessary to reverse SEI's decision. The peti-
tioners were confident that the passage of the bill into law would mean
the narrowing of the functional equivalence definition.[72] In January
1988 CONIN met to decide on the appeal. Its opinion reflected a polit-
ical compromise.[73] CONIN attempted to pacify the United States while
also recognizing SEI's authority in the informatics area and upholding
the concept of functional equivalence.[74] CONIN affirmed SEI's decision
that Microsoft's MS-DOS versions 3.0, 3.1 and 3.2 could not be commer-
cialized in Brazil. At the same time, however, it modified the decision
in order to authorize the registration and commercialization of version
3.3 of MS-DOS.[75] CONIN reasoned that a modification of the decision
was necessary because no functional equivalent of version 3.3 existed at
the time that Sid Informática and Polymax Informática requested regis-
tration of MS-DOS.[76]

CONIN's decision indicated the desire of the Brazilian government
to evade the threatened U.S. sanctions. The agency was pressured to re-
solve the Microsoft controversy in a manner that would signal to the
U.S. government the Brazilian government's goodwill.[77] And, although
Brazil was not assured that the section 301 reprisals would be dropped,
CONIN's action seemed to significantly reduce the tension between the
United States and Brazil.[78] CONIN's reasoning conveyed a message
that the Software Law allowed reversal of the decision because it "is
more flexible and liberal" in its similarity test definitions than SEI's

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72. In CONIN's Microsoft opinion, *supra* note 61, para. 6, a discussion of Sid In-
formática and Polymax Informática's appeal includes the two companies' basis of appeal.
The companies reason that the bill, soon to be passed into law, has a narrower definition
of functional equivalence.

73. Interview with Ricardo Saur, Ex-Director President of Serviço Federal de Proces-
samento de Dados, in Rio de Janeiro (Apr. 19, 1988) [hereinafter Saur interview]. Mr.
Saur, a participant in the CONIN decision, admitted to the political nature of the decision.
He emphasized, however, that he believed this decision was in the best interest of *Brazil*.
The decision was designed, in his opinion, to benefit the national informatics sector by es-
tablishing clearer and more democratic mechanisms for the similarity/functional equiva-
lence evaluation. Yet CONIN's Microsoft decision seems more of an ad hoc decision than
one meant to provide guidelines for later use. *See also A Decisão do Conin Estabelece um
Empate, supra* note 70, at 3-4.

74. Saur interview, *supra* note 73.

75. *A Decisão do Conin Estabelece um Empate, supra* note 70, at 3-4.

76. *Id.*

77. *Id.*

78. After the announcement of the CONIN decision in January 1988, numerous ac-
counts in U.S. newspapers reported progress in the U.S.-Brazilian computer software dis-
pute. This progress, in turn, delayed the imposition of sanctions by the United States.
See, e.g., Riding, *Brazil Accepts One U.S. Software Product,* N.Y. Times, Jan. 25, 1988, at
D8, col. 4; *U.S. Delays Brazil Action,* N.Y. Times, Mar. 1, 1988, at D1, col. 4.

Normative Act 22—the instrument used originally to deny Microsoft permission to market MS-DOS.[79]

The decision, however, did not really clarify how future requests for the cataloguing and commercialization of foreign software would be evaluated. The Software Law itself, described below, is unclear about the evaluation procedure. The Implementing Regulations, while providing clarification on the procedural aspects of cataloguing requests, do not give adequate definition to the "similarity" or functional equivalence test. The broad definition of functional equivalence given in the Software Law is duplicated in the Implementing Regulations. This approach suggests that ad hoc decisionmaking by SEI will be the standard for determining what foreign software can be marketed in Brazil.

Results from the Software Law's first year in effect indicate that the ad hoc decisions of SEI on the functional equivalence issue have been favorable to foreign software manufacturers. As of April 1989, an estimated 4,000 foreign software products have passed the functional equivalence test and may be commercialized in Brazil.[80] Although SEI's decisionmaking has favored foreign software manufacturers thus far, the flexible standard for approaching similarity decisions may lead to unfavorable reviews in forthcoming years. Perhaps politics, as seen in the Microsoft case, will continue to influence marketing questions in the future.

II. GENERAL DESCRIPTION OF THE SOFTWARE LAW

The Software Law contains three major chapters: the first discusses the protection of software, the second regulates sales of software in Brazil, and the third spells out the applicable penalties.

A. PROTECTION

Article 2 of the 1987 Software Law extends Brazilian copyright protection to software.[81] It also adds that some modifications of the copyright law are needed to account for particular features of software.[82] The text of the law does not refer specifically to "software"[83] but to

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79. CONIN's Microsoft opinion, *supra* note 61, §§ I-II.

80. Telephone interview with Georges Fischer, an intellectual property lawyer from São Paulo (Apr. 3, 1989) [hereinafter Fischer interview]. See also *infra* notes 117-26 and accompanying text for a more complete description of the functional equivalence test under the Software Law.

81. Law of Dec. 18, 1987, No. 7.646, art. 2 [hereinafter Software Law].

82. *Id.*

83. The term "computer software" has created much confusion. *See* Caswell, *The Classification of Software: A Logical and Rational Approach*, 24 JURIMETRICS J. 377, 380 (1984), *noted in International Protection of Computer Software: The Need for Sui Generis Legislation*, *supra* note 44, at 511 n.4. The definition of computer program in the

computer programs, which are defined in article 1 as "expression[s] of an organized set of instructions, in natural or code language, contained in a physical support of any nature, for necessary use in automatic machines for information treatment, devices, peripheral instruments or equipment, based on digital technique, to make them operate in determinate manner and for determinate purposes."[84] This definition of computer programs closely parallels international standards as it resembles the World Intellectual Property Organization's description.[85]

Article 3 in turn provides that the term of protection for software is twenty-five years. The protective term begins once the software is introduced into any country.[86] Introduction of a computer program is defined as "the moment at which the author of the program utilizes it or puts it at the disposal of others."[87] Non-Brazilian software is entitled under article 3 to the same copyright protection in Brazil, provided that citizens and residents of Brazil are guaranteed a reciprocal grant of protection for their software in the other country.[88] Thus, a software program protected by copyright in the United States should be protected automatically by copyright in Brazil.

As with other Brazilian copyrights, and in accordance with the international standards on copyrights embodied in the Berne Convention,[89] the protection of software does not depend on the formalities of registration or enrollment with SEI.[90] However, the author may regis-

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Brazilian Software Law is significant because the rapid change in computer software technology may make some definitions of software obsolete rather quickly.

As noted in the text above, the Brazilian definition seems to parallel closely the international standard, as it resembles the World Intellectual Property Organization's description of computer programs. It remains an open question whether this definition will adequately describe "software" in the future, and, consequently, whether future generations of "software" will be protected under existing laws.

84. Software Law, *supra* note 81, art. 1.

85. The World Intellectual Property Organization's glossary defines a computer program as "[a] set of instructions capable, when incorporated in a machine-readable medium, of causing a machine having information-processing capabilities to indicate, perform or achieve a particular function, task or result." WORLD INTELLECTUAL PROPERTY ORGANIZATION, GLOSSARY OF TERMS 53 (Pub. No. 816) (1980).

86. Software Law, *supra* note 81, art. 3.

87. Decree of May 12, 1988, No. 96.036, art. 6 [hereinafter Software Law Implementing Regulations].

88. Software Law, *supra* note 81, art. 3(2).

89. The Brazilian Copyright Law contains in article 117 a mandate that the Conselho Nacional de Direito Autoral (CNDA) (National Copyright Council) will "determine, orientate, coordinate, and supervise the necessary provisions to exactly apply the laws, treaties, and international conventions ratified by Brazil, concerning author's rights." Law of Dec. 14, 1973, No. 5.988, art. 117 [hereinafter Brazilian Copyright Law]. Brazil is a party to the Berne Convention which requires its signatories not to condition copyright protection on registration formalities.

90. Software Law, *supra* note 81, art. 3(1).

ter it at an agency to be designated by the *Conselho Nacional de Direito Autoral* (CNDA) (National Copyright Council) to establish *prima facie* evidence of ownership.[91] The registration requires that the author deposit with the agency portions of the software and related data necessary to establish authorship and the identity of the software.[92] This information is confidential and will be disclosed only under a court order or at the request of the owner.[93]

Ownership rights to software developed during employment or while under a service contract will belong exclusively to the employer contracting for the services, except where otherwise provided in the contract.[94] The law contains a confusing provision concerning ownership in article 6. Article 6 establishes that autonomous and independent ownership rights to changes in or derivatives of a software program will belong to the authorized person who makes the changes if the parties agree to such a provision.[95] This article seems unnecessary because article 5 provides for the possibility of parties stipulating who will be the owner of rights to the software. As such, it would follow that the parties have the same rights to changes or derivations of the same software, as derivative software programs incorporate the original copy-

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91. *Id.* art. 4.

92. *Id.* art. 4(1). CNDA has designated INPI as the agency responsible for accepting software registration applications. Chapter II of the Software Law Implementing Regulations establishes the procedure for registration of computer programs. It provides that registration requests be accompanied by: 1) the title of the computer program; 2) the name, date of birth, nationality and domicile of the author; 3) the date on which the computer program was concluded; 4) an indication of the date and locality of release of the computer program; 5) if the computer program is a derivative work, an indication of the original work accompanied by a document of authorization; 6) an indication as to whether the computer program was developed by an employee, consultant or lessor of services; 7) an indication of the programming languages used in the development of the program; and 8) excerpts of the program that both characterize its independent creation and identify the program. Software Law Implementing Regulations, *supra* note 87, arts. 8-9. See also Communiqué No. 93 (May 20, 1988), *reprinted in* Diário Oficial [D.O.] (May 23, 1988), for the operating instructions that accompany the Software Law and its Implementing Regulations. The Implementing Regulations are unclear as to whether the excerpts required must be in source or object code. Presumably, object code will suffice provided it identifies the software and demonstrates that the software is an independent creation.

93. Software Law, *supra* note 81, art. 2(3).

94. *Id.* art. 5. Article 5's ownership provision on software programs made for hire is in accordance with international practice. *See, e.g.,* Copyright Act of 1976, 17 U.S.C.A. § 201(b) (1977). Sections 201-205 of the 1976 Copyright Act cover copyright ownership and transfer under U.S. law. Section 201(b), like article 5 of the Brazilian Software Law, provides that "[i]n the case of a work made for hire, the employer or other person for whom the work was prepared is considered the author . . . and, unless the parties have expressly agreed otherwise in a written instrument signed by them, owns all of the rights comprised in the copyright."

95. Software Law, *supra* note 81, art. 6.

righted work. Overall, article 6 does not clearly establish how someone who does not own the right to a copyrighted software program can autonomously exercise rights to derivative works of the same software.

The chapter on software protection concludes with article 7, which includes a list of actions not considered to be copyright infringement.[96] The list of non-infringing activities includes: 1) occurrence of a similarity between two software systems when such similarity arises innocuously; 2) similarity resulting from compliance with the requirements of the law or with regulations or technical standards; or 3) similarity occurring because of a restriction on alternative forms of expression.[97] Article 7's broad language may provide a loophole to shelter pirated copies of software programs. A software pirate may take a copyrighted program and adapt it in a manner which allows the activity to fall within one of the above-listed categories. As such, any similarity between the "adapted" pirated copy and the original copyrighted software program would be non-infringing activity. An interpretation of article 7 that narrowed the categories of non-infringing activities would provide greater intellectual property protection to software owners.

B. MARKETING AND COMMERCIALIZATION OF SOFTWARE

1. *Cataloguing*[98]

Article 8 of the Software Law provides that a software program, whether developed by a Brazilian or non-Brazilian company, must be catalogued with SEI before marketing efforts may begin in Brazil. While article 1 of the law states that the production and marketing of software are unrestricted in Brazil, the text of the law demonstrates that any freedom from restriction is fictitious. In article 8, the law establishes that SEI will classify software into different categories, depending on its origin. SEI must take into account whether the software was developed abroad or in Brazil and, if developed in Brazil, whether solely by national companies[99] or in association with non-national

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96. *Id.* art. 7.

97. *Id.* art. 7(3).

98. SEI refers to the process of commercialization or marketing of computer software as *cadastramento* (cataloguing) and to the process of obtaining copyright as *registromento* (registering). To avoid the confusing tendency in translation to refer to both processes as a "registration," this Note will follow the Portuguese terminology.

99. For purposes of the Software Law, a Brazilian national company is defined as a company that is: 1) organized and principally domiciled (i.e., having its head office) in Brazil; and 2) under the permanent, exclusive and unconditional control, whether directly or indirectly, of individuals residing and domiciled in Brazil. A Brazilian company will be deemed "controlled" by Brazilian individuals only if such individuals 1) have decision-making control over the company, 2) own 100% of the voting capital and at least 70% of the total voting and non-voting capital of the company, and 3) have "technical control"

companies.[100]

Although classification has no influence on software copyright protection, it does influence the marketing of software. The ability of non-national companies to market the software will be conditioned on the absence of similar software developed by a national company.[101] Additionally, cataloguing with SEI is a condition precedent to the validation of legal "acts" by the Central Bank. Non-catalogued programs will not receive the necessary Central Bank approval for remittance of foreign currency in payment for the programs.

In article 9 the law establishes that enrollment with SEI will be valid for three years and will be renewed automatically by SEI if no similar national software exists. If similar national software has been developed, however, SEI will refuse to renew the catalogued status that is needed to market the software. Under article 10, original computer programs independently developed are defined as similar if: 1) they are functionally equivalent, with the ability to operate in similar equipment and processing environments and with substantially the same performance characteristics considering the purposes of their application;[102] 2) they meet established national standards, if applicable;[103] and 3) they execute substantially the same functions, taking into account the kind of application intended and the characteristics of the Brazilian market.[104]

2. *Distribution/Marketing*

Article 27 provides that the economic exploitation of software must be covered by license or assignment agreements "freely" established between the producer and the distributor. These "free" agreements, however, are subject to the approval of the proper entities of the executive government.[105] Also, article 27 stipulates that certain clauses shall be considered null and void. Included in this category are clauses estab-

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over the company (i.e., the legal and de facto power to determine the development, generation, acquisition, transfer and composition of products and production technology). *See* Informatics Law, *supra* note 6, art. 12. Any company that does not meet these criteria is considered a non-Brazilian company that can only have a software program catalogued with SEI if a similar program has not been developed by a Brazilian company. *See supra* note 12.

100. Software Law, *supra* note 81, art. 8.
101. *Id.* art. 8(2).
102. *Id.* art. 10(a).
103. *Id.* art. 10(b).
104. *Id.* art. 10(d).
105. The "proper entities" are SEI and INPI, with SEI responsible for the cataloguing of software and INPI responsible for added approval when the software involves a technology transfer contract. *See* Software Law Implementing Regulations, *supra* note 87, art. 7.

lishing exclusivity; those limiting production, distribution or marketing; and those exempting any of the parties from liability for any third party action due to errors, defects or infringement of copyrights.[106]

Article 28 permits only national companies to distribute software, unless the software is intended for equipment produced either abroad or in Brazil, but marketed by non-national companies.[107] In effect, these exceptions only apply to software for mainframe computers. For example, software produced in the United States for a Burroughs mainframe may be enrolled at SEI and marketed in Brazil regardless of the existence of similar Brazilian software.

The articles regarding distribution and marketing also regulate the remuneration for an author residing or domiciled abroad by establishing that the licensing and assignment agreements will be approved and recorded only if they stipulate a fixed price per copy that does not exceed the average price charged worldwide for the distribution of the same product.[108] Payments calculated on the basis of production, income or profits of the assignee or user will not be allowed.[109] Articles 27-29 clearly demonstrate that contractual freedom in software marketing is not a reality.

3. End-Users

In its provisions for end-users, the Software Law contains one liberating opportunity for the marketing of foreign software. It provides that an end-user may import a single copy of a software program for its exclusive use.[110] These imports are not subject to the cataloguing requirements discussed above.[111] In its regulations, SEI clearly took note of the legislators' intent in drafting the Software Law to facilitate the direct importation of software by end-users. Other software programs not subject to the cataloguing requirement include those imported by an end-user for its exclusive use when the programs are: 1) associated with machines, equipment and devices based on digital technology, or 2) resident and integrated in machines, equipment and devices based on digital technology when such programs are not marketed separately from the product in which they are contained.[112]

Some unusual provisions designed to protect consumers of software also appear in the law.[113] In general, articles 23-26 guarantee that the

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106. Software Law, *supra* note 81, art. 27.
107. *Id.* art. 28.
108. *Id.* art. 29.
109. *Id.*
110. *Id.* art. 30.
111. Software Law Implementing Regulations, *supra* note 87, art. 14(I).
112. *Id.* art. 14(II)-(III).
113. Software Law, *supra* note 81, arts. 23-26.

user will receive, during the period of technical validity of the software, corrections of any errors as well as complementary technical services.[114] During the same validity period, the software may not be withdrawn from the market without fair compensation for any damages caused to third parties.[115] The holder of rights over computer programs is also responsible to the consumer for adequate technical quality.[116]

4. *Functional Equivalence*

In SEI's Implementing Regulations, the agency's evaluation of the "national similar" or "functional equivalent" is a significant indicator of the restrictiveness of the agency *vis-à-vis* software developed by non-national companies. In examining a non-national company's software for similarity, SEI will look at its current list of catalogued national companies' software programs to determine whether the non-national software program is similar to any program on this list.[117]

The determination of functional equivalence itself is a result-oriented three-prong test. The first functional equivalence issue is whether the non-national company's software product has "substantially the same performance characteristics" as the catalogued national company's product.[118] SEI's evaluation of similarity under this prong is conducted by measuring the memory requirements, processing time and the number of users and systems for each of the two programs.[119] To be similar, these parameters must produce essentially the same result.[120]

Functional equivalence under the second prong depends upon whether the two programs operate in similar equipment in similar environments.[121] Determination of this aspect of similarity means that the program developed by the non-national company is compatible with equipment and operating systems in Brazil, as is the national company's comparable program.[122]

The final prong of functional equivalence is determined by establishing whether the two programs "execute substantially the same func-

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114. *Id.* art. 24.

115. *Id.* art. 25.

116. *Id.* art. 26.

117. Software Law Implementing Regulations, *supra* note 87, art. 17(1).

118. Software Law, *supra* note 81, art. 10; Software Law Implementing Regulations, *supra* note 87, art. 3.

119. Software Law Implementing Regulations, *supra* note 87, art. 3(b).

120. *Id.* art. 3(a).

121. Software Law, *supra* note 81, art. 10; Software Law Implementing Regulations, *supra* note 87, art. 3(c).

122. Software Law Implementing Regulations, *supra* note 87, art. 3(c).

tions."[123] SEI's evaluation in this area will again look to results. The results here are the outputs for a specified set of entry data. If the two programs present equivalent outputs for the same entered data, the programs will be considered "similar" under this prong of the functional equivalence test.

As previously mentioned, in the first effective year of the software law, SEI has granted most foreign software manufacturers' cataloguing requests. Consequently, the functional equivalence test has not presented a cumbersome barrier to commercialization.[124] Although the number of refusals based on the existence of a functionally equivalent Brazilian software product is small,[125] a foreign manufacturer intending to market software in Brazil should not assume that the functional equivalence test has become pro forma. If functional equivalence is at issue in a cataloguing request, the foreign manufacturer may find itself facing a series of bureaucratic hurdles to overcome.[126]

C. PENALTIES

The Software Law provides both criminal and civil penalties for copyright infringement. Copyright infringement is punishable by fines (not yet determined) and by imprisonment for six months to two years.[127] Those who import, display or store software of foreign origin that is not catalogued correctly face imprisonment for one to four years

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123. Software Law, *supra* note 81, art. 10; Software Law Implementing Regulations, *supra* note 87, art. 3.

124. *See supra* text accompanying note 80.

125. Georges Fischer estimates that less than 1% of foreign manufacturers' cataloguing requests have been refused. Fischer interview, *supra* note 80.

126. Andreia A. Gomes, a transactions lawyer in Rio de Janeiro, described the difficulties she encountered while attempting to catalogue a U.S. software manufacturer's product at SEI. Unknown to her, a Brazilian software manufacturer had contested the cataloguing request of Ms. Gomes' client. SEI, upon receipt of the Brazilian company's claim of functional equivalence, halted the U.S. company's cataloguing request. Contrary to its responsibilities, SEI did not contact Ms. Gomes, the U.S. company's attorney, so that she could respond to the Brazilian company's claim. Fortuitously, Ms. Gomes learned of the contested claim through unofficial channels and was able to put together materials to dispute the existence of functional equivalence. Ms. Gomes notes that while overall the number of denials based upon functional equivalence may be small, if there is a dispute as to the existence of a similar Brazilian product, SEI's bureaucratic inefficiencies in handling such contested claims may result in denial or long delays in securing cataloguing approval. In her client's case, it has been one year since the cataloguing request was initially submitted to SEI. Although approval is expected shortly, her client still has not received official notification of acceptance. These delays will increase the costs of marketing products in Brazil, and if the number of contested claims increases, one might expect foreign software manufacturers to be dissuaded from attempting to enter the Brazilian software market. Interview with Andreia A. Gomes, attorney with the law firm of Stroeter, Trench and Veirano, in Rio de Janeiro (Apr. 3, 1989).

127. Software Law, *supra* note 81, art. 35.

and a fine.[128] In addition to criminal action, a civil action for injunctive relief, including seizure of illegally produced software copies, may be filed by the injured party.[129] Other remedies include compensatory and punitive damages that will be assessed on a daily basis until the infringement ceases.[130]

D.   ADMINISTRATIVE STRUCTURE

The Software Law works within the administrative structure established by the Informatics Law—CONIN, SEI, and INPI—with the addition of the Central Bank and CNDA. SEI's role under the new legislation is to catalogue the software, including software developed by non-national companies. Also, SEI is responsible for the renewal of software cataloguing, analysis of computer program development projects and the issuance of opinions regarding any importation of computer programs.[131] INPI plays a role under the Software Law only when technology transfer is an issue.[132] INPI's direct participation would be required where parties to a commercialization agreement decide to transfer software technology or where SEI decides that a transfer of software technology is essential to Brazil's development strategy. CONIN becomes involved when an appeal from an SEI decision is presented.[133] The Central Bank of Brazil continues in its traditional role of authorizing remittance payments of foreign currency for imports, including software programs imported by the final user and destined for its exclusive use.[134] CNDA, a very new member to this administrative structure, is responsible for selecting an agency to regulate the registration of software, deciding on appeals from registration denials and issuing norms that regulate the registration process.[135]

E.   VETOED PROVISIONS

As passed by the Brazilian Congress, the Software Law included a number of provisions that were subsequently vetoed by President

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128. *Id.* art. 37.
129. *Id.* art. 39.
130. *Id.*
131. Software Law Implementing Regulations, *supra* note 87, art. 7(II).
132. *Id.* art. 7(III).
133. *Id.* art. 7(I).
134. *Id.* art. 7(V).
135. *Id.* art. 7(IV). CNDA has designated INPI as the entity that will handle the registration of software programs. Apparently, CNDA was not consulted about its obligations under the Software Law or the Implementing Regulations and decided to avenge itself by thrusting the registration responsibility onto INPI. In turn, INPI has made the registration process complicated through excessive formalities. Although INPI's complications are burdensome, they are not disastrous because neither software protection nor marketing is dependent upon registration with INPI. Fischer interview, *supra* note 80.

Sarney. The most important vetoed provision mandated the inclusion of a surcharge on imported computer programs as a second criterion for licensing the product in Brazil.[136] The idea behind the provision was to create a fund for technical development in the software sector with the monies received through imposition of the surcharge. The fund, in turn, would have been used to finance national companies apt to develop "Brazilian" programs. This veto has caused the most controversy and thus is an item that may be reconsidered by the Brazilian Congress.[137]

III. ANALYSIS

The Software Law mixes rules on protection with rules on marketing, although the two issues have independent provisions. In both areas, the law deserves some criticism.

The copyright protection scheme embodied in the law leaves many open questions. One basic question concerns what software is protected. While the law supposedly grants legal protection to all computer programs,[138] the definition of computer program does not make clear whether both application and operating system programs are eligible for copyright protection.[139] Confusion arises from this vague definition, and it may lead to arbitrary decisions by SEI. For example, software in-

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136. Software Law Implementing Regulations, *supra* note 87, vetoed arts. 16-22. For the content of the vetoed provisions, see *O projeto do "software" recebe um novo texto*, Gazeta Mercantil, Nov. 12, 1987, at 14, col. 1.

137. Upon receiving notice of President Sarney's vetoes, Francisco Ramalho, then president of the Brazilian Association of Informatic Service Companies (ASSESPRO), sent a telegram to Sarney commenting on the grave mistake of his action. Ramalho stated that Sarney's vetoes essentially took away the market reserve system in the software area and "transform[ed] the mechanism of market reserve, which depends on SEI's discretion in determining functionally equivalent national programs, into the principal protection for local software." Telegram from Francisco Ramalho, President of the Brazilian Association of Informatic Service Companies, to President Jose Sarney (Jan. 4, 1988) (discussing presidential vetoes of portions of the Software Law) (on file with the *Stanford Journal of International Law*).

Ramalho's association is an important lobbying group in the development of the Software Law. The association would argue that a temporary market reserve system is necessary for local development, yet it recognizes the need for a system that does not entirely alienate foreign software producers. Ramalho's association does not credit any official or private entity with the capability of determining which programs should be barred for being "national similars," given the speed and diversity with which software applications evolve. The views of organizations like ASSESPRO are important since they demonstrate opposition to President Sarney's vetoes. Such opposition may in fact lead to a reconsideration of the vetoed provisions by the Brazilian Congress. Interview with Francisco Ramalho, former President of the Brazilian Association of Informatic Service Companies, in Rio de Janeiro (Apr. 19, 1988) [hereinafter Ramalho interview].

138. Brazilian Copyright Law, *supra* note 89, art. 1.

139. *Id.*

cluded in ROM (read-only-memory) plates could be construed as ineligible for protection. It is unfortunate that the Implementing Regulations do not clarify whether distinctions in legal protection exist between various types of programs.

The protective scheme outlined in the Software Law is unclear as well in its treatment of ownership of derivative works. Generally, according to Brazilian copyright law, works derived from other existing works are protected as autonomous creations.[140] The economic exploitation of such derivative works, however, may only be independent if authorized by the owner of the original work.[141] The Software Law deals with this issue only rudimentarily. Article 6 attributes rights to technological changes and derivatives to "the authorized person who makes the changes."[142] It is unclear how "authorization" occurs. The law is also ambiguous about who owns the economic rights to such changes. Given the market reserve policy, this issue is particularly important. Perhaps article 6 is meant to be a loophole allowing indeterminately "authorized" adapted copies to be autonomous creations, with concurrent rights to economic exploitation. The Implementing Regulations should be amended to restrict rights to economic exploitation of derivative software to only those cases where express authorization has occurred.

In the Software Law's first year in effect, no protection issues have been litigated. Nonetheless, because of the law's imprecise definition of protected programs and its vagueness with respect to ownership of derivative works, software piracy continues to occur in Brazil. Both Brazilian and foreign software manufacturers should act quickly to combat this piracy by pursuing copyright infringement test cases in Brazilian courts.[143] Failure to test the scope of protection through legal actions most likely will result in continued uncertainty. Judicial decisions in this area would aid both Brazilian and foreign software manufacturers by providing clearer guidelines and greater definition to the protection outlined in the software legislation.

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140. *Id.* art. 4(VI)(g).

141. *Id.* art. 6(XII). Authorization is required because the independent use of the derivative work would involve a reproduction of, or at least a benefit from, the work of the author of the original work.

142. Software Law, *supra* note 81, art. 6.

143. Francisco Ramalho of the Brazilian Association of Informatic Service Companies notes that the continuance of software piracy is a key issue that must be faced by Brazilian manufacturers if they want to foster a local industry. As such, in his opinion, the market must be disciplined through legal actions. Because the need for protection is recognized by both Brazilian and foreign software manufacturers, a joint legal action designed to demonstrate the strength of legal protection embodied in the Software Law should be undertaken. Interview with Francisco Ramalho, former President of the Brazilian Association of Informatic Service Companies, in Rio de Janeiro (Mar. 31, 1989).

Vague language also muddles the provisions affecting the marketing, sale and other forms of commercial distribution of software. Normally, Brazilian copyright protection extends rights to the author of a literary, artistic or scientific work "to use, profit from and dispose of a . . . work" and to "authoriz[e] its use or exploitation, in whole or in part, by third parties."[144] The Software Law, however, complicates the economic rights found in copyright protection by introducing a number of rules and regulations regarding the commercialization of software. The most burdensome of these provisions, from a U.S. standpoint, is also the most amorphous; cataloguing by SEI, which is a prerequisite to marketing in Brazil, will not be made when foreign software is deemed to be "functionally equivalent" to an already existing national software product.

Although SEI, in the law's first effective year, has liberally construed the functional equivalence test,[145] there is no guarantee that future evaluations will generate positive results for foreign software manufacturers. The law's definition of "functionally equivalent" remains ambiguous and may trigger inequities due to subjective interpretations by SEI and to SEI's unwillingness or technical inability to recognize improvements.[146] Products that perform equivalent functions may have radically different levels of performance, quality and availability. Yet, the Software Law does not recognize such distinctions. Furthermore, the law requires this evaluation every three years, when all software in the market must have its enrollment renewed.[147].

It is possible that SEI's current generosity in granting foreign software manufacturers' cataloguing requests is due to SEI's rather weak political position.[148] Since SEI's defeat in the Microsoft case in January 1988, the agency may feel that its power is slipping.[149] If SEI increased its political strength, the ambiguous "functionally equivalent" provision might be interpreted to exclude many foreign software products, even those with current commercialization authorization. In order to avoid the possibility of SEI adopting a chameleonic posture in applying the law, the Implementing Regulations should be amended to more precisely define the term "functionally equivalent."

The provision nullifying any clauses restricting the exportation of software products is also problematic. Although the desire of Brazilian companies to export licensed software products is understandable, the

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144. Brazilian Copyright Law, *supra* note 89, art. 29.

145. *See supra* text accompanying note 84.

146. In this regard, recall the Microsoft case. *See supra* notes 57-77 and accompanying text.

147. Software Law, *supra* note 81, art. 9.

148. Fischer interview, *supra* note 80.

149. *Id.*

blanket coverage of this article creates obstacles to the execution of marketing agreements for foreign software. The laws of many foreign countries restrict exportation of technology products. For example, the U.S. Export Administration Act of 1979 imposes restrictions on the re-exportation of certain products, and U.S. companies are obligated to ensure that their licensees or distributors respect such restrictions.[150] Because of this legitimate and frequently encountered restriction by foreign countries, the Implementing Regulations should be amended to accommodate such foreign laws.

The legislative provision for regulating remuneration in the marketing of foreign software also needs to be clarified. As structured, the law provides for remuneration to be a fixed sum per copy, in accordance with international practice, and it does not allow any other kind of payment.[151] The legality of payment for associated technical documentation is unclear. In most cases, the distributor will need the source code to be able to render support and technical assistance services, yet the law does not address payment for the source code. By avoiding these two controversial questions, the legislature left the issue of remuneration confusing and uncertain. Clarification is needed on whether separate payments for the user manual and the source code are allowed. Even if payment for user manuals is forbidden, payment for the delivery of the source code should be allowed in accordance with international practice.

A related aspect of remuneration that is creating problems for Brazilian distributors of foreign software is the difficulty they experience in sending remittances out of Brazil.[152] The Software Law's Implementing Regulations provide the Central Bank with authorization to remit foreign currency for payment of SEI-approved and end-user computer program imports. Unfortunately, due to hard currency problems faced by Brazil and to bureaucratic entanglements, the Central Bank is not cooperating.[153] Distributors are thus faced with long delays in securing official approval to remit payments to foreign software manufacturers. If the Central Bank continues to be uncooperative, distributors will face increased transaction costs. An increase in costs to the distributors translates into higher costs for foreign software manufacturers as well. Foreign software producers desiring to export products to Brazil will need to consider market distortions that may be caused by the Central Bank's dilatory responses to remittance requests. The Implementing

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150. Export Administration Act, § 5, 50 U.S.C. § 2404 (App. IV 1986).
151. Software Law, *supra* note 81, art. 29.
152. Fischer interview, *supra* note 80.
153. *Id.*

Regulations or the Software Law should be amended to rectify the Central Bank's uncompromising attitude.

Reintroduction of the vetoed surcharge on software imports also would improve the Software Law. A surcharge might lead to Central Bank cooperation by easing the hard currency problem. If the surcharge was borne by the foreign software producer, fewer dollars would exit the country. An alternative suggestion is an amendment designed to reduce hard currency concerns by allowing free remittance for foreign software at fluctuating exchange rates.[154] Remittance at the fluctuating free market rate of exchange would more accurately reflect distribution costs and would eliminate Central Bank concerns that software remittances create a dangerous opening for the exit of hard currency at low official rates of exchange.

A final criticism of the law concerns an important economic aspect of copyright protection—the right to prevent unauthorized third parties from infringing the intellectual property right attached to computer programs. Compared with the penalty established for the clandestine entry of foreign software for marketing in Brazil (imprisonment for one to four years and a fine),[155] the penalty for infringement of the software owner's rights is very light—imprisonment for six months to two years and a fine.[156] The penalty for software copyright infringement is also lighter than the penalty imposed for the infringement of non-computer program copyrights—imprisonment for one to four years and a fine.[157] In view of the repeated practice of software piracy in Brazilian territory, it seems equitable that the penalty for infringement of software rights be amended to at least equal the penalty established for non-computer program copyrights—imprisonment for one to four years and a fine.

A. EFFECTS ON BRAZILIAN SOFTWARE MARKET

Brazilian businesspersons are concerned about the effect of the law on the Brazilian software market. In their view, the law does achieve a legal framework for software protection and commercialization, but its inadequacies reflect various concessions made in order to appease U.S. interests in the short-term.[158] As a result, they believe the law lacks coherence and will prove ineffective in treating the complex questions associated with software development and marketing.

For example, the market reserve policy embodied in the law is con-

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154. *Id.*
155. Software Law, *supra* note 81, art. 37.
156. *Id.* art. 35.
157. CÓDIGO PENAL [C.P.], art. 184(1).
158. Ramalho interview, *supra* note 137.

sidered counterproductive to the development of a national software industry.[159] The industry views this system, in which the primary mechanism for the market reserve is SEI's evaluation of a product's "functional equivalence," as allowing a governmental agency too much discretion in deciding which foreign products are subject to exclusion.[160] The uncertainty resulting from discretionary use of the functional equivalent exclusion will discourage national development because *Brazilian* developers will not know whether they can count on the protection of the "market reserve."[161] Senator Roberto Campos, who opposed the functional equivalent provisions of the law, asserts that because of the functional equivalence test, Brazil will not develop competitive software products.[162]

To aid in the development of competitive products, Brazilian software manufacturers believe that a better plan for market protection is necessary. In the industry's opinion, software is now the only area of informatics products in which Brazilian manufacturers must compete on even terms with foreign manufacturers.[163] If the market protection scheme for Brazilian software is not made more predictable and exclusive than the "functional equivalence" test, the Brazilian software market is likely to be characterized by a decrease in local development of software and a corresponding increase in the number of Brazilian distributors of foreign software.[164]

One beneficial impact of the new law is the development of more sophisticated distribution channels in the Brazilian software market. Due to the number of foreign products entering the Brazilian market, a radical change in software distribution channels has occurred.[165] Prior to the passage of the Software Law, Brazilian software producers paid little attention to the importance of distribution channels in the marketing of products.[166] Since competition with foreign products was legally nonexistent, Brazilian software manufacturers did not contend with foreign manufacturers for room on distributors' shelves. With the onslaught of foreign products now legally available in Brazil, domestic manufacturers need to evaluate closely the distributor's role in the com-

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159. *Id.*

160. *Id.*

161. In Francisco Ramalho's opinion, the best instrument for promoting national development of software, combatting piracy and regulating software is the (vetoed) surcharge on software products combined with minimal oversight on SEI's part. Ramalho interview, *supra* note 137; *see supra* text accompanying note 136.

162. Interview with Senator Roberto Campos, in Brasilia (Mar. 29, 1988).

163. *Id.*

164. *Id.*

165. Interview with Francisco Ramalho, former President of the Brazilian Association of Informatic Service Companies, in Rio de Janeiro (Mar. 31, 1989).

166. *Id.*

mercialization of software products. An examination would benefit Brazilian manufacturers by increasing their knowledge of the distribution channel's importance in software marketing. Also, benefitting from this knowledge, Brazilian software manufacturers could expect to compete more effectively with foreign manufacturers in Brazil as well as abroad.

B. IMPACT ON U.S. COMPANIES

The Software Law provides some legal protection to U.S. software companies where none existed before. The new law has not eliminated software piracy,[167] and thus far legal recourse is available only in theory. To bridge the gap between theoretical and actual protection, a software copyright infringement test case is necessary. Ideally, such a test case would determine the scope of protection afforded by the law, as well as establish the Software Law's deterrent force. Most Brazilian software experts agree that mere passage of the Software Law has discouraged some piracy of U.S. software products.[168] U.S. companies victimized by piracy, however, need judicial action to give teeth to the new law. Until unauthorized use of software is punished through civil fines and criminal sentences, U.S. companies will continue to suffer losses. These losses include the transfer of economic benefits from legitimate U.S. software producers to local counterfeiters, pirates and other infringers.

A second major change engineered by the Software Law is the opening of the Brazilian market to U.S. companies. Before 1988, the Informatics Law's market reserve system effectively excluded all foreign software manufacturing companies from legally competing in Brazil. Notwithstanding the legal barriers, some U.S. software (mostly pirated copies) was available on the black market. Beginning in 1988, the Software Law established an independent market reserve system for software, opening Brazil's market to foreign products overcoming the "functional equivalence" test. Thus far, SEI's application of the test has allowed U.S. companies broad access to the Brazilian software market. SEI, however, has substantial discretion, and a different interpretation of functional equivalence could close the door to U.S. companies that was opened by the software legislation of December 1987. U.S. software manufacturers should, therefore, monitor the implementation of the functional equivalence test and seek to narrow the definition of functional equivalence in their favor. In addition, U.S. software manufacturers should resist Brazilian efforts to supplement the market reserve system for software by adding restrictions that go beyond the functional

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167. Fischer interview, *supra* note 80.
168. *Id.*

equivalence test. If Brazil institutes stricter market reserve mechanisms, SEI's current approval of most foreign software cataloguing requests is likely to be discontinued.

IV. CONCLUSION

Brazilian and American software concerns should continue to track software developments in Brazil with particular attention. The Software Law has altered dramatically the protection, marketing and commercialization of software. Political and judicial action is still needed, however, to ensure protection against software copyright infringement and to harmonize Brazilian and U.S. interests regarding market access. Because a consensus between Brazilian and U.S. companies currently exists in this area, efforts should begin with bringing test cases against software pirates to deter infringement. A judicial finding of copyright violations in such cases, combined with imposition of civil and criminal penalties, would signal software pirates that infringement will not be tolerated. Furthermore, joint legal action by Brazilian and U.S. software manufacturers aimed at piracy is needed to send a clear message that infringement of neither Brazilian nor foreign software is acceptable. Interests are at loggerheads, however, regarding access to Brazil's software market. Brazilian companies seek a restrictive market reserve system to insulate their products from competition. In contrast, U.S. companies will continue to resist Brazilian efforts to exclude foreign software. It is unlikely that U.S. and Brazilian interests ever will converge completely on this issue. However, by focusing on areas of common interest, Brazilian and U.S. advocates can help forge a more productive and profitable software market in Brazil.

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