Copyright Protection of Software in the EEC: The Competing Policies Underlying Community and National Law and the Case for Harmonization

A tension exists between the European Economic Community's (EEC's) promotion of a common market and its member-states' retention of national copyright laws. In some instances, enforcement of copyright restrictions by individual member-states restrains or otherwise distorts trade. Yet article 3 of the Community's enabling treaty[1] requires the elimination of quantitative import and export restrictions and of all other measures having equivalent effect.[2] It further requires the abolition of obstacles to the free movement of services, and it ensures undistorted Community-wide market competition.[3] Uneven enforcement of uneven copyright law, as shall be seen, may contravene each of these Community goals.[4] The current worldwide debate regarding the copyrightability of software acquires special significance in the EEC, therefore, since the issue brings these problems sharply into focus.

The Community's legal treatment of software implicates more than merely jurisprudential interests, however. World markets for all information technology products are expected to increase at a real growth rate of greater than eight percent annually.[5] By 1992, the consumption of such products worldwide will have grown to approximately $760 billion, up to thirty percent of which may be spent within Europe.[6] The software

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1. Treaty of Rome, Mar. 25, 1957, art. 3, 298 U.N.T.S. 11, 15-16.

2. *Id.* art. 3(a), 298 U.N.T.S. at 15-16.

3. *Id.* arts. 3(c), 3(f), 298 U.N.T.S. at 15-16.

4. For full discussions of the relationship between copyright law and EEC law, see generally S. STEWART, INTERNATIONAL COPYRIGHT AND NEIGHBOURING RIGHTS 466 (1983); Dietz, *The Harmonization of Copyright in the European Community,* 16 IIC INT'L REV. INDUS. PROP. & COPYRIGHT L. 379 (1985) [hereinafter Dietz, *Harmonization*]; Dietz, *Copyright Issues in the E.E.C.: The Recent Decisions of the European Court of Justice and of the Commission,* 30 J. COPYRIGHT SOC'Y 517 (1983) [hereinafter Dietz, *Issues*]; Harris, *Community Law and Intellectual Property: Recent Cases in the Court of Justice,* 19 COMMON MKT. L. REV. 61 (1982); *see also* Bumbak, *Industrial Property Rights and the Free Movement of Goods in the European Communities,* 16 CASE W. RES. J. INT'L L. 381 (1984) (including patent and trademark developments).

5. *See* Woolcock, *Information Technology: The Challenge to Europe,* 22 J. COMMON MKT. STUD. 315, 318 (1984).

6. *Id.; see also* Nasko, *European Common Market,* INST. ELECTRICAL & ELECTRONICS ENGINEERS SPECTRUM, Nov. 1983, at 71.

servicing this growth could continue to be imported or, as this Comment argues, it could instead become a major factor in the Community's revitalization of its information technology industries.[7]

By consciously harmonizing, and perhaps softening, national copyright laws, the Community's member-states should each be able to establish a larger market for its nationals' software products. This increased market could in turn spur further production and consumption of software goods and services. If coupled with a program of hardware standardization, the increased uniformity might soon enable Europe to appropriate a larger portion of the global information industry's profits to itself.[8]

But even setting aside the economic potential of a standardized Community-wide software market, harmonization of disparate and disputed legal rules serves even deeper purposes. The fashioning of a common European solution to a common European problem can only further the Community's essential goal: Continued political integration via economic and legal measures.

This Comment, then, proceeds in five steps. First, in Part I, it outlines the current Community case law insofar as that law delineates copyright as an exception to the otherwise unrestricted free movement of Community goods and services. Next, in Part II, it briefly defines "software" and highlights the issues involved in this item's protection as intellectual property. In Part III, the Comment analyzes the protection afforded by each of the Community's member-states in light of its legislative action or inaction, case law, and/or statements to the world intellectual property community. Part IV discusses a number of problems that may arise as the demand for sophisticated programming and telecommunications increases transnationally within the Community. Finally, in Part V, the Comment analyzes these problems in relation to a series of possible technical and legal solutions that seek to balance the competing interests involved in software dissemination, concluding that any concerted action should be preferred to the present inertia.

I

COPYRIGHT LAW IN RELATION TO EEC LAW

Because the authority of a country granting copyright protection can only extend to its borders, differences in national copyright laws tend

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7. *Cf.* Woolcock, *supra* note 5, at 322-24.

8. Of course, the dangers associated with the current reliance on imported information technology, including potential economic losses, have not been lost upon Community actors. *See, e.g.,* Raines, *Common Market Competition Policy: The EC-IBM Settlement,* 24 J. COMMON MKT. STUD. 137, 140-44 (1985) (reviewing Commission's antitrust action against IBM and problems associated with that company's dominance of European computer markets).

to define markets of varying opportunity for rights-holders in a given
work. Presumably, authors prefer to market in jurisdictions actively pro-
tecting the authors' monopoly. The territorial nature of copyright thus
tends to delimit advantageous markets in goods and services. Where,
however, the copyright laws of individual member-states affect the free
movement of Community goods and services, or where they distort Com-
munity-wide market competition, the laws contravene basic EEC policy.[9]
The European Court of Justice has focused on this tension in a number
of recent decisions and has now developed a fairly coherent (if controver-
sial) view of copyright's function within the Community.

The Court of Justice laid the groundwork for its recent decisions in
1971, in the *Deutsche Grammophon* case,[10] in which "rights akin to copy-
right" were at issue. Deutsche Grammophon produced and distributed
records throughout the Community, but retained exclusive distribution
rights within Germany, the site of its corporate headquarters.[11] The
adverse party, Metro, had at one time marketed Deutsche Grammophon
goods in Germany, but Deutsche Grammophon terminated the parties'
relationship. Metro later purchased, through an unrelated third party, a
quantity of Deutsche Grammophon records that had been obtained from
Polydor, Deutsche Grammophon's subsidiary in Paris. Metro marketed
the recordings in Germany, thereby undercutting Deutsche Gram-
mophon's established domestic retail price structure.[12]

In its suit for injunction, Deutsche Grammophon argued that it had
not yet marketed the relevant recordings in Germany, and that therefore,

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9. With the recent addition of Spain and Portugal, the European Economic Community now
consists of twelve member-states: France, the United Kingdom, the Federal Republic of Germany,
Italy, Belgium, the Netherlands, Luxembourg, Denmark, Ireland, Greece, and the two Iberian
states. By signing or acceding to the Community's enabling treaty, *see supra* note 1, each of these
nations agreed to cede limited sovereign authority to the "economic union" thereby created.

Article 2 defines the Community's economic task as promoting "a harmonious development of
economic activities" by creation of a common market. Treaty of Rome, *supra* note 1, art. 2, 298
U.N.T.S. at 15. Article 3 details the means for implementing the common market among the
member-states, mandating: (1) the elimination of customs duties and quantitative restrictions on
trade; (2) the establishment of a common customs tariff and commercial policy towards third party
countries; (3) the abolition of obstacles to free movement of persons, services, and capital; (4) the
adoption of a common policy as to both agriculture and transport; and (5) the institution of a system
ensuring that intra-Community competition not be distorted. *Id.* art. 3, 298 U.N.T.S. at 15-16.

The European Court of Justice, authorized in article 164 of the Treaty, adjudicates
controversies related to the union. The European Commission acts as a Community ministry
empowered to define and set Community economic policy, to implement programs aimed at further
economic integration, and to bring cases before the Court of Justice where deemed necessary. *Id.*
art. 155, 298 U.N.T.S. at 71, art. 169, 298 U.N.T.S. at 75.

For a concise history and structural description of the EEC, see E. STEIN, P. HAY & M.
WAELBROECK, EUROPEAN COMMUNITY LAW AND INSTITUTIONS IN PERSPECTIVE 1-16 (1976).

10. Deutsche Grammophon Gesellschaft v. Metro-S.B.-Grossmärkte, 1971 E. Comm. Ct. J.
Rep. 487, 10 Common Mkt. L.R. 631 (1971).

11. *Id.* at 504-05, 10 Common Mkt. L.R. at 635.

12. *Id.* at 503-04, 10 Common Mkt. L.R. at 634.

under German law, it had not yet exhausted its exclusive distribution right. On reference,[13] the European Court of Justice decided otherwise:

> [I]t would be in conflict with the provisions prescribing the free movement of products within the common market for a manufacturer . . . to exercise the exclusive right to distribute . . . conferred upon him by the legislation of a Member State . . . solely because [first] distribution did not occur within the territory of [that] Member State.[14]

Thus, once a manufacturer consents to distribution of its tangible works anywhere within the Community, national copyright law, at least with reference to "neighboring rights,"[15] cannot impede the free trading of those goods. In effect, the Court decided that article 36 of the EEC Treaty—which allows national prohibitions or restrictions on imports, exports, and goods in transit insofar as the prohibitions legitimately relate to protecting "industrial and commercial property"[16]—deals only with the existence of such rights and not necessarily with their exercise.[17] If application of national law would contravene Community policy without safeguarding the essence of the owner's exclusivity rights, the Community's goal of establishing a uniform transnational market must prevail.[18]

In reaching its decision, the Court of Justice carefully left aside the issue of copyright's relation to article 36, preferring to rule "[o]n the assumption that those provisions *may* be relevant to copyright" without deciding the point.[19] Four cases decided in the 1980's unequivocally resolve this problem, however. In each, the Court of Justice found that copyright is one of the "industrial and commercial property rights" named in article 36; consequently, the distinction between existence and exercise of those rights applies fully.[20] Thus, in the *GEMA* decision,[21]

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13. The Court of Justice has jurisdiction over the interpretation of the Community's treaty, the validity and interpretation of acts of Community institutions, and the interpretation of statutes of bodies created by act of the Community's governing Council. A member-state court may refer questions on such issues to the Court of Justice for an authoritative ruling. Treaty of Rome, *supra* note 1, art. 177, 298 U.N.T.S. at 76-77.

14. *Deutsche Grammophon,* 1971 E. Comm. Ct. J. Rep. at 500, 10 Common Mkt. L.R. at 657-58.

15. Traditional copyright protects written material. "Neighboring rights" encompass the protection extended to photography, sound recordings, film, radio, and television. *See* S. STEWART, *supra* note 4, at 174-210 (general discussion).

16. Treaty of Rome, *supra* note 1, art. 36, 298 U.N.T.S. at 29. Article 36 further provides that "[s]uch prohibitions or restrictions shall not . . . constitute either a means of arbitrary discrimination or a disguised restriction on trade between Member States." *Id.*

17. *Deutsche Grammophon,* 1971 E. Comm. Ct. J. Rep. at 499-500, 10 Common Mkt. L.R. at 657.

18. *Id.* For a concise exposition of this rule, see Reischl, *Copyright Law and the Free Movement of Goods in the Common Market,* 18 COPYRIGHT 116, 116-17 (1982).

19. *Deutsche Grammophon,* 1971 E. Comm. Ct. J. Rep. at 499-500, 10 Common Mkt. L.R. at 657 (emphasis added).

20. *See* Dietz, *Issues, supra* note 4, at 519; *see also* Dietz, *Harmonization, supra* note 4, at 379-

where the German Copyright Protection Society (GEMA) sought to levy a royalty fee on imported recordings, its attempted exploitation of existing national law was curtailed in favor of Community law. The Court found that legislation obstructing trade in sound recordings constituted a measure equivalent to a quantitative restriction on imports which could not be justified under article 36.[22] Allowing the additional fees to be levied on products that had been marketed within the Community with the owners' consent, merely because those products had crossed a member-state's border, would "have the effect of entrenching the isolation of national markets which the Treaty seeks to abolish."[23]

In this case, the copyright owners had consented to the manufacture and marketing of their recordings in a number of member-states, including the United Kingdom, where the copyright owner's percentage of royalties for manufactured recordings amounted to 6.25% of retail price. However, GEMA, per German law, collected eight percent of retail price for such owners and levied a fee on the imported recordings in order to make up the difference. In deciding against GEMA, the Court of Justice pointed out that the owner has the choice of his or her original site of publication. The Court wrote that "It follows from the foregoing considerations that the disparities which continue to exist in the absence of any harmonization of national rules on the commercial exploitation of copyrights may not be used to impede the free movement of goods in the Common Market."[24]

The two *Coditel* decisions[25] established another basic tenet of Community copyright jurisprudence: tangible works and intangible acts of public communication must be strictly differentiated.[26] The dispute involved the validity of an exclusive exhibition right granted a Belgian film distribution company, Ciné Vog. La Boetie, the producer of the film in question, had also assigned broadcast rights to the Federal Republic of Germany's government-owned television station. Ciné Vog, whose license was geographically limited to the Belgian borders, marketed the

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80 (copyright must comply with Community law to the same extent as patents and trademarks). Dietz characterizes the *Coditel-GEMA-Imerco* series of decisions as "the real beginning of copyright jurisprudence of the European Court." Dietz, *Issues, supra* note 4, at 517.

21.   Musik-Vertrieb Membran GmbH and K-Tel Int'l v. GEMA, 1981 E. Comm. Ct. J. Rep. 147, 31 Common Mkt. L.R. 44 (1981).

22.   *Id.* at 161, 31 Common Mkt. L.R. at 63-64. Article 30 prohibits quantitative restrictions on imports. Treaty of Rome, *supra* note 1, 298 U.N.T.S. at 26.

23.   *GEMA*, 1981 E. Comm. Mkt. J. Rep at 163-64, 31 Common Mkt. L.R. at 65-66.

24.   *Id.* at 165, 31 Common Mkt. L.R. at 67.

25.   Compagnie Générale pour la Diffusion de la Télévison, Coditel v. Ciné Vog Films, 1980 E. Comm. Ct. J. Rep. 881, 31 Common Mkt. L.R. 362 (1981); Coditel, Compagnie Générale pour la Diffusion de la Télévision v. Ciné Vog Films, 1982 E. Comm. Ct. J. Rep. 3381, 36 Common Mkt. L.R. 49 (1983) [hereinafter *Coditel I* and *Coditel II*, respectively].

26.   *See* Dietz, *Harmonization, supra* note 4, at 386-87.

film in theaters. In the meantime, three Belgian cable television companies, collectively referred to as Coditel, intercepted the German television broadcasts and distributed the film by cable to their subscribers.

In defending a series of infringement suits, Coditel argued that the film's copyright protection had been exhausted with its first licensed performance. According to Coditel, a copyright owner could not restrain a free flow of services—including rebroadcast—once the owner had consented to performance anywhere within the Community.[27]

The Court of Justice distinguished its copyright/goods cases while accepting the existence/exhaustion principle: "Whilst Article 59 of the Treaty prohibits restrictions upon freedom to provide services, it does not thereby encompass limits upon the exercise of certain economic activities which have their origin in the application of national legislation for the protection of intellectual property . . . ."[28] Copyright protection was not exhausted by initial marketing because the legitimate property interest being protected was the right to calculate licensing fees based upon the film's actual or probable number of showings. The function of copyright in this area was to protect the owner's interest in an infinite number of possible performances.[29]

Thus, unlike in its decisions in *Deutsche Grammophon* and *GEMA,* the Court of Justice here approved the exercise as well as the existence of national copyright legislation, arguing that "the problems involved . . . in relation to the requirements of the Treaty are not the same as those which arise in connexion with literary and artistic works [the circulation of which] is inseparable from the material form of the works, as in the case of books or records."[30]

Coditel had also argued that the creation of exclusive exhibition rights based on national boundaries constituted an anticompetitive restraint of trade prohibited under article 85 of the Treaty. However, the Court of Justice had, by implication, sanctioned this practice in *Coditel I.*[31] In *Coditel II,* facing the question squarely, the Court confirmed the rule.

> [T]he mere fact that the owner of the copyright in a film has granted to a sole licensee the exclusive right to exhibit that film in the territory of a

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27. *Coditel I,* 1980 E. Comm. Ct. J. Rep. at 890-91, [1979-1981 Transfer Binder] Common Mkt. Rep. (CCH) ¶ 8662, at 7835 (1980). Note that article 59 of the Treaty, upon which Coditel relied, provides for progressive abolition of restrictions on the freedom to provide services within the Community. Treaty of Rome, *supra* note 1, 298 U.N.T.S. at 40-41.

28. *Coditel I,* 1980 E. Comm. Ct. J. Rep. at 903, 31 Common Mkt. L.R. at 400.

29. *Id.* at 902-03, 31 Common Mkt. L.R. at 399.

30. *Id.* at 902, 31 Common Mkt. L.R. at 399.

31. *Id.* at 903, 31 Common Mkt. L.R. at 400 ("The question whether an assignment of copyright limited to the territory of a Member State is capable of constituting a restriction on freedom to provide services must be examined in this context.").

Member State . . . is not sufficient to justify the finding that such a contract must be regarded as the purpose, the means or the result of an agreement, decision or concerted practice prohibited by the Treaty.[32]

The Court argued that the "cinematographic" industry might by nature be nationally segmented given the problems of marketing, dubbing, and subtitling for different language groups, the national nature of television broadcasts, and the industry's financing system.[33] Thus, while it was possible that such an arrangement would not be allowed if the practice constituted a disguised restriction or an arbitrary discrimination affecting trade, the Treaty did not prohibit legitimate use of national copyright to segment distribution markets conveniently.[34] The Court returned this question of fact to the national court.

The upshot of the two *Coditel* decisions and *GEMA* is that article 36 of the Treaty governs application of copyright law within the Community. The article recognizes the existence of all such national law and allows its exercise in the protection of a rule's specific subject matter. Where copyright protects inexhaustible performance rights, exploitation that does not amount to a disguised restriction on trade is legitimate. Where, on the other hand, copyright protects the exhaustible right of exploitation by circulation, restriction following a consented initial marketing cannot be allowed.

This basic scheme received further confirmation in *Dansk Supermarked v. Imerco,*[35] a case that largely involved issues of unfair competition, but one that has interesting implications for the law of copyright within the EEC. Imerco, a Danish firm, planned to mark its fiftieth anniversary by allowing its shareholding hardware merchants to purchase and market a limited series of distinctively decorated china services. It commissioned an English enterprise to manufacture the items, which were extensively advertised. The production-run produced approximately 1,000 odd lots of substandard services which, by agreement, the English were allowed to sell outside of Scandinavia. Three hundred of these substandard services found their way to Dansk Supermarked, another Danish enterprise, via various English wholesalers

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32. *Coditel II,* 1982 E. Comm. Ct. J. Rep. at 3401, 36 Common Mkt. L.R. at 66 (quote taken from E. Comm. Ct. J. Rep. translation). Article 85(1) of the Treaty prohibits agreements between undertakings, decisions by associations of undertakings, and concerted practices that may affect trade between member-states if such agreements, decisions, or practices prevent, restrict, or distort competition within the common market. Treaty of Rome, *supra* note 1, 298 U.N.T.S. at 47-48. "Undertaking" has approximately the same meaning in European jurisprudence as "venture" or "business venture" does in the U.S. legal system. It is also often translated as "enterprise."

33. *Coditel II,* 1982 E. Comm. Ct. J. Rep. at 3401, 36 Common Mkt. L.R. at 66.

34. *Id.* at 3401-02, 36 Common Mkt. L.R. at 66; *see* Von Gamm, *Copyright License Contracts and Restrictions Under the EEC Treaty,* 14 IIC INT'L REV. INDUS. PROP. & COPYRIGHT L. 579, 591-92 (1983); *see also infra* notes 142-46 and accompanying text (site licensing).

35. 1981 E. Comm. Ct. J. Rep. 181, 32 Common Mkt. L.R. 590 (1981).

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and a Danish reseller, which had purchased them in the United Kingdom. Thus, Imerco was faced with a parallel import of its supposedly exclusive china and brought suit under a national marketing statute prohibiting the confusing use of another undertaking's "commercial identification marks or other distinctive designs."[36] Dansk Supermarked argued that the statute constituted a restriction on the free movement of goods under articles 30 and 85 of the EEC treaty—a question that was finally referred to the Court of Justice.

The Court relied on its previous rulings and held that where an enterprise such as Imerco consented to the marketing of its goods in a member-state (in this case the United Kingdom), it could not rely on national legislation concerning copyright or trademark to subsequently restrict the goods' free trading.[37] As in *Deutsche Grammophon,* therefore, the Court of Justice found that goods upon which copyrightable material had been imprinted must be treated as ordinary goods. Once consentedly placed in circulation, the property rights created by national legislation and associated with such goods were exhausted. Copyright could no longer restrict Community-wide trading of the items.

The distinction between exhaustible circulation rights for goods and inexhaustible performance rights for services creates a number of conceptual difficulties where "goods" and "services" tend to overlap. For example, if the transborder rental of home-use videocassettes is characterized as a service, the copyright owner's interest in protecting its performance rights within a legitimately licensed market must be honored. If, on the other hand, it is characterized as a movement of goods, the copyright owner's original consent to sell on the videocassette market exhausts its protected interests. Further exploitation cannot be hindered by the original owner.[38]

The difficulty of the distinction is further exacerbated when the item

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36. *Id.* at 184, 32 Common Mkt. L.R. at 592. The suit was brought under Danish Law No. 297 of June 14, 1974.

37. *Id.* at 193, 32 Common Mkt. L.R. at 602. The Court cited "settled" case law, referring specifically to Terrapin (Overseas) Ltd. v. Terranova Industrie C.A. Kapferer & Co., 1976 E. Comm. Ct. J. Rep. 1039, 18 Common Mkt. L.R. 482 (1976) (national trademark law could prevent imports of confusingly named products if the incident did not involve agreements restricting competition).

38. The legal aspects of videocassette rental have yet to be analyzed at the Community level, but the difficulty in characterizing such rentals is illustrated by the current split among the German courts as to an author's right to compensation in this type of downstream exploitation. *See* Lewson, *Current Judicial Decisions in the Federal Republic of Germany Concerning the Rental of Videocassettes,* 15 IIC INT'L REV. INDUS. PROP. & COPYRIGHT L. 488 (1984) (comparing judgment of May 12, 1981, Oberlandesgericht, Hamm, 1981 GEWERBLICHER RECHTSSCHUTZ UND URHERBERRECHT [GRUR] 743 (first sale is not a license unless contractually so specified, therefore creator-manufacturer could not control or prohibit downstream use) with judgment of Jan. 21, 1982, Oberlandesgericht, Frankfurt, 1982 NEUE JURISTICHE WOCHENSCHRIFT 1653 (licensing is not a sale, therefore creator-manufacturer statutorily entitled to downstream profit) and judgment of Dec. 14, 1983, Oberlandesgericht, Karlsruhe, 1984 GRUR 198 (following the Frankfurt decision)).

in question does not clearly embody copyrightable material. Where the arguably protectable matter is utilitarian in character, the law must grapple with the fine lines distinguishing patents, trademarks, protection of designs, and other "commercial or industrial property laws" such as copyright.

It is in this light that computer software presents interesting problems for the European Economic Community. It can be a good or a service, licensed or sold, and can arguably be patentable, copyrightable, or not protectable by any form of intellectual property law. Individual jurisdictions have resolved a number of these issues differently, a situation that is further complicated by the fact that the relevant treaty for copyright, the Berne Convention,[39] may or may not apply. Further, even if it does apply, the Berne Convention only accords national treatment to its member-parties' enterprises. Thus, a Community jurisdiction that does not recognize software's copyrightability may provide a haven for European "pirates" reselling their wares as parallel imports throughout the Community.[40] In an area where technology drives the law—and where Europe lags behind the United States and the Far East—the resolution of these issues will be increasingly important.

Part II, then, examines some of the terminology and the debate currently associated with the concept of "software."

II
SOFTWARE: WHAT IS IT?

A computer is an electronic device capable of processing information via internal digital manipulation. Since symbols such as numbers, letters, and graphed drawings can all be reduced to digital representations, a computer's high-speed operation enables it to perform symbolic tasks efficiently. These tasks are defined in "programs," carefully encoded sequences of instructions and data provided or identified by the user. The programs instruct the computer's "hardware" elements to add, multiply, store, exchange, display, and so forth. To distinguish programs from the electronic components "running" them, programs are termed "software."[41]

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39. International Union for the Protection of Literary and Artistic Works (Berne Union or Berne Convention) (founded by Berne Convention (1886), completed at Paris (1896), revised at Berlin (1908), completed at Berne (1914), revised at Rome (1928), Brussels (1948), Stockholm (1967), and Paris (1971)) (United States not a signatory; find U.K. version at 1970 Gr. Brit. T.S. No. 53 (Cmd. 4412)).

40. *See* Buck, *Copyright Harmonization and Revision: 'International Conventions on Copyright Law,'* 9 INT'L BUS. LAW. 475, 478-79 (1981).

41. The World Intellectual Property Organization's Model Provisons on the Protection of Computer Software actually define three separate classes of software:

(i) "[C]omputer program" means a set of intructions capable, when incorporated in a

Programs may be broadly classed as either "operating systems" or "applications." Users are rarely conscious of operating systems since these are programs that activate and coordinate a computer's hardware components. An operating system acts as an interpreter translating the user's application program and data input into machine-readable form, supervising the instructed manipulations, and storing, transmitting, transferring, or displaying the end result, as requested by the application. Operating system programs are very difficult to read by humans since they are usually stored in a low-level language form of potential ones and zeroes. This binary code represents the stream of on-off signals by which hardware components interact electrically.[42]

In contrast, "application" programs are often written in high-level computer languages which more closely approximate conventional human methods of communication. Application programs usually focus on solving problems independent of the machine architecture. That is, they use the computer rather than operate it. Typical applications include word processing, statistical analysis, games, and so on.

As a legal matter, software's definition and consequent legal status have been discussed for at least a decade.[43] The debate, at its most fundamental level, questions whether software *should* be protected. If programming is merely a utilitarian means of switching electronic devices on and off—and is useful to society at large—it is probably futile as well as short-sighted to deny or restrict a program's diffusion.[44] The difficulty of

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machine-readable medium, of causing a machine having information-processing capabilities to indicate, perform or achieve a particular function, task or result;

(ii) "program description" means a complete procedural presentation in verbal, schematic or other form, in sufficient detail to determine a set of intsructions constituting a corresponding computer program;

(iii) "supporting material" means any material, other than a computer program or a program description, created for aiding the understanding or application of a computer program, for example problem descriptions and user instructions.

Model Provisions on the Protection of Computer Software, 14 COPYRIGHT 6, 12 (1978). This Comment deals almost exclusively with the first of these, computer programs.

42. When a program is fused into a chip, it is referred to as Read Only Memory (ROM) because the program can no longer be modified by the user. ROM should be contrasted with volatile Random Access Memory (RAM), which is a "blank slate" into which data and programs can be read and temporarily stored. Both ROM and RAM are "hardware." As to the difficulties associated in human interpretation and manipulation of object code, see, for example, J. PETERSON, COMPUTER ORGANIZATION AND ASSEMBLY LANGUAGE PROGRAMMING 75-81 (1978) (author's example of macbine language program to add two numbers finally described as "difficult to follow, long, obscure, and probably wrong").

43. *See generally, e.g.,* J. BING, A DECADE OF COMPUTERS AND LAW (1980).

44. Copying is easy and the temptation high. One U.S. manufacturer estimates that pirated copies comprise 60% of its program's circulated population. *See* Note, *Software Piracy and the Personal Computer: Is the 1980 Software Copyright Act Effective?,* 4 COMPUTER/L. J. 171, 174 (1983). Of course, some argue that as a policy software should be generally available. *See, e.g.,* Address by Timothy Leary, Futurist, in Berkeley, Calif. (March 13, 1985) (information as social property); *'Shareware' Makers Expanding,* INFOWORLD, Jan. 7 & 14, 1985, at 18 (describing low cost "pay-if-you-like-it" distribution).

defining software becomes especially acute once the program has been "read in." At that point it seems part of the computer itself in that the program consists of rapidly transferring electrical signals and potential. Conceptually, it is a circuitry imposed upon the machine for the length of the program's use. The question then becomes whether circuit designs are appropriately monopolized items. From a policy point of view, a society might prefer to define such circuitries as ideas or processes that are best exploited by rapid and unrestricted dissemination.

This demonstrates a second difficulty in attempting to define software within existing legal frameworks. Assuming that a programmer's ingenuity in devising new "circuitries" should be encouraged through economic incentives, classifying software under existing legal rubrics may not optimally achieve this goal. Patents generally protect the physical embodiments of novel ideas—but a program is not always physically embodied in the machine. Thus, as a rule, programs have not been patentable in either the United States or Europe.[45]

In addition, once a patent is granted, it preempts all other uses of its novel subject matter. That is, the patent owner may legally preclude, for the prescribed time period, other individuals from exploiting the novelty embodied in his or her device. The idea itself is protected. Thus, for instance, a patent on the original word processing program would have precluded market competition by any other such program. This seems a high social price to pay for ingenuity, especially when trade secret, copyright protection, or both, might equally well serve the social goal of encouraging this type of technological innovation—while still allowing the lower prices and greater diffusion engendered by competition from other products utilizing the idea.

However, "know-how" that is protected as a trade secret, at least according to American theory, can legally be reverse-engineered.[46] Thus, once the original program is marketed, potential competitors can "work backwards," analyze its operation, and write a new program utilizing the same ideas, methods, and algorithms. A legal system relying solely on trade secret protection, therefore, would seriously diminish programmers' incentive to invest time and effort in innovation.

Given the existing methods of protection, then, copyright appears best suited to protecting software. Because copyright applies to expres-

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45. *See, e.g., Group of Experts on the Copyright Aspects of the Protection of Computer Software,* 21 COPYRIGHT 146, 147 (1985) (final session, Geneva, Feb. 25 — Mar. 1, 1985) [hereinafter WIPO 1985 Session]; *cf.* Betten, *Patent Protection for Computer Programs in Germany and by the EPO,* 9 EUR. INTELL. PROP. REV. 10 (1987) (outlining arguments still available, even though probability of success low); Wilder, *Computer Software in Europe and the United States: Is It Patentable Subject Matter?,* 25 IDEA 51 (1984) (comparing patent law of European nations and U.S., concluding that harmonized protection of software may be achievable).

46. Kewanee Oil Co. v. Bicron Corp., 416 U.S. 470, 476 (1974).

sions of an idea, rather than to the idea itself, the copyright system encourages innovation *as well as* proliferation. In our example, competitors could produce and market other word processing programs, but, because of copyright protection, they could not copy the original in so doing. In other words, the idea of word processing would be available to society at large, but the expression of the idea and the time and effort expended in its creation would be protected.

This leads to the next question of the debate. *Is* software protected by copyright law? At this point the answer becomes closely dependent on each jurisdiction's case law and statutory language. Copyright traditionally applies to artistic and literary works. It only applies with difficulty to utilitarian designs; with respect to technologically innovative mediums, the law may have to utilize the notion of "neighboring rights," as we have seen.[47]

The problem is exacerbated by the fact that software can exist in so many mediums. It is conceived symbolically in flow charts, written in computer languages, interpreted or compiled by systems programs, and executed as a machine-readable stream of bits.[48] At each level it is an expression of the same program—but it becomes less and less readable by humans as it is transformed. Further, given that applications can range from "number-crunching" scientific projects, to interactive novel-games,[49] to intricate but essentially mundane device-interfacing programs, it is not surprising that the traditional law governing artistic and literary works does not readily encompass software.

Finally, even if traditional copyright doctrine or statutory law is expanded to include software, it is not clear that the policies underlying the protection of traditional works necessarily underlie the protection of computer programs as well. The technical and economic benefit of widespread dissemination of standardized software—through increased efficiency, availability of information, communication, and so on—is a factor that is not present in traditional copyright. Traditional copyright theory balances the social interest in widespread dissemination of cultural material against the social benefit achieved through the statutory encouragement of aesthetic innovation. Essentially, the encouragement consists of an artificially created authors' incentive. This type of governmental sponsorship may not be necessary, or far-sighted, in a market for highly prized utilitarian products, however. Thus, even if software *can*

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47. *See supra* note 15 and accompanying text.

48. When a program is coded in a high-level language such as Basic, Pascal, Fortran, or some other, it is referred to as "source code." This source code is either "compiled" or "interpreted" line by line into "object code" by a systems program. Object code is machine-readable, meaning that it can be executed directly.

49. *See, e.g., Leather Goddesses of Phobos,* GAMES, Jan. 1987, at 46 (reviewing interactive science fiction sex comedy).

be protected by copyright—and even if this protection seems superior to patent and trade secret protection—it is still not clear that copyright protection is the most sensible course of social action.

Community jurisdictional law, although increasingly convergent, is far from uniform in the handling of any of these issues. Part III examines the current interstate disparity of treatment—a disparity which can only become more acute as software use and abuse increases throughout Europe.[50]

III
CURRENT JURISDICTIONAL LAW

The global intellectual property community, as previously mentioned, has grappled with the issue of software for a number of years,[51] seeking first to define and understand it, then to place it within the perspective of the socialist and Third World challenge to copyright as a whole.[52] The advent of the home microcomputer, coupled with the sudden and increased popularity of microchip-driven videogames in the early 1980's, brought the issue to a head in European legislatures and courts, and prompted discussions of a worldwide protection scheme outside the realm of traditional copyright.[53] However, the industrialized nations most concerned with the problem eventually determined that copyright protection could and most probably would be extended by appropriately informed courts. Proposals for a *sui generis* international form of protection were thus postponed[54] and, as in the rest of the world, the Community member-states have since dealt with the problem in ad hoc fashion. The following account describes the law as it is currently reported in each of the Community jurisdictions, focusing first on legislation, then on case law and public pronouncements. The jurisdictions with the most developed bodies of law are reported first.

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50. *See, e.g.,* Ladd, *To Cope with the World Upheaval in Copyright,* 19 COPYRIGHT 289, 290 (1983).

51. *See* J. BING, *supra* note 43.

52. *See, e.g.,* G. DAVIES & H. VON RAUSCHER AUF WEEG, CHALLENGES TO COPYRIGHT AND RELATED RIGHTS IN THE EUROPEAN COMMUNITY 13 (1983) (effects of technology so far-reaching that concept of copyright put in jeopardy); Evenson, *Intellectual Property Rights and the Third World,* 5 EUR. INTELL. PROP. REV. 330 (1983); Pendleton, *Intellectual Property, Information-Based Society and a New International Economic Order—The Policy Options?,* 7 EUR. INTELL. PROP. REV. 31 (1985); Kerever, *Is Copyright an Anachronism?,* 19 COPYRIGHT 368 (1983).

53. The World Intellectual Property Organization (WIPO) has sponsored three conferences on this topic. The conference reports can be found as *Expert Group on the Legal Protection of Computer Software,* 16 COPYRIGHT 36 (1980) (first session, Geneva, Nov. 27-30, 1979); *Committee of Experts on the Legal Protection of Computer Software,* 19 COPYRIGHT 271 (1983) (second session, Geneva, June 13-17, 1983) [hereinafter WIPO 1983 Session]; WIPO 1985 Session, *supra* note 45.

54. *See* WIPO 1983 Session, *supra* note 53, at 278.

Federal Republic of Germany

Germany recently revised its Copyright Act (Urheberrechtsgesetz) so as explicitly to include "programs for data processing" within the Act's nonexclusive catalogue of copyrightable works.[55] Thus, like all German literary works, if programs for data processing qualify under article 2(2) as "personal intellectual creations," they will receive copyright protection for the lifetime of the author plus seventy years.[56] During this time the author or author's licensees can prevent unauthorized copying, distribution, or demonstration of the original program and any of its derivative forms.[57] In addition, the author acquires the traditional "moral rights" which reserve to him or her the decision to actually publish the work, to withdraw it from the market, to claim authorship in the work, or to prohibit or authorize any subsequent distortions of the piece.[58] In short, the author receives the full panoply of German copyright protection.

Two decisions by federal supreme courts, in accord with the bulk of scholarly German analysis,[59] largely anticipated this legislative clarification. Nonetheless, when coupled with the jurisprudence of the lower courts, especially in relation to videogames, case law may limit the types of programs that in fact qualify as "personal intellectual creations." This is a significant limitation.

In its controversial but perhaps far-sighted *Inkasso-Programm* opinion,[60] the Bundesgerichthof (Federal Supreme Court) redefined the test for "personal intellectual creation" that had first been enunciated by the court below, and that had been approved and followed by the Bundesarbeitsgericht (Supreme Federal Labor Court) in a separate dispute.[61] The case was an appeal from a decision of the Oberlandesgericht

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55. 1985 Bundesgesetzblatt, Teil I [BGBl.I] 1137 (June 27, 1985). The catalogue now reads: "Sprachwerke, wie Schriftwerke und Reden, sowie Programme für die Datenverarbeitung." *Id.* ("Literary works, such as writings and speeches as well as programs for data processing.") (translation available at 7 EUR. INTELL. PROP. REV. D-170 (1985) (including short analysis)). For discussion, see Kindermann, *Copyright Protection for Computer Software in Germany: Recent FSC Decisions and the Copyright Revision Act 1985,* 8 EUR. INTELL. PROP. REV. 179, 183 (1986); Schroeder, *Copyright in Computer Programs—Recent Developments in the Federal Republic of Germany,* 8 EUR. INTELL. PROP. REV. 88, 89 (1986).

56. Urheberrechtsgesetz, § 64, 1965 BGBl.I 1273, 1282 (Sept. 9, 1965).

57. *Id.,* §§ 16-18.

58. *Id.,* §§ 12-14; *see* S. STEWART, *supra* note 4, at 59-61 (as to *droit moral* in general).

59. *See, e.g.,* Ulmer & Kolle, *Copyright Protection of Computer Programs,* 14 IIC INT'L REV. INDUS. PROP. & COPYRIGHT L. 159 (1983); Haberstumpf, *Zur urheberrechtlichen Beurteilung von Programmen für Datenverarbeitungsanlagen,* 1982 GRUR 142.

60. Judgment of May 9, 1985, Bundesgerichtshof, 94 Entscheidungen des Bundesgerichtshofes in Zivilsachen [BGHZ] 276 (1986) (*Inkasso-Programm*) (also published at 1985 BETRIEBS-BERATER [BB] 1747 and at 1985 GRUR 1041). A translated extract may be found in Kindermann, *supra* note 55.

61. Judgment of Sept. 13, 1983, Bundesarbeitsgericht, 1984 BB 871 (also at 1984 GRUR 429)

of Karlsruhe (Regional Court of Appeals).[62] That court had rejected the lowest court's decision[63] that computer programs could not, in general, qualify as personal intellectual creations because they lacked intellectual-aesthetic substance. The Karlsruhe court ruled that aesthetic appeal was not required. The necessary creative element occurred in the "arrangement of the necessary procedural steps and utilisation of data and their classification."[64]

The Bundesgerichthof confirmed the holding that intellectual-aesthetic substance was not a requirement of copyrightability.[65] According to the court, however, originality cannot be determined solely on the basis of the arrangement of a program's instructional elements. Instead, the question of personal intellectual creation must be resolved by comparing "the intellectual overall impression of the actual formation in an overall comparison with already existing formations."[66] In order to determine that this comparison reveals "creative characteristics," a further comparison is then made to see whether the product is superior to that of an average programmer. Copyrightability "demands evident design superiority over the general average ability concerning selection, collection, arrangement, and division of the information and instructions."[67]

In short, where the court finds the creative element of a new program to be trivial—one that could be rapidly achieved by an average

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(in English at 15 IIC INT'L REV. INDUS. PROP. & COPYRIGHT L. 781 (1984) and in Sieber, *Copyright Protection of Computer Programs in Germany* (pts. I & II), 6 EUR. INTELL. PROP. REV. 214, 253 (1984), [hereinafter Sieber I & II respectively]). The court wrote:

> The individuality of the work can be expressed in the literary ordering, the arrangement, the shaping of the content, but also in the collection and selection of the material. If on the other hand the concepts, content and form of the work are predetermined by the task or the application employed to such an extent that the same result can be expected in its solution by several authors, no leeway is left for an individual personal creation.

Id. at 871 (translation is from Sieber II, *supra,* at 259).

Other decisions following the Karlsruhe formulation for "personal intellectual creation" include Judgment of June 13, 1983, Oberlandesgericht, Frankfurt, 1983 BB 1745, and Judgment of July 21, 1983, Oberlandesgericht, Frankfurt, 1983 BB 1748. *See* Sieber I, *supra* (analyzing these and other Oberlandesgericht decisions, all of which affirmed or left open the possibility of copyright subsistence in software). For a perceptive look at some of the earlier lower cases, see LLewelyn, *Legal Protection of Computer Software in the Federal Republic of Germany: Recent Developments*, 15 IIC INT'L REV. INDUS. PROP. & COPYRIGHT L. 187 (1984), and see Ulmer & Kolle, *supra* note 59, for the English version of their influential work presaging these decisions.

 62. Judgment of Feb. 9, 1983, Oberlandesgericht, Karlsruhe, 1983 GRUR 300 (translated in Sieber II, *supra* note 61).

 63. Judgment of June 12, 1981, Landgericht, Mannheim, 1981 BB 1543. *See* Ulmer & Kolle, *supra* note 59, at 163, 168 (discussing decision); Sieber I, *supra* note 61, at 216 (discussing decision).

 64. Judgment of Feb. 9, 1983, Oberlandesgericht, 1983 GRUR 300 (translation is from Sieber I, *supra* note 61, at 218).

 65. Judgment of May 9, 1985, Bundesgerichthof, 94 BGHZ 276, 286 (1986).

 66. *Id.* (translation by Kindermann, *supra* note 55, at 186-87).

 67. *Id.* at 287 (translation by Kindermann, *supra* note 55, at 186).

programmer—no copyright will attach. This is a significant, though not unprecedented, limitation. Several German courts had denied infringement claims in videogame cases prior to the revised Copyright Act, presumably because such programs were considered trivial or required little original contribution by the programmers.[68] In one such case, the court explicitly relied on the ground that the program's task predetermined its form and that, therefore, the plaintiffs had failed to prove the requisite personal intellectual creation.[69] Other courts did not allow the analysis to proceed even to this level, limiting their discussion to the copyrightability of the program's output, which was also denied.[70] Since videogames are nothing more than "dedicated" microprocessors—meaning that they are computers running a single program—these decisions indicate that in Germany, at least, the threshold level of "personal creation" may be rather high for those sorts of programs that courts find "trivial."

Thus, until the courts determine the scope of the new amendment's protection and the continued efficacy of the *Inkasso-Programm* tests, creators of products embodying imbedded software may not be able to rely on copyright to prevent competition, and may be forced to seek or accept lesser protection on the basis of other theories. In its judgment of August 4, 1983, for instance, the Frankfurt Oberlandesgericht relied on unfair competition principles and an average novelty period of six months to grant a narrow twelve-month protective headstart to the creators of Donkey Kong Junior,[71] a far cry from the life plus seventy years which a program for processing interactive data might otherwise expect.[72]

France

France also recently adopted copyright revisions regarding software

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68. *See, e.g.,* Judgment of March 14, 1983, Oberlandesgericht, Karlsruhe, 1984 GEWERBLICHER RECHTSSCHUTZ UND URHERBERRECHT INTERNATIONALER TEIL [GRUR INT'L] 528 (*Atari*).

69. Judgment of August 4, 1983, Oberlandesgericht, Frankfurt, 1984 GRUR 509 (*Donkey Kong Junior II*) (digested in English at 6 EUR. INTELL. PROP. REV. D-53 (1984)) (arguing explicitly that the output predetermined the underlying program).

70. Judgment of June 13, 1983, Oberlandesgericht, Frankfurt, 1983 GRUR 753 (*Pengo*); Judgment of July 21, 1983, Oberlandesgericht, Frankfurt, 1983 GRUR 757 (*Donkey Kong Junior I*); Judgment of March 31, 1983, Oberlandesgericht, Hamburg, 1983 GRUR 436. Videogame output consists of music, sounds, and rapidly updated visual sequences. For criticism of pre-statute German law on videogames, and an argument that videogame output should itself be copyrightable, see Schroeder, *Case Comment,* 7 EUR. INTELL. PROP. REV. 19 (1985).

71. Judgment of Aug. 4, 1983, 1984 GRUR 509.

72. Note, however, that Kindermann reports that the Bundesgerichthof, on September 26, 1985, refused to hear appeal in another software copyright case. Kindermann, *supra* note 55, at 184 & n.17. The court below had upheld copyrightability. Judgment of Nov. 6, 1984, Oberlandesgericht, Frankfurt, 1985 BB 139. Kindermann argues that this indicates a continued willingness to extend copyright protection to quality software, despite the rigorous tests of *Inkasso-Programm.* Kindermann, *supra* note 55, at 184.

(*les logiciels*)[73] but did not go as far as did Germany in according it official protection. Perhaps the most striking feature of the system is its
limited twenty-five-year term, half that for traditional literary works.[74]
The amendment also: (1) vests ownership in a programmer's employer,
unless a contract specifically provides otherwise;[75] (2) denies authors
their traditional moral rights as to adaptation, publication, and withdrawal;[76] (3) derogates from the Berne Convention by tying national
treatment to reciprocal protection, although apparently only requiring a
minimal form thereof;[77] and (4) delineates a special procedure for the
seizure of counterfeited works.[78] In short, France now provides a copyright-like protection via what amounts to a "neighboring right."[79]

Three recent decisions by the Cour de Cassation (French Supreme
Court) echo the German Supreme Court's concern with "originality" as
a prerequisite of copyright protection. In *BMW v. Pachot,*[80] the trial
court had found software copyrightable as a literary work by stressing,
and seeking to identify, the creative elements of the program in question.
The Paris Court of Appeals affirmed the holding but formulated the test
of originality more broadly by arguing that software's copyrightability
followed almost automatically from the programmer's "exercise of
choice" in selecting and arranging the program's instructional elements.[81] The Cour de Cassation acquiesced in the result, but only

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73. Loi n° 57-298 du 11 mars 1957, Sur la propriété littéraire et artistique (Law No. 57-298 of
Mar. 11, 1957 on Literary and Artistic Property), 1957 Journal Officiel de la République Française
[J.O.] 2723, 1957 Recueil Dalloz, *Législation* 102, as amended by Loi n° 85-660 du 3 juillet 1985,
Relative aux droits d'auteur et aux droits des artists-interprètes, des producteurs de phonogrammes
et de vidéogrammes et des enterprises de communication audiovisuelle (Law No. 85-660 of July 3,
1985 Relating to Authors' and Interpretive Artists' Rights, to Producers of Phonograms and
Videorecordings, and to Audiovisual Communication Ventures), Titre V, 1985 J.O. 7495, 1985
Recueil Dalloz Sirey, *Législation* I 357, 361. An English version of the new title can be found in
Provisions Regarding Protection of Software Adopted on 26/27 June 1985 by Parliament and Senate, 7
EUR. INTELL. PROP. REV. D-116 (1985). For an exhaustive critique, see Gaudrat, *La protection des
logiciels par la propriété littéraire et artistique,* 128 REVUE INTERNATIONALE DU DROIT D'AUTEUR
[RIDA] 180 (1986) (concurrently translated into English).

74. Loi n° 57-298 du 11 mars 1957, Titre V, art. 48.

75. *Id.,* art. 45.

76. *Id.,* art. 46.

77. *Id.,* art. 51.

78. *Id.,* art. 50.

79. Note that the protection *is* under copyright, however. This was a conscious choice, since
neighboring rights are not protected under the international conventions. *See* Gaudrat, *supra* note
73, at 190.

80. Judgment of Mar. 7, 1986, Cass. ass. plén., 1986 Bulletin des arrêts de la Cour de cassation,
chambres civiles, Cinquième Partie [Bull. Civ. V] 5 (reported fully at 129 RIDA 130 (1986)).

81. Judgment of Nov. 2, 1982, Cour d'appel, Paris, 115 RIDA 148 (1983). The court
reasoned:

> [T]he elaboration of a program for computer applications is a work of the mind, original in
> its composition and expression, which transcends simple, automatic and constricting logic;
> it is not merely a matter of indispensable intellectual mechanics for in fact program
> analysts [programmers?] exercise much choice, as the translators of works must choose,

because the lowest court had in fact identified the program's original ele-
ments.[82] Thus, like Germany's high court, the court rejected the "exer-
cise of choice" rationale for software's copyrightability, preferring
instead to protect only those programs demonstrating an "intellectual
contribution" by the programmer. Presumably this means that protect-
able programs must be substantively creative, not just rearrangements of
old ideas and instructions.[83]

However, originality does not have to be associated with aesthetic
content. In its two other simultaneous rulings, the court reversed a Paris
appellate court's decision that videogames did not deserve full copyright
protection.[84] The court merely noted that the issue of aesthetic content
was irrelevant in determining the issue of originality.

Thus, French law now provides protection to original programs,
and it may be more favorable to videogames than is German jurispru-
dence.[85] Original programs that do obtain copyright protection, how-

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between diverse manners of presentation and expression, and their choice therefore bears
the stamp of their personality.

Id. at 152 (translation from Le Stanc, *Case Comment: Pachot v. Babolat-Maillot-Witt*, 7 EUR.
INTELL. PROP. REV. 222, 223 (1985)); *cf.* Karnell, *Copyright in Computer Programs—An Interna-
tional Survey*, 7 EUR. INTELL. PROP. REV. 126, 132 (1985). For English analysis of the case, see also
Gaudrat, *supra* note 73, at 284.

82. *See* Gaudrat, *supra* note 73, at 284.

83. *Id.* at 285. This line of reasoning begins to grade into patent if applied strictly because the
ideas underlying the program become monopolized. Under traditional copyright, just the program's
expression of those ideas beome monopolized.

84. Judgments of Mar. 7, 1986, Cass. ass. plén., 1986 Bull. Civ. V 6 (*Williams Electronics v.
Jeutel* (Defender) and *Atari v. Valadon* (Asteroids and Centipede)) (reported fully at 129 RIDA 132
and at 129 RIDA 134 respectively).

85. *See supra* notes 68-72 and aecompanying text.

Despite the scaled down version of protection now in place in France, its courts were among the
first to recognize that compnter programs could be protected as literary works despite the programs'
technical nature and difficulty of interpretation. In the early 1980's, Apple Computer mounted a
vigorous worldwide attack on competitors it charged with illegally inarketing computers that
utilized substantially copied versions of its Apple II operating system. *See, e.g.,* Apple Computer,
Inc. v. Franklin Computer Corp., 545 F. Supp. 812 (E.D. Penn. 1982), *rev'd,* 714 F.2d 1240 (3d Cir.
1983) (U.S. version of the dispute); *cf., e.g.,* Computer Edge Pty. Ltd. v. Apple Computer, Inc., 65
A.L.R. 33 (1986) (Australian version).

The programs consisted of object code in microchips that, for all intents and purposes, could
neither be secn nor read. This was the original question concerning software's copyrightability.
Compare, e.g., Data Cash Systems, Inc. v. JS&A Group, Inc., 480 F. Supp. 1063, 1069 (N.D. Ill.
1979) (ROM cannot be read with naked eye, therefore program not copyrightable) *with* Apple
Computer, Inc. v. Franklin Computer Corp., 714 F.2d 1240, 1249 (3d Cir. 1983) (programs on
ROM sufficiently "fixed" so as to satisfy statute). Apple nonetheless claimed, and was granted,
copyright protection.

> [I]f computer programs are not immediately perceptible by the senses of everyone, as
> literary or plastic works, they are, nevertheless, accessible and understandable on various
> media, such as "listings," screens or magnetic recordings; if obviously their reading is not
> in the range of everybody and requires a certain degree of technicality, this single
> peculiarity does not result in their being excluded from the category of literary works.

Judgment of Sept. 21, 1983, Trib. gr. inst., Paris, 1984 Recueil Dalloz Sirey, *Jurisprudence* 77 (Eng-
lish translation is from Legal Strategies in International Competition, 1984 BRIE Workshop (loose-

ever, will be significantly less protected under the French legislative scheme—in terms of both years and moral rights—than they will be under Germany's traditional system of seventy-year monopoly plus the author's life. This could eventually create problems under the Community free trade rules.[86]

United Kingdom

Only a few weeks after the German and French amendments had been adopted, the United Kingdom followed suit. The Copyright (Computer Software) Amendment Act of 1985, like its German predecessor, specifies software as qualifying literary work within the existing law.[87] Authors/programmers thus receive protection for life plus fifty years and all rights otherwise associated with the Anglo-American system.[88] Notably, these do not include moral rights.

No appellate cases preceded this enactment, but its passage was not unexpected. Government-commissioned studies had previously affirmed the possibility of copyright's subsistence in software. In 1977, the Whitford Report recommended that Parliament not take special action in regard to computer programs since the term "literary works" was broad enough to cover these items,[89] and in 1981, the "Green Paper" concurred in these findings.[90]

Lower court case law had also anticipated copyright protection, albeit cautiously. Several decisions intimated that copyright could in fact subsist in software and could justify the issuance of an Anton Piller order, an order that allows plaintiffs' counsel to enter and search the defendants' premises and seize any incriminating evidence, including the allegedly infringing goods.[91] The decisions did not rely on copyright

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leaf binder) (available from Berkeley Roundtable on the International Economy (BRIE), University of California, Berkeley)).

The French tribunal analogized computer programs to musical compositions. While coded in notes unintelligible to laypersons, and only perceptible through means of an instrument, they nonetheless, according to the court, constitute works capable of nearly infinite variation. *Cf.* Judgment of Mar. 7, 1986, *supra* note 80.

86. *See infra* Part IV.

87. Copyright (Computer Software) Amendment Act, 1985, ch. 41 (also available at 6 EUR. INTELL. PROP. REV. D-167 (1984)). Section 1(1) of the amendment reads in relevant part: "The Copyright Act 1956 shall apply in relation to a computer program . . . as it applies in relation to a literary work and shall so apply whether or not copyright would subsist in that program apart from this Act." *Id.* The amendment became effective as of September 16, 1985. For a short outline of difficulties that might plague the Act, see Phillips, *Letters: Software Copyright: Potential Problems,* 7 EUR. INTELL. PROP. REV. 270 (1985).

88. *See* S. STEWART, *supra* note 4, at 440-41 (infringing acts).

89. COPYRIGHT AND DESIGN LAW: REPORT OF THE COMMITTEE TO CONSIDER THE LAW ON COPYRIGHT AND DESIGNS, 1977, CMND. 6732, at 128.

90. REFORM OF THE LAW RELATING TO COPYRIGHT, DESIGNS AND PERFORMERS' PROTECTION: A CONSULTATIVE DOCUMENT, 1981, CMND. 8302, at 33.

91. *See, e.g.,* Gates v. Swift, 1981 F.S.R. 57, 13 Pat. Cas. 339 (1982) (digested at 1981

alone, however, and their precedential value remains unclear. Therefore, oddly enough, the leading pre-statute precedent is a 1982 videogame case in which the court reasoned that the object code embodied in the plaintiff's game, Frogger, was derived from that game's protectable assembly language program[92] as either a reproduction or an adaptation. Therefore, the program was protected under the Copyright Act of 1956.[93]

Netherlands

Dutch jurisprudence has proceeded along much the same lines as has that of Germany, France, and the United Kingdom. Four cases affirm the possibility of copyright protection for computer software[94] and the Government is currently considering a clarifying amendment to article 10 of its Copyright Act that would confirm this view.[95] In its judgment of July 28, 1981,[96] for instance, the Rechtbank of Assen ruled that experts must determine whether a program constituted a "creation" (*schepping*) within the meaning of the Dutch Copyright Act and ruled that, under section 1401 of its Civil Code, imitation of a program that did not constitute a "creation" was not in principle unlawful.

It went on, however, to enumerate a number of special circumstances permitting derogation from the principle: when an equally acceptable method (expression?) was possible; when the producer's and the imitator's costs were severely disproportionate; when the original program was especially distinctive; and when the original program had been legally acquired. Since a complex program can be written in myriad distinct fashions and can be easily and cheaply copied, the court in effect declared that while the statutory language might be unclear, software could be accorded copyright-like protection where the equities were not unclear.

The Rechtbank of Assen went further, explicitly declaring that

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CURRENT LAW YEARBOOK [C.L.Y.] 311); Sega Enterprises Ltd. v. Alca Electronics, 1982 F.S.R. 516 (digested at 37(2) THE DIGEST 481, case 2985).

92. Assembly language is an intermediate method of programming that is less human-like than a high level language but is infinitely more tractable than machine language (object code). *See supra* notes 42 & 48.

93. Sega Enters. Ltd. v. Richards, 1983 F.S.R. 73 (digested at 1983 C.L.Y. 488).

94. Judgments of Jan. 30, 1981 and May 14, 1982, Arrondissementsrechtsbank, Hertogensbosch, 1983 GRUR INT'L 669 note D. Verkade (noted briefly in Karnell, *supra* note 81, at 132); Judgment of July 28, 1981, Rechtbank, Assen, 1982 NEDERLANDSE JURISPRUDENTIE [N.J.] 262 (digested in English at 11 EUR. L. DIG. 482 (1983)); Judgment of March 10, 1982, Rechtbank, Utrecht, 1983 BIJBLADBIJ DE INDUSTRIËLE EIGENDUM 328 (noted in Spoor, *Protection of Computer Software in the Netherlands,* 1 SOFTWARE L.J. 373, 377 (1986)); *see also* D. VERKADE & J. SPOOR, AUTEURSRECHT 77-79 (1985) (Dutch).

95. *See* WIPO 1985 Session, *supra* note 45, at 155.

96. Judgment of July 28, 1981, Rechtbank, Assen, 1982 N.J. 262.

object code itself is protectable by copyright.[97] This decision has, how-
ever, been criticized.[98]

Interestingly, the only reported videogame case grants copyright
protection to Nanco and Atari's game, Pac-Man, on the basis of its out-
put display—not on the basis of its underlying software.[99]

Italy

Italian courts have also granted copyright protection to software but
the underlying rationale for doing so remains unclear, not only varying
from decision to decision but perhaps conflicting with the northern mem-
ber-states' views as reported above. In its judgment of April 14, 1984,
however, the Pretore of Pisa echoed northern sentiment by concluding
that the computer program in question attained a sufficient level of origi-
nality and creativity so as to be considered a work pertaining to the sci-
ences.[100] Although German courts had also considered this possibility,
the law there finally settled on protection under the rubric of "literary
works," as did the law of France and the United Kingdom. This differ-
ence may have little practical significance if all internationally traded
computer programs can be considered as pertaining to the sciences, but
that point may not be readily accepted where the allegedly infringed
works are games, graphics "toolkits," or other "frivolous" compilations.
Further, the court carefully confined its holding to the facts, thereby
leaving open the possibility that other programs might not so readily
attain a sufficient level of originality and creation.[101]

Two early videogame cases may affirm such a reticence. Atari's Pac-
Man case failed before the Pretore of Milano, which ruled that
videogames are not the "fruit of intellectual work" such as is within the
purview of copyright law.[102] A week earlier the Pretore of Torino had
ruled similarly in Atari's companion infringement suit relating to its
games Missile Command, Asteroids, and Centipede. Although the

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97. Judgment of Dec. 19, 1984, Rechtbank, Amsterdam, 1985/4 *Computerrecht* 31 (1985) (as
cited in D. VERKADE & J. SPOOR, *supra* note 94, at 77 n.131).

98. Kingma, *Copyright Protection of Computer Software in the Netherlands,* 3 COMPUTER L. &
PRAC. 97, 97 (1986).

99. Judgment of Dec. 2, 1982, Arrondissementsrechtsbank, Amsterdam, AUTEURSRECHT/
AMR 17 (1983), *rev'd,* Judgment of Mar. 31, 1983, Rechtbank, Amsterdam, AUTEURSRECHT/
AMR 56 (as reported in Keustermans, *Protection of U.S. Computer Software in Belgium and The
Netherlands,* COMPUTER LAW., Oct. 1985, at 19, 20 & n.22) (noted briefly in Karnell, *supra* note 81,
at 132).

100. Judgment of Apr. 11, 1984, Pret., Pisa, 56 IL DIRITTO DI AUTORE [DIR. AUT.] 85 (1985)
(digested in English at 6 EUR. INTELL. PROP. REV. D-211 (1984) and at 13 EUR. L. DIG. 406
(1985)).

101. The programs in question facilitated invoicing, stocking, and general bookkeeping.

102. Judgment of June 1, 1982, Pret., Milano, 106 Il Foro Italiano II 389 (1983) (digested in
English at 12 EUR. L. DIG. 524 (1984) and at 13 EUR. L. DIG. 101 (1985); also found at 55 DIR.
AUT. 93 (1984)).

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Pretore found civil code violations based on slavish imitation and para-sitic competition (that is, unfair competition), and enjoined further sales of the free-riding company's competing products, it ruled that Atari's programs did not constitute "intellectual works of a creative charac-ter,"[103] and thus denied relief under copyright.

Atari, fearing a damaging precedent, appealed the case to the Tribunale and succeeded in expanding the earlier judgment.[104] The Tribunale ruled that in addition to the protection available under unfair competition theories, videogames could constitute copyrightable "cine-matographic works," a rationale relied upon by the Dutch courts but apparently ignored in Britain and rejected by courts in Germany and France. Again, these varying international rationales may have no prac-tical effect if all videogames can be considered cinematographic works— but the fate of interactive text adventure games, for instance, may still be uncertain.

In short, like its northern neighbors, Italy protects software via copyright, but may circumscribe the types of programs qualifying for such protection. It also protects videogames, but does so in a manner that may have only slight precedential value for the software underlying those games' output.[105] It should be noted, however, that Italian courts have not encountered these issues as often as have some of the Commu-nity's other courts. Time, scholarly effort, and international pressure may encourage Italian institutions to harmonize their decisions with those of the more industrialized Community nations. On the other hand, if the cases indeed demonstrate a hostility to full copyright protection, or a reluctance to protect certain types of software, the common market rules on free trading may face a serious challenge.[106]

Denmark

Little case law has been reported from Denmark, but its delegation to the 1985 World Intellectual Property Organization's (WIPO) meeting of experts on software copyright protection confirmed that Danish copy-right extends to computer programs.[107] The delegation also reported that clarifying statutory amendments to this effect were planned. It thus

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103. Judgment of May 21-25, 1982, Pret., Torino (not published) (reported in Introvigne, *Case Comment*, 5 EUR. INTELL. PROP. REV. 347, 347 (1983)).

104. Judgment of Oct. 17, 1983, Trib., Torino, 55 DIR. AUT. 57 (1984) (digested in English at 12 EUR. L. DIG. 525 (1984)). For English analysis, see Introvigne, *supra* note 103.

105. *But see* Introvigne, *supra* note 103, at 348 (apparently arguing that because the court found the conceptualization of a videogame to be creative, the programming underlying its realization must also be creative).

106. *See infra* notes 122-37 and accompanying text.

107. WIPO 1985 Session, *supra* note 45, at 154.

appears that Danish theory has evolved in much the same manner as has that of Germany and the United Kingdom.

Ireland

The Irish delegation to the 1985 WIPO meeting also reported that its nation's copyright laws extended to software; as a consequence, no amendments were necessary or contemplated.[108] No case law yet exists on point, but in an unreported High Court decision, an interlocutory injunction was granted ex parte on the basis of the copyright allegedly underlying the plaintiff's arcade videogame.[109] Ireland would therefore seem to treat software in the same manner as Great Britain, despite the two countries' divergent legislative approaches concerning this issue.[110]

Spain

Spain's recent accession to the European Economic Community galvanized a series of harmonizing legal reforms that have included intellectual property protection.[111] It is perhaps in this spirit that the Spanish delegation to the 1985 WIPO Conference reported that copyright protection for software was currently under official consideration.[112] Since no case law has been reported, however, and since the intellectual property reforms enacted after the delegation's pronouncement do not in fact include software, it remains problematic whether computer programs can expect copyright protection. In fact, the only scholar to write on this subject concludes that, as a practical matter, legal protection of software in Spain is nonexistent.[113]

Portugal

Portugal presents a similar problem. Although this nation must also come to terms with the legal obligations that its accession to the EEC has imposed, the reality of the situation is that Portugal's copyright regime appears to be in an uproar and only slowly recovering, if at all, from the prior socialist government's hostility to individual monopo-

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108. *Id.* at 155.

109. *See* Earley, *The Protection of Computer Software Against Third Parties in Ireland,* 1 SOFTWARE L.J. 361, 362-64 (1986) (reporting case: Noraut Ltd. v. Kimble Ireland Ltd., High Court, Mar. 22, 1984).

110. Note, however, that Ireland's law is analogous to Australia's law as well as to that of the United Kingdom. Australia refused copyright protection to object code in its Apple case. Computer Edge Pty. Ltd. v. Apple Computer Inc., 65 A.L.R. 33 (1986).

111. *See, e.g., News and Information: Spain: Draft of New Patent Act Published,* 16 IIC INT'L REV. INDUS. PROP. & COPYRIGHT L. 805, 805-06 (1985).

112. WIPO 1985 Session, *supra* note 45, at 155.

113. Picanol, *The Protection of Software Against Third Parties in Spain,* 1 SOFTWARE L.J. 391, 395 (1986).

lies.[114] Notably, the newly consolidated and amended Code of Copyright, published September 17, 1985, does not mention software, though it had been included in the final draft proposal presented to the national Assembly.[115] The protection afforded in the proposal, if it should be revived, appears to be modeled along the lines of the current French system. Thus, it apparently allows a limited term of twenty-five-years protection in a form similar to a neighboring right.[116]

Greece

As in Portugal, Greek copyright law through the last decade has not been vigorously enforced. For example, 1981 estimates indicated that eighty percent of the total domestic market in tape recordings consisted of pirated goods.[117] The extent to which this situation is a function of official hostility to copyright, perhaps in resistance to continued northern domination of lucrative cultural channels, will affect the country's eventual policing, tolerance, or indifference to software pirates. Officially, however, the new regime is committed to copyright reform. Moreover, there are several indications that the government will take these commitments seriously.[118] Nonetheless, it is perhaps significant that of the EEC member-states, only Greece proposes a *sui generis* form of protection for software, "based on industrial property principles."[119]

Belgium and Luxembourg

Both Belgian courts reporting computer software issues protected against misappropriation without reaching the issue of copyright's appli-

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114. *See, e.g.,* Rebello, *Evolution du droit d'auteur au Portugal,* 105 RIDA 131, 152 (1980) (concurrently translated to English) (background of official inattention and one-time hostility to traditional copyright) (writing, for example, that protection of phonogram producers "though requested by authors and publishers whom it would provide with a more effective defense against piracy, is being dragged out with a certain effrontery, despite several rulings by the courts"); Reimer, *Copyright Law and the Free Movement of Goods,* 12 IIC INT'L REV. INDUS. PROP. & COPYRIGHT L. 493, 511 (1981) (pirated tape recordings accounted for 80% of total domestic market).

115. Lei n.° 45/85, de 17 de Setembro, Alteração do Decreito-Lei n.° 63/85, de 14 de Março, e do Código do Direito de Autor e dos Direitos Conexos (Law No. 45/85 of Sept. 17, 1985, Amending Decree 63/85 of March 14 and the Code of Authors' and Connected Rights), 350 Boletim do Ministério da Justiça, *Legislação* 5 (1985) (English version available in 22 COPYRIGHT 124, 124-39, 163-75 (1986)). In fact, software was specifically deleted from the list of protected works. Rebello, *La nouvelle législation portugaise sur le droit d'auteur,* 129 RIDA 2, 14-16 (1986) (concurrently translated to English). However, Rebello argues that the nonrestrictive nature of the list permits protection of software nonetheless. *Id.* at 16.

116. *See News and Information: Portugal: Draft Reforms for Copyright Law,* 16 IIC INT'L REV. INDUS. PROP. & COPYRIGHT L. 282 (1985).

117. *See* Reimer, *supra* note 114, at 511.

118. *See generally* Melas & Georgacakis, *Letter from Greece,* 19 COPYRIGHT 221 (1983).

119. WIPO 1985 Session, *supra* note 45, at 155. The text of this proposal is not yet available.

cability.[120] No information is available as to Luxembourg. Though neither country has yet addressed the issue, it is uurealistic to expect either to stray too far from the laws of France, Germany, or the Netherlands. Copyright protection must be anticipated.[121]

IV

ISSUES CREATED BY LACK OF HARMONY

A series of issues arises from the lack of harmony in the member-states' treatment of software outlined in Part III. These issues delineate both the intricacies and the inadequacies of a Community jurisprudence striving to balance the goals of an integrated common market—that is, one that is free of economic restrictions—against the legitimate concerns of individual intellectual property right holders. This Part explores these issues in an effort to demonstrate the challenge and danger to the "common" market presented by continued inconsistent legal treatment of software: the perpetuation of fractionated markets rather than the encouragement of a Community-wide economy of scale. The following Part will then argue that *any* concerted action would be better than continually relitigating essentially solvable issues and would certainly be better than ignoring the economic potential of Europe's computerized future.

A. Piracy, Freeriding, and Unprotected "Havens"

The first and most obvious problem is that mentioned previously, the prospect of pirates remarketing programs from a "haven" in which copyright is not recognized. Theoretically, a would-be pirate could purchase a single copy of a consentedly marketed program, copy it repeatedly without consent, then sell the copied goods throughout the unrestricted common market.[122] As the European Court has ruled on a number of occasions, consented marketing in an unprotected jurisdiction exhausts the specific subject matter of the intellectual property right in question, in this case the right to prohibit copying.[123] Practically, though, the freeriding enterprise would not immediately succeed. As in the videogame cases, a pirate can still be enjoined in its home jurisdiction under principles of unfair competition, even absent copyright protection. However, given a jurisdiction hostile to copyright-like monopolies, the

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120. *See* Keustermans, *Protection of U.S. Computer Software in Belgium and The Netherlands,* COMPUTER LAW., Oct. 1985, at 19.

121. However, Dietz has described Belgian copyright law as "almost archaic." Dietz, *Harmonization, supra* note 4, at 401.

122. *Cf.* Harris, *An EEC View,* in PIRACY AND COUNTERFEITING OF INDUSTRIAL PROPERTY AND COPYRIGHT 29, 36 (W. Cornish ed. 1983) (gradual removal of internal barriers may unintentionally facilitate illicit trade).

123. *See supra* text accompanying notes 10-34.

duration of the creator's protected headstart in the marketplace could be foreshortened. This would effectively allow pirate competition while demand for the product or its copies was still high.

Another scenario involving "havens" postulates entrepreneurs who are willing to reverse-engineer noncopyrightable programs in order to rewrite the works as "original" creations. Such rewriting can be accomplished within a wide spectrum of sophistication, ranging from the juxtaposition of a few lines to complete reinterpretation relying only in the broadest outline on an original program's problem-solving logic. Where copyright is not available to prohibit—or even to discourage—unauthorized copying and adaptation, entrepreneurs might feel justified in expending the time and effort necessary to bypass the unfair competition laws. This would be particularly true where sympathetic courts created an easily achieved threshold of derived originality that would allow early access to the marketplace.[124]

At the present time, Portugal, Spain, and Greece (and, for certain classes of programming, perhaps Italy) have yet to declare that software is copyrightable. No European jurisdiction has ruled on the question of derivative works.[125] Thus, the possibility of problems arising from unprotected havens for pirate operations remains unresolved. Further, the EEC's southern expansion may introduce rather different attitudes concerning the equitable transfer of technology, opportunity, and useful industrial products such as software.[126]

Of course it would be surprising if a government openly encouraged piracy. Official inattention is the more likely possibility, especially insofar as such inattention stimulates the creation of jobs, attracts capital to local, potentially vigorous, high technology ventures, or increases the productivity or competitive posture of existing national firms. If so inclined, governments could either refuse to rule on copyright's applicability or, in apparent harmony with the more industrialized northern member-states, declare for protection but rarely find infringement. Even

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124. The issue of threshold originality in derivative and reverse-engineered programs is currently being litigated in the context of copyright in the United States. *See, e.g.,* Whelan Assocs., Inc. v. Jaslow Dental Laboratory, Inc., 609 F. Supp. 1307 (E.D. Pa.), *motion granted in part, denied in part,* 609 F. Supp. 1325 (E.D. Pa. 1985), *aff'd,* 797 F.2d 1222 (3d Cir. 1986), *cert. denied,* 107 S. Ct. 877 (1987); SAS Inst., Inc. v. S&H Computer Systems, Inc., 605 F. Supp. 816 (M.D. Tenn. 1985).

125. A "derivative work" is one based upon one or more preexisting works. *Cf.* 17 U.S.C. § 101 (1982). Examples of derivative works in traditional copyright include a book translated from English to Spanish, a movie based upon a short story, an abridged version of a novel, etc. By analogy, a program translated from one language to another could easily be classified as a "derivative work." The second author might, however, argue that only ideas, not expression, had been appropriated. This is the issue in the so-called "look and feel" cases. *See supra* note 124.

126. *See, e.g.,* Kerever, *supra* note 52, at 373 (formulating the classic counterargument to copyright).

the northern states are reluctant to grant all types of software full copyright protection, as seen for example in the French limited-rights scheme[127] and the widely varying protection of videogames. Thus, a sensitivity to the public's demand for access to utilitarian and modernizing computer goods may have to be taken into account: politically by the as yet undecided member-states, and tactically by international enterprises deciding where to sell their products.

Protection against piracy, however, need not be sought in the pirate's jurisdiction. Copyright and unfair competition laws almost always prohibit parallel imports of infringing goods. These laws should retain vitality in cases not involving Community-produced goods.[128] If adequate relief cannot be obtained in the pirate's forum, software creators attempting to reduce competition from such freeriders can, and probably will, sue in protected target jurisdictions as well. Nonetheless, a computer program composed in the Community—like the decorations on the Imerco china service and the Deutsche Grammophon sound recordings—is associated with tangible trading goods once it is imprinted on a microchip, recorded on a magnetic disk, or sufficiently fixed in some other fashion. National copyright barriers will not, according to case law, be allowed to restrict the movement of such goods. Thus, for example, a legal copy of a chip, made for instance in Greece after its *sui generis* protection had run, might be exported in competition with the original. The copyright owner would have no action under the Berne Convention and could face a European Court of Justice hostile to trading barriers.

Actually, the owner's legal prospects are probably not so dim. Both the *Imerco* and *Deutsche Grammophon* decisions stressed that copyright protection was exhausted only after consented marketing. Hence, if in the hypothetical case the chip manufacturer did not consent to marketing in Greece, a court might find that the copying was in violation of national copyright law.

In the 1974 Court of Justice case *Centrafarm BV v. Sterling Drug Inc.,*[129] third parties marketed patented Dutch drugs in Italy where, at that time, the products could not be protected. The Court found that Centrafarm could prevent parallel imports because it had not exhausted its protected right of first distribution in Italy. By analogy, a software publisher in Germany whose products found their way into Greece through unconsented (but perhaps not unforeseen) downstream trading might expect to be able to prohibit parallel imports of the work. How-

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127. *See supra* notes 73-86 and accompanying text.

128. *See, e.g.,* Reimer, *supra* note 114, at 502 (citing A. DIETZ, THE COPYRIGHT LAW IN THE EUROPEAN COMMUNITY (1978)).

129. 1974 E. Comm. Ct. J. Rep. 1147, 29 Common Mkt. L.R. 480 (1974).

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ever, the Court may not be receptive to this analogy in the case of software.

Suppose a Greek enterprise sufficiently alters the program so that it no longer closely resembles the originally marketed German product. A troubling issue arises. The creators would argue that the exploitation of the altered work has infringed their right of first distribution. But it may not be clear that *their* product was in fact being distributed. Thus, the interest holders might instead be forced to argue that the freeriding software constituted an unauthorized alteration of the original program. That is, the right invoked would be that of an author to prohibit changes in his or her creation, the right of integrity.[130] Although it is probable that the court would recognize such rights in a traditional case,[131] it is not clear that the justifications for the doctrine apply equally to software.

The right of integrity protects an artist's public image and dignity by allowing him or her to prevent distortions of the "personal," presumably perceptible, aspects of the work. Given the nature of software, however, it would seem almost impossible to demonstrate prejudice to an author's honor or reputation. Computer programs are designed to be malleable; they are rarely if ever seen or understood by their users, they almost always contain "bugs" that require future alterations, and, no matter how brilliantly conceived or executed, they are in fact essentially utilitarian. The author is known to the user only insofar as the programs work.[132] If the derivative product also works, it is unclear to what extent an author's reputation would be damaged. It is probably for just these reasons that France, which had originally insisted on incorporating *droit moral* into the Berne Convention and has remained one of *droit moral's* most consistent proponents,[133] nevertheless denied such rights to programmers and software enterprises in its recently amended Act.

As Professor Dietz insists, to consistently broaden traditional copyright so as to include each and every form of newly developed technology threatens eventually to so dilute the regime as to transform it into a "formless industrial property right."[134] In short, the Court of Justice might do well to conclude that personality rights are not an aspect of copyright's subject matter in relation to software. This does not mean,

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130. The author's right of integrity is an integral aspect of European *droit moral*. *See* S. STEWART, *supra* note 4, at 60-61.

131. *See* Von Gamm, *Copyright License Contracts and Restrictions Under the EEC Treaty,* 14 IIC INT'L REV. INDUS. PROP. & COPYRIGHT L. 579, 584 (1983).

132. Of course, some programmers include an introductory title screen as part of the program's output. The screen often includes personal credits and claims of copyright and, in this sense, the programmer can be personally known to users. However, it is almost certain that programmers reverse engineering such a product would remove the screen or replace it with one of their own. Again, the original programmer's reputation would no longer be associated with the product.

133. *See* S. STEWART, *supra* note 4, at 59-62.

134. Dietz, *Harmonization, supra* note 4, at 391, 407.

however, that the Court would allow parties "pirating" the intellectual property at issue to profit from the uneven character of the national laws in this area, even if strict reading of precedent might suggest such a course.

In *Keurkoop v. Nancy Kean Gifts,* [135] the Court upheld application of a national law preventing parallel import of ladies' handbags in which Nancy Kean had design rights, writing, "[I]n the present state of Community law and in the absence of Community standardisation or of a harmonisation of laws the determination of the conditions and procedures under which protection of designs is granted is a matter for national rules . . . ."[136] If the copyright protection of software presents a similar state of disarray—which at the moment it almost certainly does—national rules that prohibit or restrain parallel imports of unauthorized copies of a computer program will probably also be upheld, unless the creators have agreed to compete in the unprotected jurisdiction.

B.   Differing Periods of Protection

The problem of unequal protection also arises in the context of varied durations of protection. As matters now stand, for example, France protects software for twenty-five years, the United Kingdom protects it for the author's life plus fifty years, Germany does so for the author's life plus seventy years, and Greece may be contemplating a much shorter *sui generis* term. If programs retain marketplace vitality after the shortest of these Community protection periods has run, exploitation in the remaining jurisdictions must be severely undermined.[137]

This problem may be illustrated in the context of exploitation rights in videogames. If Germany, for instance, only protects videogames for a twelve-month period but French videogames enjoy a twenty-five-year copyright protection, German imports of original French videogames in the thirteenth month escape French protection of the author's exploitation rights. This may be an unintended consequence of original French marketing. Furthermore, the *Imerco, GEMA,* and *Deutsche Grammophon* decisions suggest that consented marketing of any type in Germany, after the twelfth month, may destroy the original French

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135. 1982 E. Comm. Ct. J. Rep. 2853, 37 Common Mkt. L.R. 47 (1983).

136. *Id.* at 2871, 37 Common Mkt. L.R. at 82.

137. *Cf., e.g.,* Duchemin, *Suggestions in vue d'une amélioration de la protection des photographies dans la Communauté Européene (Suggestions with a View to Improving the Protection of Photographs Within the European Economic Community)* (pts. 1 & 2), 105 RIDA 3 (1980), 106 RIDA 25, 94 (1980) (translated concurrently into English and Spanish) (concluding that the disharmonized lengths of protection for neighboring rights in photography are incompatible with the EEC Treaty and further threaten the extinction of this valuable cultural European substratum).

protection against parallel imports from that country. In short, the uneven nature of copyright protection, coupled with established EEC jurisprudence in this area, may well discourage dissemination of useful— or in the case of videogames, entertaining—works throughout the Community.

C. Software Licensing

Before examining appropriate responses to these Community problems, another broad but subtle issue must be addressed: Software licensing. Understandably, software vendors only reluctantly "sell" their products on the open market. Licensing intellectual property allows the interest holder to exploit each of his or her variously severed rights individually without losing downstream control. This creates uncertainty. On the one hand, it may be difficult to distinguish a "licensing" transaction from a sale of goods; on the other, it may be difficult to decide whether a transaction should be characterized as the licensing of a good's use (a rental), or as a contract for services. Marketing methods and rationalized distribution channels further complicate the latter distinction by implicating Community competition laws and again raising issues pertaining to the free movement of goods.[138]

The high volume market for relatively inexpensive home computer software illustrates the first difficulty, since the market will not support enterprises seeking to sign contracts with each individual prospective customer. One solution involves "shrink-wrap" licensing, wherein the manufacturer's label proclaims that purchasers "agree" to a traditional use license by the act of unwrapping the product.[139] The legal effect of these unilateral declarations remains open to doubt but, presumably, the practice deters casual copying by uninformed consumers.[140] From a Community law perspective, uncertainty arises because the transaction may appear to be a sale of goods subject to all of the intricacies involved therein. Should the "license" seek to limit downstream use or transfer of the software, its enforcement might first stumble on this distinction between sale and license since a purchaser may never in fact have agreed

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138. For a concise and practical discussion of these matters, see Jerrard, *Applying the Rules of EEC Competition Law to Software Distribution and Licensing,* COMPUTER LAW., Feb. 1984, at 35. *Cf. generally* Blaisse, *Patent Licensing in the European Community: An Assessment of General Developments and the Present Position,* 1 LEGAL ISSUES EUR. INTEGRATION 27 (1985).

139. The product is usually a prerecorded diskette but the program could as easily be imbedded in a card that users "plug" into their computers, recorded on a conventional cassette tape, printed in a book or pamphlet, etc. For an outline of the issues involved in the mass-marketing of low cost software, see Gilburne, Grogan & McLoon, *A Practical Approach to the Coordinated Use of Copyright and Trade Secret Protection for Licensing or Selling Software,* in UNIVERSITY OF SOUTHERN CALIFORNIA LAW CENTER FOURTH ANNUAL COMPUTER LAW INSTITUTE, MAY 11-13, 1983 § V (1983).

140. *Id.* at 7-8.

to the license's provisions.[141]

Another protective marketing method employed by the software industry is site licensing. If a potential corporate or governmental customer is of sufficient size or prestige, it may make sense for aggressive software vendors to offer a type of volume discount wherein the target enterprise purchases the right freely to copy the program for its employees' use—rather than individually to license innumerable separate copies of the work.[142] The "site" may be geographically or institutionally limited, but the parties will always face sensitive problems in defining these arenas. The difficulty can only be exacerbated by the increased networking technology currently penetrating the micro- and minicomputer markets.[143]

From an EEC perspective, this type of transaction's attendant ambiguity again presents problems. If site licensing is in fact a volume discount of sales, articles 30 and 36 must govern the goods' exploitation. If, however, the software vendor provides updates, maintenance, troubleshooting, and so forth, the transaction may appear to be a licensed service requiring analysis under articles 59 and 60. In either event, if the vendor charges by the extent of use, limits the period of use, or downloads the program from a central mainframe,[144] the copyright owner's interest could then be characterized as consisting in the number of performances for which it can charge a fee. This situation presents a hybrid goods/service license that might or might not parallel the transaction involved in the *Coditel* litigation.

The interpretation of articles 59 and 60 remains somewhat unresolved in Community jurisprudence since it is unclear to what extent these provisions must be analogized to articles 30 to 36. The goods rules pertain to free movement; the services rules pertain to restrictions on provision. Movement involves boundaries and barriers; providing services involves individuals and nationalities. Thus, the concerns about artificial partitioning of the market that animate the Court of Justice's copyright-in-goods cases do not necessarily apply to contracts relating to the provision of services.[145] Maintenance agreements do not utilize national barriers created by copyright to restrict products' movement nor do they restrict alien nationals from providing similar services. In fact, such licensing promotes dissemination of the monopoly product. Thus,

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141. This presents a pervasive difficulty in enforcing "shrink-wrap" contracts since an unscrupulous purchaser can always deny having seen or understood the manufacturer's notice.

142. *See* Rubin, *Site Licensing: What's in It for Users,* INFOWORLD, July 29, 1985, at 32; Vale & Harding, *Practical and Legal Issues Relating to the Marketing of Microcomputer Software by Means of Site Licenses,* COMPUTER LAW., Aug. 1985, at 1, 2.

143. *See* Rubin, *supra* note 142, at 32-33.

144. *See* Vale & Harding, *supra* note 142, at 6 (suggested methods of pricing).

145. *See* Von Gamm, *supra* note 131, at 591-92.

licensing contracts limited to broadly defined sites, based on geographical criteria, will not necessarily implicate the jurisprudential limitations of reasonableness outlined in *Coditel II.*[146]

On the other hand, the distinction between the "free movement" and the "unrestricted provision" of services may be overly formalistic. Most Community analysis proceeds from the point of view that goods, services, workers, and capital must all move freely.[147] Site licenses and use licenses[148] involve agreements in which the rights' owner agrees not to sue for infringement. So characterized, a software "service" organized along jurisdictionally determined operating lines may appear to be an artificial restraint on trade based on national copyright or intellectual property rules. If services must be treated in the same manner as goods, and if a vendor prices discriminately within the jurisdictions, it may be difficult for the vendor to justify any price disparities where the market does not have to be nationally segmented.[149]

This issue may also be raised in the context of software-run services. In this type of operation, the user purchases rights to a limited portion of a program's output rather than to the program itself. Obvious examples of such licensed use would be banking or shopping with a home terminal, where the user interacts with the vendor's program in carefully proscribed fashions, usually providing limited amounts of data in order to receive similarly limited output, such as an updated balance. Dedicated terminals providing access to specially organized databases—such as those popular in the legal profession[150]—are also essentially licensed uses

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146. *Coditel II,* 1982 E. Comm. Ct. J. Rep. at 3401, 36 Common Mkt. L.R. at 66 (territorial restrictions on licensed exhibition rights in film not prohibited where market logically and historically segregated according to language and technically entrenched distribution barriers).

147. In fact, this goal has now become Community law. The member-states recently amended their treaty with the Single European Act. *Bulletin of the European Communities* (Supp. 2/86). Article 13 of that act supplements the treaty as new § 8A: "The internal market shall comprise an area without internal frontiers in which the free movement of goods, persons, services and capital is ensured in accordance with the provisions of this Treaty." *Id.,* art. 13, at 11. *See also* Van Empel, *Pennies from Heaven or Pie in the Sky? Commercial Television and the Freedom of Services in the EEC,* 15 IIC INT'L REV. INDUS. PROP. & COPYRIGHT L. 478, 483 (1984) ("[I]t is apparent that the Court would not hesitate to apply its "products" case law to a "services" case.").

148. A common method of marketing, especially for large systems, is to license a program's use. This can be accomplished by installing the program at the user's site or by providing access via cable or telephone lines. Telephones and cable television have both been proposed as means of marketing computer and data base services to the home consumer market. Banking and shopping with the home terminal are two obvious applications. *See, e.g.,* Elmer-DeWitt, *Punching Up Wine and Foie Gras,* TIME, Dec. 1, 1986, at 65.

149. "[Copyright licenses are not prohibited] save where such application constitutes a means of arbitrary discrimination or a disguised restriction on trade between Member States. Such would be the case if that application enabled parties to an assignment of copyright to create artificial barriers to trade between Member States." *Coditel I,* 1980 E. Comm. Ct. J. Rep. at 903, 31 Common Mkt. L.R. at 400 (E. Comm. Ct. J. Rep. translation).

150. That is Lexis and Westlaw. Other examples of licensed access to a common database include multiple listing services (real estate) and library search systems (for example, Arlyn).

of a vendor's program, although in those instances the vendor itself provides data. In either case, discriminatory pricing among jurisdictions may be subject to objection, especially where the marketing scheme could be considered unjustifiably related to a country's intellectual property regime.[151]

Suppose, for instance, that the owner of a software system, operating on a sufficiently large mainframe, licenses the use of its programs to two department stores competing for business from opposite sides of a common national border. Afraid of piracy in the foreign jurisdiction—where litigation as to downloaded use and appropriation might appear likely, costly, or liable to fail—the software owner demands considerably higher fees from the foreign enterprise than it does from the "respectable" national store operating under favorable law. The disfavored licensee agrees to the higher price but negotiates a discount for any services sold to subscribers in the better-protected jurisdiction. Or, similarly, the vendor raises prices to the favored licensee once that enterprise penetrates the foreign market and piracy risks rise. In both cases intra-Community trade would be distorted.

If challenged, it is not clear how the Community will handle this type of situation. The difficulty of characterizing software and its modes of exploitation again brings us to the cutting edge of the law. On the one hand, the Court of Justice has shown a willingness to interpret the Treaty as requiring an unrestricted free movement of services.[152] The recently passed Single European Act reaffirms the member-states' commitment to such a policy.[153] Thus, the Court might superimpose its article 36 jurisprudence upon articles 59 and 60. Under this regime a licensor that voluntarily licenses its product/service in another Community state could not later protest the flow of that product/service to other member-states. A license that distorts commerce according to nationally defined criteria unrelated to industry practice or technical necessity should be unjustified. On the other hand, articles 59 and 60 actually only require a standstill in cross-border service discrimination.[154] Since the alternative to allowing such rationalized marketing schemes might be to discourage vendors from disseminating service to less-protected jurisdictions, the Court might do well to accept a distinction between goods and services.

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151. *Coditel I,* 1980 E. Comm. Ct. J. Rep. at 903, 31 Common Mkt. L.R. at 400.

152. *See, e.g.,* Gesellschaft zur Verwertung von Leistungsschutzrechten mbH (GVL) v. Comm'n of the European Communities, 1983 E. Comm. Ct. J. Rep. 483, 505, 38 Common Mkt. L.R. 645, 679 (1983).

153. *See supra* note 147.

154. Van Empel, *supra* note 147, at 480. Note that article 59 requires a progressive abolition of restrictions on the provision of services but does not provide a timetable for its achievement. Treaty of Rome, *supra* note 1, art. 59, 298 U.N.T.S. at 40-41. The Single European Act did not change this. *See supra* note 147.

Alternatively, the Court could sidestep the issue *in toto* by falling back on a *Keurkoop*-like analysis.[155] Under such a view, the Court would hold that where national laws remain unharmonized, private agreements taking account of these differences could not be considered inimical to the functioning of the Community market. Since the Court consistently stresses the importance of the factual matrices underlying its copyright discrimination decisions, this type of analysis would not be surprising.

Rational software licensors may not rely on price discrimination to discourage downstream dissemination to jurisdictions suspected of underprotecting software, however. It is more likely that vendors would merely make their desired restrictions explicit. That is, vendors would grant territorial licenses restricting inter-border competition and hope to preclude unstructured use and access in the suspect country. Such a practice raises a new set of complications.

Licenses constitute agreements between enterprises and are subject to Community competition laws. Article 85 of the Treaty prohibits "all agreements between enterprises . . . which have as their object or result the prevention, restriction or distortion of competition within the Common Market," especially those agreements between enterprises that share markets or sources of supply, or place parties at a competitive disadvantage by applying unequal terms to equivalent transactions.[156] Territorial licensing obviously implicates these provisions, especially where discriminately provided. In its *Maize Seed* decision of 1982,[157] a case involving breeders' rights, the European Court enunciated the first of two major principles governing the problem.

French and German licensees of the Institut National de la Recherche Agronomique (INRA), a French public body, had successfully thwarted competition from parallel importers by threatening, and bringing, a series of legal actions in the Federal Republic of Germany. One such importer, Bomberbault, lodged a complaint under article 85, which the Commission upheld. The German licensee appealed to the Court of Justice, which in its turn affirmed the Commission's ruling. The Court held that while it was perfectly legitimate for INRA to grant "open exclusive licenses"—which promised that INRA, as licensor, would refrain from granting further licenses within the contractually defined territory—it was illegitimate further to agree to preclude all

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155. *See supra* text accompanying notes 135-136.

156. Treaty of Rome, *supra* note 1, art. 85, 298 U.N.T.S. at 47-48.

157. Nungesser v. Comm'n of the European Communities, 1982 E. Comm. Ct. J. Rep. 2015, 36 Common Mkt. L.R. 278 (1983) (*Maize Seed*) (also available in abbreviated form at 14 IIC INT'L REV. INDUS. PROP. & COPYRIGHT L. 256 (1983)).

third-party competition within that territory.[158] This would amount to an agreement between enterprises having as its object or effect the prevention, restriction, or distortion of competition within the common market, in direct contravention of the Treaty.[159] Thus, INRA could promise its licensees that it would not compete in the defined territory, and it could promise that it would grant no further licenses within that territory, but it could not promise to eliminate all competition from third parties, be they licensees from other territories, or parallel importers such as Bomberbault. Thus, the first principle enunciated by the Court is that exclusive licenses granting absolute territorial protection are prohibited.[160]

It would seem, then, that a software vendor attempting to rationalize downstream exploitation via exclusive licenses—such as postulated in the department store shopping hypothetical—would not succeed. This is true only to a limited extent, however, a point made clear in *Coditel II.* The *Maize Seed* case involved the "manufacture" and sale of goods, namely, seed. But, where a copyright owner's interest is determined by calculating exhibition fees, the protected interest can be characterized as a provision of services.[161] This is the second major principle applicable to the analysis of licensing.

As in the free movement cases, agreements to limit diffusion of services do not constitute per se violations of the Treaty, in this case article 85, where they can be justified by the special characteristics of the relevant market.[162] Since the hypothetical vendor of a software-driven dissemination of information does not relinquish control of the program's physical environment, but instead provides serially measured access to its use, the vendor will almost certainly be able to prove that it provides a service rather than a good. The second point, however, remains problematic. It may be difficult to prove that downstream segmentation is in fact dictated by the "special characteristics" of the market. The producers in *Coditel II* successfully argued that traditional exploitation of films utilized national boundaries for reasons unrelated to protectionism. The special characteristics of the Community's film industry included language barriers requiring subtitling, the single-entity government monopolies of television broadcasting, the industry's financial infrastructure,

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158. *Id.* at 2069, 36 Common Mkt. L.R. at 353, 14 IIC INT'L REV. INDUS. PROP. & COPYRIGHT L. at 259.

159. Treaty of Rome, *supra* note 1, art. 85, 298 U.N.T.S. at 47-48.

160. *But see* Joliet, *Territorial and Exclusive Trademark Licensing Under the EEC Law of Competition,* 15 IIC INT'L REV. INDUS. PROP. & COPYRIGHT L. 21, 33-38 (1984) (arguing that licensing generally improves competition and that the case would have been better analyzed as a free movement of goods problem).

161. *Coditel I,* 1980 E. Comm. Ct. J. Rep. at 902-03, 31 Common Mkt. L.R. at 399-400.

162. *Coditel II,* 1982 E. Comm. Ct. J. Rep. at 3401-02, 36 Common Mkt. L.R. at 66.

and so forth.[163] None of these types of factors would appear to apply in the context of the Community's rapidly developing hardware and software markets.

First, in order to survive, hardware manufacturers must operate in an international setting.[164] As a consequence, the user market of a particular computer is seldom limited to a single country. IBM sells the same PC in both France and Italy. Those IBM PC's will run any program, interacting in any human language, designed for IBM's PC architecture. Therefore, segmentation of a software market along national lines cannot be justified as a technical necessity.[165]

The argument as to language barriers carries more weight in that the popularity of a program written for French speakers will obviously be greater in France and Belgium than it will be in Italy. Territorial licensing may be a convenient means of marketing. This misses the point, however. National segmentation of a licensing market cannot be justified by variations in demand. It is justified, if at all, by the impracticalities associated with dismantling entrenched mechanisms of distribution and exploitation. But, in the youthful, internationally based, computer hardware and software markets, it may be difficult to prove that such infrastructures exist or need to exist. Distribution mechanisms will have been imposed by the industry rather than mandated by the technical or political past. Thus, a software/service vendor carries a difficult burden in seeking to argue that the entrenched special characteristics of its marketplace justify an agreement to segment distribution according to national boundaries.

This does not end the analysis, however. In an appropriate case the "entrenched" characteristics of the market may not define all of the "special" characteristics of the market. If a vendor can prove that unauthorized access to its service is more likely to occur in one jurisdiction than it is in another, this in itself may constitute a special characteristic warranting limited exclusive licenses. The strength of such an argument will be

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163. *Id.* at 3401, 36 Common Mkt. L.R. at 66.

164. U.S. high technology firms commonly target 35-40% of their total profits to be made in international trade. Address by Miles Gilburne, Publisher of COMPUTER LAW., in Berkeley, Calif. (April 23, 1986) (videotape available in Boalt Hall School of Law library and from Boalt Hall Computer Law Group).

165. Truly European solutions may not envisage such a standard-setting role for U.S. multinational firms, however. *See* Ramsey, *Europe Responds to the Challenge of the New Information Technologies: A Teleinformaties Strategy for the the 1980's,* 14 CORNELL INT'L L.J. 237, 245-52 (1981) (outlining Commission proposals and draft declarations for the integration of European telecommunications market); *cf.* Woolcock, *supra* note 5 at 323-24 (arguing that Europe might do well to impose its own Community-wide standards rather than continue to follow those of market-dominating IBM); *see also* P. MAILLET, THE EUROPEAN COMMUNITY'S INDUSTRIAL STRATEGY 49-55 (1982) (European Documentation Series No. 5/1982) (decrying IBM dominance and making similar proposals).

strongly fact-dependent, and will be a matter for the national courts to decide.[166]

As a practical and final point, licensors may be able to avoid all of these difficulties by means of a negative clearance or group exemption granted by the EC Commission.[167] However, Regulation 1983/83[168]— which comprises the current group exemption relating to exclusive licensing—merely codifies the Court of Justice's interpretation of article 85. It affords no more scope for contractual creativity than is already available under the Court's decisions. On the other hand, negative clearances are issued where applicants demonstrate that the effect on trade between member-states of their agreement is insignificant or that it promotes technical or economic progress while allowing consumers a fair share of the resulting benefit.[169] Depending on the facts of the individual case, both arguments seem plausible in the software marketing context and both will certainly be tested as that market continues to evolve. This very evolution, however, threatens the longevity of a negative clearance and may be seen by both the Commission and the software industry as an inadequate response to the problems of disharmony.

V

POLICY OPTIONS

The variegated forms of protection offered software by the EEC member-states serve, then, to illustrate a number of the intricacies and lacunae associated with the European Court's emerging copyright jurisprudence. At a larger level, however, the problems associated with protecting software illustrate the inadequacy of the Community's disharmonized response to the challenge of modern technology and intellectual property in general. Policy declarations without means of implementation merely perpetuate the increasingly inefficient under-scaled economies based on single-nation markets.[170] A Community able freely to trade and exploit software will achieve benefits for its citizens through increased information access and manipulation, and it will achieve benefits for its software creators through stimulation and exploitation of ever-widening markets. This Part, therefore, argues that the Community should actively seek to harmonize its treatment of software, and suggests

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166. *Coditel II,* 1982 E. Comm. Ct. J. Rep. at 3402, 36 Common Mkt. L.R. at 66.

167. Treaty of Rome, *supra* note 1, arts. 85(2), 87, 298 U.N.T.S. 48, 49.

168. 26 O.J. EUR. COMM. (No. L 173) 1 (1983).

169. *See* Jerrard, *supra* note 138, at 36.

170. *See, e.g.,* Woolcock, *supra* note 5, at 324-30; *cf.* Van Bentham, *The European Patent System, Today and in the Future,* 6 EUR. INTELL. PROP. REV. 182, 184 (1984) (generally optimistic report by president of European Patent Office, nonetheless concluding that a unified community patent is not presently feasible and that unnecessary duplication of effort continues).

three schemes of generalized action that are superior to the present course of hopeful inaction.

Traditional notions of authorship and individual rights only partially reflect the reality of software production. Software's usefulness to industrializing nations will increase as the telecommunications industry provides greater technical integration between nations. As a result, the demand for software in some countries will almost certainly outweigh the perceived cultural benefits traditionally associated with protectionist copyright regimes. Insulating rich institutional "authors" at the expense of progress must increasingly concern excluded states, some of whom are now members of the Community, and others of whom may wish to join.[171]

On a global level, this perceived inequality in access to information permeates the North-South debate and could harden into defiance where the disharmony of copyright laws deters marketing in countries whose laws inadequately protect such information. At the Community level, software distributors may face a similar problem. Fearing piracy, and mindful of Community rules, vendors may seek to limit their spheres of consented marketing to protected jurisdictions. This would increase the temptation to copy in the high-risk but information-hungry countries. As a result of such spiraling tension, the common market would become less "common," more stratified, and the Community's already shrinking chances of being able to compete in the global telecommunication and information markets would only be further reduced.[172] The obvious solution to this problem is to achieve a workable harmony of protection throughout the EEC.

Currently, the northern industrial member-states have reacted to the beleaguered software community's demands by characterizing software as a literary work within the meaning of their respective copyright laws. While no doubt justified, these characterizations may soon be self-defeating and unenforceable. The demand for software and the ease with which it is copied have already forced vendors in protected states to resort to half-measures such as site licensing in order to recoup profits otherwise lost through institutional sales.[173] In less affluent states, granting a monopoly lasting for fifty to seventy years beyond an author's life in a market where the product only retains vitality for two to three years[174]

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171. Turkey, for example, has expressed interest in Community membership. For analysis, see Baysan, *Some Economic Aspects of Turkey's Accession to the EC: Resource Shifts, Comparative Advantage, and Static Gains,* 23 J. COMMON MKT. STUD. 15 (1984). Reimer lumps Turkey with Portugal and Greece in terms of hostility to copyright, estimating that pirated goods comprise 80% of its total tape recordings market. Reimer, *supra* note 114, at 511.

172. *See generally* Woolcock, *supra* note 5, at 324-27.

173. *See* Vale & Harding, *supra* note 142, at 1, and sources cited therein.

174. *See* Staines, *The Consumer as Enemy,* 2 COMPUTER L. & PRAC. 138, 138 (1986) (leisure

will undoubtedly seem oppressive and unwarranted. Piracy will flourish. This can satisfy neither the software manufacturers nor the member-states.[175]

What, then, are the options presented the Court in this evolving dilemma? First, and most obviously, the present market and political actors can stay their course and hope for an unimposed harmony to develop. This option has the advantage of being both politically feasible and desirable. Only Italy, Greece, Spain, Portugal, Belgium, and Luxembourg remain unofficially declared as to copyright protection for software—and each shows signs of at least scholarly acceptance of such protection.[176] There are two problems with this option, however. First, the hoped-for harmony may never in fact be achieved. Scholarly acceptance will not necessarily translate into governmental action. Second, if member-states do not enforce "officially" recognized copyright, hypocrisy results. "Official" and actual law no longer coincide. Then, since copying will not be controlled, it will almost certainly occur. In the meantime, costs increase to noncopying consumers forced to pay premiums on their bona fide purchases.

Of course, some will argue that an official adoption of copyright automatically curbs piracy by creating a constant threat of enforcement. This is true, however, only to the extent that the public perceives a governmental willingness to enforce the rights-holder's monopoly. Where member-states declare for copyright, but never find infringement, or continually delay relief, the hypocrisy must in the end erode the official declaration's deterrent force.

Further, official "harmony" does not reduce actual cacophony. The protection that "copyright" officially grants can vary broadly. Germany protects some programs for seventy years plus the author's life, but leaves open the possibility that other programs, such as videogames, will not be protected because they do not reach the level of "personal intellectual creations."[177] France explicitly protects software, but only for twenty-five years—and this is under a constitutionally questionable scheme.[178] The United Kingdom's entire copyright act is under revision,

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applications have two to six months "shelf life"; business applications "live" approximately 18 months).

175. Note, however, that the high courts of Germany and France both carefully limit protection to original software only. *See supra* notes 59-83 and accompanying text. Although this reticence has been criticized by northern scholars, it may indicate an admirable awareness by those courts of the wider social issues involved. Still, both courts affirmed the originality of the programs they reviewed. It remains to be seen whether "trivial" programs will ever in fact actually be dedicated to the public domain. *See also* Staines, *supra* note 174, at 140 (arguing that maximum publicity is more important to success in the volatile software market than is maximum protection).

176. *See supra* Part III.

177. *See supra* notes 55-72 and accompanying text.

178. *See supra* notes 73-86 and accompanying text; *see also infra* note 186.

and scholars continue to revile the amendment that specified software as copyrightable literary work.[179] Even assuming that the Community's southern nations accede to copyright as a legal label, there can be little doubt that their jurisprudence will further complicate the already uneven protection which exists throughout the Community.

In such an uncertain environment, authors must recoup their investment and take profits immediately. Even those countries willing to enforce copyright may not actually be able to enforce it, given the ease of both domestic piracy and the possibility of legal reimportation of copies made in neighboring, unprotected jurisdictions. Demanding an immediate return on investment creates problems in addition to artificially high pricing, however. It also reduces authors' incentives to plan for long-term revenues through servicing and updates, a significant source of income that could be obtained at modest pricing levels through Community-wide marketing. By encouraging a system based on hypocritical copyright "harmony," therefore, the Community is actually discouraging consumer access to software. Since noncopying consumers will have to pay premiums on their legitimate purchases, the range of programs available to them will be limited. In addition, because copying is difficult to stop, software manufacturers will have little incentive to maintain the integrity of the programs in circulation.

Of course, political considerations often force Community member-states to settle for "harmony" in such disputed matters even though "uniformity" would better serve the ideal of European integration. Nonetheless, the case for uniformity has merit. European efforts to break into the high technology global markets have met with limited success, a result partially due to the fractionalization of the Community along technical lines.[180] A uniform approach to protection of software, coupled with Community manufacture and standardization of software and hardware could, on the other hand, create market opportunities for Community enterprises that are now reserved to powerful, non-Community, multinational corporations able to dictate to world and European markets, such as IBM.[181]

Notably, the European Strategic Program on Research in Informa-

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179. *See, e.g.,* Shipley, *Computer Software Copyright—The Same but Different?,* 7 EUR. INTELL. PROP. REV. 307 (1985).

180. *See, e.g.,* Woolcock, *supra* note 5, at 324-30.

181. *See, e.g.,* Raines, *supra* note 8, at 138-40 (IBM able to create fear, doubt, and uncertainty in computer market to own advantage and selectively to favor its own software by virtue of its market and technical position); *see also* Adler, *Ideological "Guerrillas" and the Quest for Technological Autonomy: Brazil's Domestic Computer Industry,* 40 INT'L ORG. 673 (1986) (Brazil's rejection of multinational corporations' involvement in domestic market as form of protectionism for its embryonic computer industry). *But see Brazil: Tomorrow's Italy,* THE ECONOMIST, Jan. 17, 1987, at 21 (characterizing the experiment as technocratic disaster).

tion Technology (ESPRIT), a Community organization sponsored by the Commission, has reached a similar conclusion. In order to promote the development of both the European market and the Community's ability to serve it, the organization has called for the production of freely transferable software modules that can be reused in a multitude of programs so as to improve Europe's technological position in the global market.[182] Thus, the concept of public domain software that advances Community-wide interests receives official support while, at the same time, individual policies of member-states retard similar dissemination of privately created programs through the very long terms of copyright protection granted to such programs. Harmonization without consensus thereby contravenes even those goals which are acceptable to all member-states in the EEC.

Several activist steps commend themselves in place of the current unfocused, case-by-case, statute-by-statute "evolution."[183] Three such steps will be proposed here. The easiest course of action open to the EEC would be to follow the French lead and press for a Community-wide protection of the minimum length possible under copyright and the Berne Convention, that is, twenty-five years.[184] If this period seems overly long, the Berne Convention itself should be amended[185] so as to include a special *sui generis* section specifically allowing for a less lengthy period of protection. Another possibility is that member-states could be encouraged to recant their positions as to the literary nature of programming, a course that, however, has obvious difficulties.[186] Enhanced

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182. Nasko, *supra* note 8, at 71, 72.

183. The Commission plans to publish "as soon as possible" a paper concerning copyright and Community law that will discuss software. 7 EUR. INTELL. PROP. REV. D-195 (1985) (news item). Presumably the paper or directive will address many of the problems and proposals discussed herein. Consequently, a similar paper regarding the Europeanization of the television and broadcasting industries may be of interest. In that paper, the Commission proposed a compulsory licensing scheme whereby authors' legitimate demands for rewards and incentives could be adequately balanced against the benefit of transborder broadcasting. *See* Morrow, *Developments in European Telecommunications Law and Policy,* 24 COLUM. J. TRANSNAT'L L. 165, 167 (1985) (summarizing report). Unfortunately, such integration schemes do not necessarily meet with member-states' approval. *See, e.g.,* Hoogakker, *Review of the Report on 'Television Without Frontiers' by the House of Lords Select Committee on the European Communities,* 8 EUR. INTELL. PROP. REV. 220, 221 (1986) (English reaction).

184. *See supra* notes 73-86 and accompanying text.

185. This would not be unprecedented. For instance, the Convention was amended in 1908 in order to accommodate the new technology of motion pictures. Berlin Act (1908), Berne Convention, art. 14; *see* S. STEWART, *supra* note 4, at 93.

186. By removing the literary or scientific label from software, the Berne Convention provisions protecting such work would become irrelevant. However, the constitutionality of the shortened French regime has already been questioned. *See* 7 EUR. INTELL. PROP. REV. D-116, D-116 (1985) (news commentary); *cf.* Clay & Cousin, *The New French Law on The Protection of Computer Software,* COMPUTER L., Sept. 1985, at 5, 7 (suggesting that French parliamentarians chose a 25-year period of protection as the minimum period consistent with the Berne Convention's recognition of applied—not literary—works). Under French law, statutes are invalid insofar as they contradict

enforcement and penalties should accompany the reduced period of protection in order to assure entrepreneurs of a reasonable profit by reducing competition from unauthorized copying. Copying should become less justifiable to consumers once they realize that they are more likely to be punished if caught, and that the work will become public property within a relatively short time.[187]

Of course, adoption of such a scheme for standardizing and minimizing the time period for protection would not automatically improve Europe's posture vis-a-vis non-EEC countries. Foreign authors would gain and lose protection in the same manner as would Community authors. If, however, the Community could standardize the underlying hardware used in its computer and telecommunications markets, European software entrepreneurs familiar with those devices would be given the natural headstart associated with technological know-how. Rather than having to force IBM to disclose its plans for peripherals and future generations of other standard-setting devices,[188] the Community could manufacture such advantages for itself. Further, Europeans would presumably have easy access and rights to successful programs interacting with users in European languages. These programs could be code-translated rapidly so as to take advantage of the EEC-wide economies of scale. If operating systems remain protectable under the proposed scheme, the rights-holders in the hardware-interfacing software could further protect what could easily become a burgeoning and synergistic industry from unauthorized competition, a tactic that Apple Computers, for example, has used successfully under the current copyright regimes.[189]

This policy proposal focuses on the correct balancing of an author's incentive against the public benefit of dissemination, an entirely correct approach to traditional copyright works. But software, by virtue of its utilitarian nature, implicates another consideration: freedom of access to the program's useful ideas and methods. In patent law, the creator's monopoly incentive is balanced by a relatively short period of protection and by rigid requirements of registration and disclosure. Thus, as soon

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that nation's international treaty commitments. Judgment of May 24, 1975, Cass. ch. mixte, 1975 Bull. Civ. Ch. Mix. 6 *(Café Vabré)*. Literary works, under Berne, must receive a minimum period of protection of 50 years *post mortem auctoris,* but the French scheme protects *logiciels* for only 25 years. *See supra* notes 73-74 and accompanying text. Similarly, schemes derogating from traditional copyright may run afoul of the Convention's protection of authors' moral rights. *See* Davies, *New Technology and Copyright Reform,* 6 EUR. INTELL. PROP. REV. 335, 338 (1984); WIPO 1985 Meeting, *supra* note 45, at 147.

187.	A similar *sui generis* scheme has been enacted in order to protect the semiconductor chip industry in the United States, an act upon which the Commission has patterned a similar proposal. *See* Gadbaw & Benz, *The Semiconductor Chip Protection Act of 1984—Experience in the Utilisation of the Law and Current International Developments,* 8 EUR. INTELL. PROP. REV. 229, 237-39 (1986).

188.	*See* Raines, *supra* note 8, at 144-45.

189.	*See supra* note 85.

as the protection period runs, the patented idea is available to all interested parties. In the meantime, the idea has been both published and explicated. This becomes relevant in the software context because copyright's inability to deter misappropriation has driven the software industry to adopt self-help measures that inhibit user access to underlying programs by technical means. By staying their present course, the Court and Community could therefore be inadvertently overprotecting software by sanctioning long-lived legal patronage while at the same time encouraging secrecy as to a program's functional innovations. Copyright protection of traditional works never faces this problem because publication or performance in itself discloses the author's method of operation.

This raises the second broad policy option. Patent protection for software has been uniformly rejected by the global community,[190] but official registration of software within a weaker copyright scheme might at least allow for a wider dissemination of a program's underlying innovations. For instance, the Community might guarantee a copyright-like market-wide protection of computer programs, perhaps on the French model, but require all creators desiring such protection to deposit hard copies of the program's underlying code with a collecting governmental body. Manufacturers seeking the granted privilege would be required to warn potential users of the claimed protection. The deposited code would in turn be available to all interested parties, but direct copying of its structure or elements would be prohibited. Thus, the ideas underlying the work would be available to society at large, but the creator's personal expression of those ideas could only be exploited by the holder of his or her rights. Notably, a similar idea has already been proposed within Germany's patent office in reaction to that country's recently passed legislation.[191] The chances of success for such a scheme will be slim, however, if software continues to be analyzed as a traditional literary work. The Berne Convention prohibits any sort of formality in the recognition of copyright.[192] Again, amendment of the Convention should be considered so as to allow special treatment of software.

As a third, rather drastic, option the Community could recognize the trend that software vendors have already had to accept: unworkable copyright protection may have to be replaced by other methods of cost recovery and exploitation. While it is true that any type of technical restriction to a program's code can eventually be reverse-engineered by sufficiently motivated experts, such technical inhibitory devices at least

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190. WIPO 1985 Meeting, *supra* note 45, at 147.

191. Interview with Ernst K. Pakuscher, President, Federal Patent Court of the Federal Republic of Germany, and Honorar-Professor, University of Regensberg (Bavaria), in Berkeley, Calif. (May 1986).

192. Berne Convention, art. 4, *supra* note 39.

delay widespread misappropriation.[193] In the meantime, unfair competition rules could assure software vendors lucrative exploitation of market opportunities. Coupled with judicious grants of renewable licenses, tied updates, maintenance agreements, and so forth, the industry might be able to achieve a steady stream of income without any need for copyright protection.[194] In fact, it is entirely possible that manufacturers could eventually find such copy-protection devices counterproductive. If a company strategically markets hard-copy documentation, "hot-line" telephone services, constant "necessary" state-of-the-art enhancements, and so on, it could even find itself encouraging copying, as an aid to widespread dissemination of its income-generating product.[195]

Another factor informs this analysis. Hardware manufacturers depend on software dissemination to sell their products. Programs are a computer's "fuel." Thus, a lack of software impedes technical innovation and is considered the greatest bottleneck in widespread computer utilization today.[196] A radical response to the need for both dissemination of programs and incentives for programmers would be to shift the burden of programmers' remuneration back to the hardware manufacturers. By licensing their computers' use rather than selling the discrete units outright, manufacturers could create a steady income stream from which to compensate programmers who are designing software for that particular system. The software could be provided without charge, or at a minimal price. Copying might even be encouraged since it would promote long-term licensing demand.

This proposal has the advantage of encouraging program updates and the rapid dissemination of new products. It also encourages the provision of satisfactory troubleshooting procedures for unsophisticated users. But it suffers serious problems also. First, it would almost certainly meet with vehement opposition from hardware manufacturers who can now market their products in reliance on the provision of compatible software by third parties, then walk away from the transaction.[197] Software vendors may also balk at this reduced market for their wares. Rather than competing in the consumer marketplace for their reward, vendors would be faced by hardware enterprises able to control a machine's software supply. Manufacturers might be able to dictate inappropriately low purchase prices for software since they would be negoti-

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193. Greguras, *Technical and Other Practical Software Protection Measures,* COMPUTER L., Apr. 1984, at 22.

194. *See generally* Mace, *Copy Protection Refuses to Die,* INFOWORLD, Jan. 20, 1986, at 27-28.

195. *See* Barrack, *Sell Support,* INFOWORLD, Aug. 20, 1984, at 7 (regarding income stream generated after sale of code).

196. Address by Miles Gilburne, *supra* note 164.

197. Of course, if the public perceives an actual or potential lack of software for a particular computer, that computer could meet with considerable resistance in the marketplace.

ating deals before any demand for a particular program could in fact be demonstrated. On the other hand, hardware manufacturers would need to keep the demand for their licensed product high—or forego any future benefit from that model.[198] Market interplay might adequately adjust these tensions.

Finally, however, this type of scheme could founder on antitrust rules. Control of the downstream market for software may smack of unacceptable market manipulation through vertical integration, a problem already faced by the Community in its IBM litigation.[199] Although hardware manufacturers would continue to compete on the amount and quality of software their systems could support, the perceived benefits might not justify the anticompetitive costs associated with an entire industry's absorption by its spawning enterprises. Still, vertical integration is not a per se violation of EEC antitrust rules. Where such integration could broaden the dissemination of both hardware and software to Community consumers and businesses, it must be considered superior to the current ad hoc approach.

CONCLUSION

In summary, software challenges the European Economic Community's intellectual property regime at both the legal and the political levels. It implicates that regime's carefully delineated jurisprudence but will soon, almost certainly, test that framework's flexibility.

Structurally, Community law currently includes copyright among those matters governed by articles 30 and 36 and, less clearly, by articles 59 and 60. But it is not clear that the policy goals underlying those articles apply equally to all aspects of copyright. The creation of a single functioning market through the reduction of artificial jurisdictional restraints threatens to eliminate the creative incentive justifying copyright protection. Thus, the exercise of nationally authorized economic rewards to creative entrepreneurs has been sanctioned by the Court of Justice, despite their arguably distorting effects on trade. In recognizing these exceptions to the otherwise "common" market, however, the Court has evoked a series of limiting overlays that seek to achieve a balance between incentive to individual creativity and cultural dissemination. Software and its evolving market stretches this legal framework to near

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198. Note, for instance, that Apple Computer's phenomenal growth—in fact, its creation of the home computer market—was almost certainly made possible by the existence of the spreadsheet program, VISICALC. The two created a marketplace synergy. Address of Roger Borovoy, General Partner of Sevin Rosen (venture capital firm based in Sunnyvale, Calif.), former General Counsel of Intel Corp., in Berkeley, Calif. (Feb. 2, 1987) (videotape available in Boalt Hall School of Law library and from Boalt Hall Computer Law Group).

199. *See generally* Raines, *supra* note 8.

absurdity. Software can be a service or a good; it can be tangible or intangible; it may be translated, easily copied, hidden from view, or printed in books—and it is necessary to make computers work. Each of these characteristics implies a different treatment under Community rules.

But at a deeper level, copyright protection of computer programs illustrates the tensions inherently associated with a "common" market that is organized so as to protect the status quo of "wealth" in information.[200] Those nations denied access to a program's use, or inhibited from discovering its underlying operation, cannot help but question the functioning of a market in which such opportunities can be discriminately withheld.

At the legal level, then, a European Court confronting these issues must seek to satisfy a multitude of competing policies. It must keep in mind not only legal precedent and the legitimate concerns of the various interest groups, but also must take into account the Community's ultimate mission: political integration through economics. The obvious course is to encourage a workable harmonization of laws—and preferably a uniformity of those laws—that will allow programmers and the industry that supports them to survive and flourish. This goal will be accomplished when affordable access to a program's use and ideas reduces the temptation merely to appropriate those features.

Two broad courses exist. On the one hand, the Court can continue on its present course by reaffirming its test of "consented marketing." If software competition from pirates or other freeriding enterprises cannot be traced to an explicitly authorized first sale by the copyright owner, an injunction against such pirating would be allowed under national law. This approach has the advantage of political acceptability since each member-state would essentially chart its own course. The chief disadvantage is that the scheme encourages harmonization through hypocrisy. If copying is rampant because prices are too high, or because the programmer's reward seems too remote or undeserved, enforcement will be difficult no matter what law has passed. The scheme also distorts distribution of software by discouraging its dissemination in unprotected jurisdictions. Still, if the premiums paid by law-abiding consumers can support the industry without driving those consumers to illegal copying also, the status quo will be preserved. Unfortunately, the status quo is not one favorable to enterprises native to the EEC.

Similar results will be achieved if the Court merely finds, as it did in *Keurkoop,* that the lack of harmonization precludes enforcement of Community rules assuring the free movement of goods and services. Enforce-

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200. *See generally* Pendleton, *supra* note 52 (information as new age wealth).

ment of national protection rules would then be allowed. Again, the present copyright regimes would entrench the status quo.

The alternative to these two options is drastic and would require a rather greater resolve by the Court and other Community actors. It is a posture, however, that could revitalize the Community's high technology industry. The Court, in order to achieve harmony and eventual uniformity of law, could sanction present disharmony. It could hold that, although copyright is in fact governed by the Treaty of Rome, not all aspects of copyright are governed by that agreement. The Court could distinguish the useful industrial matter that some countries protect via their copyright regimes from the cultural-aesthetic matter traditionally associated with copyright. Utilitarian goods and services such as software could then be subjected to rigid Community rules. Although this would create an uproar in the software industry, it would at least galvanize a rethinking of the arguable overprotection granted by enforced copyright, and of the hypocrisy of unenforced copyright. This, in turn, would encourage a Community-wide treatment of a novel problem which, if achieved, could create a new Community-wide economy of scale rather than one based on the limited number of consumers willing to pay premiums in order to offset losses from widely copied software.[201]

Collaterally, the latter approach encourages a Community-wide harmonization of traditional copyright and its associated moral rights; matters which seem oddly out of place in the context of industrial goods.[202] This Comment has therefore suggested three courses of action that would better serve the Community than its current inertial acceptance of the status quo: a *sui generis* scheme, similar to copyright, that radically reshifts the balance of dissemination and entrepreneurial incentive; registration within existing or created copyright schemes so as to publicize the work's underlying ideas and methods; and/or altering the system so as to

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201. Blaisse comes to a similar conclusion in his analysis of current Community "treatment" of patent issues.

> The substantial amount of freedom allowed to licensing parties to protect and partition markets within the EEC will almost certainly have adverse effects on the international integration and competition policies that form part of the basis of the European Community. Such consequences are extremely regrettable. On the one hand, the continued division of the European market will only impair its economic recovery as a realistic competitor of the world's present superpowers. On the other hand, it may be wondered to what extent the ideals of a Common Market, to which all Member States at one time subscribed, can ever be realized if those Member States and private parties as well will continue to insist rigidly on the prevalence of national economic interests as opposed to the interests of a truly international Community.

Blaisse, *supra* note 138, at 66 (footnote omitted).

202. *See* Dietz, *A Common European Copyright—Is It an Illusion?*, 7 EUR. INTELL. PROP. REV. 215, 215-17 (1985) (arguing that the distinction between industrial and cultural matters could unify European copyright thinking, incidentally presaging the French limited rights doctrine as to software).

make hardware manufacturers responsible for supporting the software entrepreneurs currently "fueling" their computers.

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