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Softright: A Legislative Solution to the Problem of Users' and Producers' Rights in Computer Software

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COMMENT

SOFTRIGHT: A LEGISLATIVE SOLUTION TO THE PROBLEM OF USERS' AND PRODUCERS' RIGHTS IN COMPUTER SOFTWARE*

I. INTRODUCTION

If any issue from any of the top microcomputer magazines for the last two years were selected at random and read carefully, the reader would probably find at least one reference to the problem of software piracy or the problems created by the industry's efforts to curb piracy through copy protection schemes. At least one of these magazines has devoted an entire issue to the subject,[1] and many have included major articles on the subject. The flurry of literature and the complaints from all sides indicate that there is a serious problem and that there is widespread dissatisfaction with the current state of the law and industry practice concerning intellectual property protection of software in the United States.

The problems have increased as changes in technology have caused the microcomputer marketplace to become part of the mass market. When a similar problem developed in the recording industry as advances in technology spurred its expansion into a booming mass market over a decade ago, the copyright law was revised to provide intellectual property protection schemes that met the needs created by advances in technology.[2] Despite recent minor changes in the copyright law concerning computer programs,[3] major revisions of the intellectual property protection schemes for computer software are still needed.[4] As the complaints of programmers, developers, and users demonstrate, the minor revisions made in 1980 have done little or nothing to solve the problems.

This comment will examine the intellectual property protection currently available for computer software under copyright, trade secret and patent law. It will then examine the complaints of the software programmers, developers, and distributors to discover what they are dissatisfied with in the current law and how they view their needs for increased or better intellectual property protection. It will also examine the reasons offered by those who copy software and whether the needs these reasons reflect can or should be addressed in possible revisions of the law. The

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1. *Special Section: Software Piracy*, INFOWORLD, Mar. 22, 1982, at 31-47.

2. *See* 17 U.S.C. §§ 101, 102, 106, 112, 114, 202, 402, 403, 405, 407, 408, 503, 506, 602 (1982).

3. *See id.* § 117.

4. Anderson, *Software Law: He's Forging a New Specialty Where Law, Technology Meet*, USA Today, Dec. 6, 1983, at 3B, col. 3.

final section of this comment will consist of suggested legislation which attempts to tailor the law to the needs of programmers and developers as well as users, to discourage unwarranted copying of software, and to make the enforcement of intellectual property rights in software a practical reality.[5]

II. THE CURRENT LAW OF SOFTWARE PROTECTION

A. Copyright Protection for Software

1. Historical Overview

Computer programs are currently copyrightable,[6] but this has not always been the case. Before the passage of the Copyright Act of 1976, there was considerable doubt about whether computer programs comprised copyrightable subject matter. The Copyright Office refused to accept copyright applications for computer programs until 1964, and from 1964 until 1978, registrations were granted only under the "rule of doubt."[7] In the Copyright Act of 1976, Congress expressed an intention to grant some form of copyright protection to computer programs.[8] The extent of the protection granted, however, was unclear. Even the Computer Software Copyright Act of 1980 does not clearly define the extent of protection. Furthermore, the number of cases actually decided is small, and only a few issues have been addressed by more than one circuit of the courts of appeals. Often an issue has been addressed only by a single district court, and, therefore, the issues are far from settled.

2. Elements Necessary for Copyrightability

Copyright protection attaches to works of authorship which: (1) comprise copyrightable subject matter; (2) are originally created by the author;

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5. This Comment assumes that the reader has a basic knowledge of computers and computer terminology. For a brief introduction to computers, see Note, *Copyright Protection for Computer Programs in Read Only Memory Chips*, 11 HOFSTRA L. REV. 329, 333-44 (1982).

6. 17 U.S.C. §§ 101, 117 (1982).

7. OFFICE OF REGISTER OF COPYRIGHTS, ANNOUNCEMENT SML-47 (May 1964); COPYRIGHT OFFICE CIRCULAR R 310 (Jan. 1965). The "rule of doubt" is a rule under which the Copyright Office will register the work even if there is some doubt about whether the work is copyrightable subject matter. When the Office doubts the copyrightability of a work, its policy is to give the registrant the benefit of the doubt and to register the work. Until 1978, the Copyright Office had doubts about whether computer programs constituted "works of authorship"; therefore, it had doubts about whether computer programs constituted copyrightable works. Because human readable source code is necessary for an examiner to determine whether a program embodied in object code is an original work of authorship, the Office currently registers object code programs under the "rule of doubt" unless the application is accompanied by the equivalent source code. *See also "Rule of Doubt" Procedure Itself Put in Doubt in Correspondence with the Copyright Office*, SOFTWARE PROTECTION, May 1983, at 2-7.

8. 17 U.S.C. § 117 (1982); H.R. REP. No. 1476, 94th Cong., 2d Sess. 54 (1976).

and (3) are fixed in a tangible medium of expression.[9]

a. Copyrightable Subject Matter

In order to be copyrightable subject matter, a work must be a work of authorship. During the 1960's and early 1970's, the Copyright Office expressed doubt as to whether computer programs were works of authorship.[10] However, Congress clearly expressed its intent that computer programs be considered works of authorship in the Copyright Act of 1976,[11] and recent cases confirm the copyrightability of computer programs.[12] A computer program is considered a literary work of authorship[13] to which copyright protection attaches.[14] Only the *expression* of ideas in a work constitutes copyrightable subject matter. Copyright does not protect actual ideas, procedures, processes, systems, methods of operation, concepts, principles, discoveries, or utilitarian aspects of a work;[15] it only protects the specific manner in which they are expressed. For this reason copyright does not protect the algorithms or logic in a computer program.[16] The utilitarian aspect of object code was at one time suggested as a reason for not extending copyright protection to object code, but this reasoning was ultimately rejected.[17]

b. Originality

Although copyright protection attaches to works originally created by the author, originality does not require a work to be different from

9. 17 U.S.C. § 102 (1982).

10. *See supra* note 7.

11. *See* authotities cited *supra* note 8.

12. Williams Elecs., Inc. v. Artic Int'l, Inc., 685 F.2d 870 (3d Cir. 1982); Tandy Corp. v. Personal Micro Computers, 524 F. Supp. 171 (N.D. Cal. 1981).

13. H.R. REP. No. 1476, 94th Cong., 2d Sess. 54 (1976); *see* Apple Computer, Inc. v. Formula Int'l, Inc., 562 F. Supp. 775 (C.D. Cal. 1983); Tandy Corp. v. Personal Micro Computers, 524 F. Supp. 171 (N.D. Cal. 1981).

14. 17 U.S.C. § 102 (1982).

15. *Id.* § 102(b); *see* Mazer v. Stein, 347 U.S. 201 (1954); Midway Mfg. Co. V. Dirkschneider, 543 F. Supp. 466, 480 (D. Neb. 1981).

16. H.R. REP. No. 1476, 94th Cong., 2d Sess. 56-57 (1976); Keplinger, *Computer Software—Its Nature and Its Protection*, 30 EMORY L.J. 483, 506 (1981).

17. Hubco Data Prods. v. Management Assistance, Inc., No. 81-1295, 1983 COPYRIGHT L. DEC. ¶ 25,529 (D. Idaho 1983); Apple Computer, Inc. v. Franklin Computer Corp., 545 F. Supp. 812 (E.D. Pa. 1982), *rev'd & remanded*, 714 F.2d 1240 (3d Cir. 1983), *cert. dismissed*, 104 S. Ct. 690 (1984) (appellate decision impliedly rejects lower court holding); Data Cash Sys. v. JS&A Group, Inc., 480 F. Supp. 1063 (N.D. Ill. 1979), *aff'd on other grounds*, 628 F.2d 1038 (7th Cir. 1980).

A work has utilitarian aspects when it serves some function other than communication of expressions of ideas to human beings. A computer program can have both a utilitarian function and a communication function. The source code can cause a computer to perform a particular task, and it can also communicate ideas to humans about how to make a computer perform a task. The object code can only perform the utilitarian function; it cannot communicate to human beings without the aid of some device which converts magnetic or electrical impulses into symbols. Thus, it was argued that copyright protection should

previously existing works. Originality only requires the author to create the work independently, without copying from another work. If the independently created work expresses an idea which can be expressed in several ways, the originality requirement for copyright protection is satisfied even though another previous work used the exact same words or symbols to express the exact same idea.[18]

c. Fixation

To be eligible for copyright protection, a work must be "fixed in any tangible medium of expression, now known or later developed, from which [it] can be perceived, reproduced, or otherwise communicated, either directly or with the aid of a machine or device."[19] A work is "fixed" "when its embodiment in a copy . . . is sufficiently permanent or stable to permit it to be perceived, reproduced, or otherwise communicated for a period of more than transitory duration."[20] There has been much dispute over whether computer programs stored in ROMS, RAMs, PROMs and EPROMs[21] are sufficiently fixed to be protected by copyright. The legislative history indicates that the form, manner and medium of fixation should make no difference to the sufficiency of fixation.[22] This view has been accepted by the courts in granting protection to programs stored in silicon chips.[23]

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not extend to object code. Despite the rejection of this argument and the extension of copyright protection to object code, however, programmers often register their object code for copyright protection while keeping their source code secret; they are still afraid that full copyright protecion will not be extended to object code and that trade secret protection for the source code will be needed as a backup for insufficient copyright protection. *See infra* text accompanying notes 200-08.

18. Hubco Data Prods. v. Management Assistance, Inc., No. 81-1295, 1983 COPYRIGHT L. DEC. ¶ 25,529 (D. Idaho 1983); Apple Computer, Inc. v. Franklin Computer Corp., 545 F. Supp. 812, 820 (E.D. Pa. 1982), *rev'd on other grounds*, 714 F.2d 1240 (3d Cir. 1983), *cert. dismissed*, 104 S. Ct. 690 (1984); Synercom Technology, Inc. v. University Computing Co., 462 F. Supp. 1003 (N.D. Tex. 1978).

19. 17 U.S.C. § 102(a) (1982).

20. *Id.* § 101.

21. ROMs (Read Only Memory) are silicon chips on which information is microscopically encoded by means of burned and unburned spots on the silicon wafer. The information does not disappear when the power is turned off as it does in RAMs (Random Access Memory) and cannot be written over as occurs in EPROMs (Erasable Programmable Read Only Memory). The information on these chips can be read only with the aid of a computer, however.

22. H.R. REP. No. 1476, 94th Cong., 2d Sess. 52 (1976).

23. Apple Computer, Inc. v. Franklin Computer Corp., 714 F.2d 1240 (3d Cir. 1983), *cert. dismissed*, 104 S. Ct. 690 (1984); Williams Elecs., Inc. v. Artic Int'l, Inc., 685 F.2d 870 (3d Cir. 1982); Apple Computer, Inc. v. Formula Int'l, Inc., 562 F. Supp. 775 (C.D. Cal. 1983); Tandy Corp. v. Personal Micro Computers, 524 F. Supp. 171 (N.D. Cal. 1981); Midway Mfg. Co. v. Dirkschneider, 543 F. Supp. 466 (D. Neb. 1981); Stern Elecs., Inc. v. Kaufman, 523 F. Supp. 635 (E.D.N.Y. 1981), *aff'd*, 669 F.2d 852 (2d Cir. 1982).

Similarly, the sufficiency of fixation of video game images in printed circuit boards which may never display the same sequence or combination of images twice has also been resolved

3. Scope and Extent of Copyright Protection

a. Exclusive Rights Granted; Scope of Same

Subject to the limitations discussed in the following subsection of this paper, the owner of a copyright enjoys the exclusive right:

(1) to reproduce the copyrighted work in copies . . .;

(2) to prepare derivative works based upon the copyrighted work;

(3) to distribute copies . . . of the copyrighted work to the public by sale or other transfer of ownership, or by rental, lease, or lending;

(4) in the case of literary . . . and . . . audiovisual works, to perform the copyrighted work publicly; and

(5) in the case of literary . . . and . . . audiovisual works, to display the copyrighted work publicly.[24]

i. Copies

The Copyright Act of 1976 defines *copies* as "material objects . . . in which a work is fixed by any method now known or later developed, and from which the work can be perceived, reproduced, or otherwise communicated, either directly or with the aid of a machine or device."[25] Cases decided under the 1907 Act had held that a copy must be readable by human beings.[26] More recent decisions from this period and later decisions based on the Copyright Act of 1976, however, have correctly held that a reproduction of a computer program need not be human eye readable to meet the definition of a copy.[27] While a reproduction of a

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in favor of granting protection. Williams Elecs., Inc. v. Artic Int'l, Inc., 685 F.2d 870 (3d Cir. 1982); Midway Mfg. Co. v. Artic Int'l, Inc., 547 F. Supp. 999 (N.D. Ill. 1982), *aff'd*, 704 F.2d 1009 (7th Cir.), *cert. denied*, 104 S. Ct. 90 (1983); Midway Mfg. Co. v. Dirkschneider, 543 F. Supp. 466 (D. Neb. 1981). The courts reason that a definite number of images are fixed in the memory of the printed circuit boards and only the specific combinations of these images change. Since the images are always the same and only the combinations change, the images are sufficiently fixed to be perceived, reproduced, or otherwise communicated for a period of more than transitory duration.

24. 17 U.S.C. § 106 (1982).

25. *Id.* § 101.

26. White-Smith Music Publishing Co. v. Apollo Co., 209 U.S. 1 (1908).

27. Apple Computer, Inc. v. Franklin Computer Corp., 714 F.2d 1240 (3d Cir. 1983), *cert. dismissed*, 104 S. Ct. 690 (1984); Williams Elecs., Inc. v. Artic Int'l, Inc., 685 F.2d 870 (3d Cir. 1982); Apple Computer, Inc. v. Formula Int'l, Inc., 562 F. Supp. 775 (C.D. Cal. 1983); Hubco Data Prods. v. Management Assistance, Inc., No. 81-1295, 1983 COPYRIGHT L. DEC. ¶ 25,529 (D. Idaho 1983); GCA Corp. v. Chance, 217 U.S.P.Q. 718 (N.D. Cal. Aug. 31, 1982); Midway Mfg. Co. v. Artic Int'l, Inc., 547 F. Supp. 999 (N.D. Ill. 1982), *aff'd*, 704 F.2d 1009 (7th Cir.), *cert. denied*, 104 S. Ct. 90 (1983); Tandy Corp. v. Personal Micro Computers, 524 F. Supp. 171 (N.D. Cal. 1981); *see also* Boorstyn, *Copyright, Computers, and Confusion*, 63 J. Pat. Off. Soc'y 276, 277 (1981).

One of the first cases which dealt with the definition of a copy of a computer program,

computer program does not have to be human eye readable in order to constitute a copy, it does have to be sufficiently fixed in a tangible medium to permit it to be perceived, reproduced or otherwise communicated either directly or with the aid of a machine or device. ROMs, PROMs, EPROMs, diskettes, and printed circuit boards containing object code would be copies of computer programs under this criterion.[28]

ii. Derivative works

A *derivative work* is defined as "a work based upon one or more preexisting works, such as a translation . . . or any other form in which a work may be recast, transformed, or adapted."[29] The mere taking of ideas from a program, however, does not constitute the preparation of a derivative work because copyright protects only expressions and not ideas.[30] But when a programmer incorporates the *expression* of ideas, as opposed to the ideas themselves, from another program into his program, he has created a derivative work.[31] Thus, courts have held that the translation of a program from one computer language to another (*i.e.*, FORTRAN to BASIC)[32] and the use of a printed circuit board designed to

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Data Cash Sys. v. JS&A Group, Inc., 480 F. Supp. 1063 (N.D. Ill. 1979), *aff'd on other grounds*, 628 F.2d 1038 (7th Cir. 1980), followed the human eye readability test of White-Smith Music Publishing Co. v. Apollo Co., 209 U.S. 1 (1908), and the 1907 Act. The court felt that the original section 117 of the 1976 Act required it to apply the copyright law as it existed prior to the 1976 Act to all aspects of a case involving the copyright of a computer program. The court, however, was incorrect in its assumption that section 117 required it to apply pre-1978 law to determine whether or not a copy had to be human readable. As section 117 itself and its legislative history made clear, section 117 did not apply to section 101 which defines a copy. Section 117 only limited sections 106 through 116 and 118 which cover the scope of copyright protection. *See* 17 U.S.C. § 117 (1982); H.R. REP. No. 1476, 94th Cong., 2d Sess. 116 (1976). Therefore, the court should have applied section 101 to determine whether the ROM was a copy of the program and then applied pre-1978 law to determine the extent of copyright protection for the copyrighted program.

28. Apple Computer, Inc. v. Franklin Computer Corp., 714 F.2d 1240 (3d Cir. 1983), *cert. dismissed*, 104 S. Ct. 690 (1984); Midway Mfg. Co. v. Artic Int'l, Inc., 704 F.2d 1009 (7th Cir.), *cert. denied*, 104 S. Ct. 90 (1983); Williams Elecs., Inc. v. Artic Int'l, Inc., 685 F.2d 870 (3d Cir. 1982); Atari, Inc. v. North Am. Philips Consumer Elecs. Corp., 672 F.2d 607 (7th Cir.), *cert. denied*, 459 U.S. 880 (1982); Apple Computer, Inc. v. Formula Int'l, Inc., 562 F. Supp. 775 (C.D. Cal. 1983); GCA Corp. v. Chance, 217 U.S.P.Q. 718 (N.D. Cal. Aug. 31, 1982).

29. 17 U.S.C. § 101 (1982).

30. *Id.* § 102(b). This principle was explicitly stated by the court in Atari, Inc. v. Amusement World, Inc., 547 F. Supp. 222 (D. Md. 1981). "It seems clear that defendants based their game on plaintiff's copyrighted game; to put it bluntly, defendants took plaintiff's idea. However, the copyright laws do not prohibit this." *Id.* at 230. *See also* Atari, Inc. v. Williams, 217 U.S.P.Q. 746, 747 (E.D. Cal. 1981); *In re* Coin-Operated Audio-Visual Games & Components Thereof, Investigation No. 337-TA-87 (U.S. Int'l Trade Comm'n Publication No. 1160 June 25, 1981).

31. 17 U.S.C. § 101 (1982).

32. Synercom Technology, Inc. v. University Computing Co., 462 F. Supp. 1003, 1013 n.5 (N.D. Tex. 1978) (*dictum*).

speed up a particular video game[33] infringe the copyright owner's exclusive right to prepare derivative works. It is probable that the incorporation of whole subroutines from one program into a new program would also be found to infringe this right.[34] It has also been suggested that the compilation of a program from source code into object code might constitute the preparation of a derivative work,[35] but this suggestion is probably incorrect since the compilation into object code is done by a computer and requires none of the creativity or originality necessary for a derivative work.[36] On the other hand, it could be argued that the creativity required to write the compiler program is sufficient to make the object code produced by the compiler a derivative work. Courts, however, apparently intend to treat object code as a copy and not as a derivative work.[37] This issue is probably moot since the conversion of source code to object code is a noninfringing use under the Computer Software Copyright Act of 1980 which allows the making of an adaptation provided the "adaptation is created as an essential step in the utilization of the computer program in conjunction with a machine."[38] However, section 117 may not authorize every conversion of source code to object code; section 117 only authorizes conversion for personal use.[39]

iii. Performance or Display

Most software packages produce some sort of visual display on a CRT screen. Anytime the display or a copy of the display is shown publicly, the copyright owner's exclusive right to display his work is potentially applicable.[40] A display is shown publicly when it is shown to a substantial number of persons outside of a normal circle of the family and its social acquaintances.[41]

Many software packages produce a combination of text, graphics, and sound which meets the definition of an audiovisual work.[42] Anytime the

33. Midway Mfg. Co. v. Artic Int'l, Inc., 704 F.2d 1009, 1013 (7th Cir.), *cert. denied*, 104 S. Ct. 90 (1983). The design and distribution of such a board is contributory infringement.

34. Freedman v. Select Information Sys., No. C82-6448-WAI, 1983 COPYRIGHT L. DEC. ¶ 25,520 (N.D. Cal. 1983). A subroutine is a part of a program analogous to a chapter of a book. It can be written once and used several times by the master program.

35. Apple Computer, Inc. v. Franklin Computer Corp., 545 F. Supp. 812, 822 (E.D. Pa. 1982), *rev'd on other grounds*, 714 F.2d 1240 (3d Cir. 1983), *cert. dismissed*, 104 S. Ct. 690 (1984).

36. *See* Stern, *Another Look at Copyright Protection of Software: Did the 1980 Act Do Anything for Object Code?*, 3 COMPUTER L.J. 1, 14 (1981).

37. GCA Corp. v. Chance, 217 U.S.P.Q. 718 (N.D. Cal. 1982).

38. 17 U.S.C. § 117 (1982).

39. For further discussion of what constitutes personal use, see *infra* text accompanying note 57.

40. 17 U.S.C. §§ 101, 106 (1982).

41. *Id.* § 101.

42. *Audiovisual works* are defined as

works that consist of a series of related images which are intrinsically intended

visual display or sound generated by the software is shown or played to the public, either the copyright owner's exclusive right to display his work or his exclusive right to perform his work is potentially applicable.[43] These situations usually arise in classroom or user group settings where people gather to exchange information about software.

b. Statutory Limitations upon Exclusive Rights

The Copyright Act places limitations on the exclusive rights of the copyright owner in sections 107 through 118. Not all of these limitations are applicable to computer programs. Sections 107 (on fair use), 108 (on reproductions by libraries and archives), 109 (on the transfer of a particular copy), 110 (on performances and displays), and 117 (on computer programs) have the potential to limit the exclusive rights of an owner of copyright in a computer program.

The doctrine of fair use is judicially well established, but it is so flexible that it virtually defies definition.[44] Section 107 of the 1976 Act gave the doctrine express statutory recognition for the first time:

> Notwithstanding the provisions of section 106, the fair use of a copyrighted work, including such use by reproduction in copies or phonorecords or by any other means specified by that section, for purposes such as criticism, comment, news reporting, teaching (including multiple copies for classroom use), scholarship, or research, is not an infringement of copyright. In determining whether the use made of a work in any particular case is a fair use the factors to be considered shall include—
>
> (1) the purpose and character of the use, including whether such use is of a commercial nature or is for nonprofit educational purposes;
>
> (2) the nature of the copyrighted work;
>
> (3) the amount and substantiality of the portion used in relation to the copyrighted work as a whole; and
>
> (4) the effect of the use upon the potential market for or value of the copyrighted work.
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> The factors listed in this section are illustrative, and no single factor

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to be shown by the use of machines, or devices such as projectors, viewers, or electronic equipment, together with accompanying sounds, if any, regardless of the nature of the material objects, such as films or tapes, in which the works are embodied.

Id.

43. *Id.* §§ 101, 106.

44. H.R. REP. No. 1476, 94th Cong., 2d Sess. 65 (1976).

is controlling.[45] The doctrine of fair use is probably the most comprehensive limitation on the exclusive rights of a copyright owner; it applies to all types of copyrighted works and all rights encompassed in copyright, including copying and distribution.[46] Although no cases have as yet applied the doctrine to computer programs, it is potentially applicable to such works. The doctrine of fair use might permit such actions as the making of additional copies of a program used in a classroom setting after the company which owns the copyright has gone out of business, if the current copyright owner is unknown and unreachable and the program is no longer commercially available. As long as the copyright owner can be reached through reasonable efforts, however, it is unlikely that fair use would sanction the copying of an entire program without obtaining prior consent. The situations in which fair use would permit the copying of programs seem to be determined primarily by reference to the needs of the user and the goal of securing enough compensation to the author to encourage him to continue to produce programs, the basis of all copyright.[47]

Sections 108 through 118 of the Copyright Act give examples of uses which have been legislatively declared to be fair and legal uses of copyrighted works. Section 108 describes several situtations in which a library or archives which is open to the public or to researchers in its specialized field may reproduce part or all of a copyrighted work. Several categories of works are excluded from the coverage of section 108, but neither computer programs nor literary works are included in this list. Therefore, the section is potentially applicable to the reproduction of computer programs by libraries. Under section 108, a library would not be entitled to reproduce extra copies of a program for use by multiple machines in the library in order to avoid purchasing multiple copies; such copying would not be "without any purpose of direct or indirect commercial advantage."[48] What a library can copy depends upon (1) whether the program is published or unpublished, (2) the availability of an unused copy at a fair price, (3) whether or not the copy was requested by a user or another library, and (4) how much of the program is to be copied.

Under subsection 108(b), a library may make a copy of an entire unpublished work in facsimile form solely for purposes of preservation, security, or deposit for research in another research library. Although the House of Representatives Report No. 1476 suggests that machine readable

45. N. BOORSTYN, COPYRIGHT LAW § 5:2 (1981).

46. *Id.*

47. Twentieth Century Music Corp. v. Aiken, 422 U.S. 151, 156 (1975); Goldstein v. California, 412 U.S. 546, 555 (1973).

48. 17 U.S.C. § 108(a)(1) (1982); H.R. REP. No. 1476, 94th Cong., 2d Sess. 75 (1976).

copies do not meet the requirement of facsimile form,[49] this is probably not true in the case of works which a library owns only in machine readable form. A facsimile means an exact copy. If the original copy is in machine readable form, a copy made in machine readable form is an exact copy and a facsimile. Furthermore, the statement in House Report No. 1476 only says that machine readable form is not a facsimile when the original is a manuscript. The context in which "manuscript" is used in House Report No. 1476 indicates that the term was used to refer to a handwritten, typewritten, or printed copy which could be perceived by a human being without the aid of a machine. Therefore, the statement in House Report No. 1476 should be inapplicable to machine readable computer programs,[50] and a qualified library should be able to make a copy of an unpublished computer program solely for archival purposes. The same result could be achieved under the archival provisions of subsection 117(1), except that subsection 108(b) would permit the library making the copy to give it to another research library, while section 117 would not permit this. Section 117 probably does not limit section 108 because the purposes behind the sections are different and neither purpose hinders the other. The archival provisions of section 117 are intended to mitigate the problems caused by the fragility of the medium in which computer programs are stored. The archival provisions of section 108 are intended to ensure that copies of works remain in collections accessible to the public even when copies are not commercially available. Because the fragility of the medium affects libraries as well as other owners, the provisions of section 117 are needed to ensure that reproducible copies remain in a library's collections when the circumstances covered by section 108 occur.

Under subsection 108(c), a library could copy a published computer program to replace a damaged, lost or stolen computer program if the library or archives cannot obtain an unused copy at a fair price. This subsection is probably of little use to libraries because it does not allow the reproduction of the published program before it is lost or destroyed and does not allow reproducton of the program after the library's copy is lost or destroyed if an unused copy is available at a reasonable price. In contrast, section 117 allows any owner of a computer program, including a library, to make a backup copy before the damage or loss occurs and regardless of the availability of unused copies at a fair price. The one situation where subsection 108(c) would probably be used is where a library makes a copy for another library whose copy is lost or damaged.

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49. *Id.* at 75.

50. This logic would not apply to an eye readable form of the source code for the program; a machine readable version of such an eye readable copy would not be an exact copy or a facsimile. Any copy of the eye readable copy which was itself eye readable (which probably would not also be machine readable), however, would be a facsimile, and therefore permissible if the other requirements of the section are met.

The library whose copy is lost, damaged or stolen is protected by section 117 because section 117 entitles an owner to a backup copy to prevent total loss of the program if the original copy is lost or destroyed. The library which makes the copy needs the protection of subsection 108(c) because section 117 only protects owners copying for their own archival purpose; it does not permit the copier to give the copy to another person even if the other person is a library. Subsection 108(c) is also limited to facsimile copies, but as explained above, a machine readable copy of a machine readable original should meet the requirement of facsimile form.

If a user or another library through interlibrary loan requests a copy of a computer program, a library could copy a small portion of the program[51] or an entire program if it is out of print and unavailable at a fair price.[52] The copy must become the property of the user who requested it.

The express authorizations of section 108 do not prohibit a library from making any other copies of a computer program which would be a fair use of it.[53] Nevertheless, if the contract under which the library acquired a copy prohibits all copying, section 108 does not justify the violation of such a contract.[54]

Section 109 is a limitation upon the copyright owner's exclusive right to distribute. It allows anyone who owns a copy of a program which was lawfully made under the copyright laws to transfer ownership of the copy without permission from the copyright owner. Section 109 applies only to an owner—it does not apply to the possessor of a leased program. The right to transfer is further limited by section 117, which declares that copies made under that section can only be transferred with the original from which the copies were made. Adaptations made under section 117 can only be transferred with the approval of the copyright owner.

Section 110 contains a number of limitations upon the copyright owner's exclusive right to display or perform the copyrighted work. The first four subsections of section 110 permit certain educational, religious, or nonprofit displays and performances. These subsections probably protect most schools and user groups which display or perform software while attempting to share information about the software. These subsections, however, apply only to nonprofit groups and would not protect commercial computer schools.[55] Subsection 110(7) protects commercial establishments which display or perform copyrighted works in a store open to the public for the sole purpose of promoting retail sales. The perfor-

51. 17 U.S.C. § 108(d) (1982).
52. *Id.* § 108(e).
53. *Id.* § 108(f)(4).
54. *Id.*
55. *See* H.R. REP. No. 1476, 94th Cong., 2d Sess. 82 (1976).

mance must be within the immediate area where the sale is occurring, and no direct or indirect admission charges are permitted. While this subsection would protect vendors from liability for free demonstrations in the store, it would not protect them from liability for displays and performances which occur in store sponsored classes where admission is charged. As a practical matter, however, the exposure to liability is very small since such classes usually increase sales and are readily agreed to by the copyright owner.

Section 117 is the only section of the Copyright Act which deals specifically with computer programs. It gives an owner (not a mere possessor) of a copy of a computer program the right to make copies for archival or adaptation purposes. House of Representatives Report No. 1307 which covers the Computer Software Copyright Act of 1980 says that the new section 117 embodies the recommendations of the National Commission on New Technological Uses of Copyrighted Works (CONTU) with respect to computer software.[56] The CONTU report recommends that allowable adaptations should include the right to translate a program from one language to another and the right to add features to programs that were not present at the time of rightful acquisition.[57] Thus, section 117 directly restricts the copyright owner's exclusive right to make derivative works when the copyrighted work is a computer program.

While a rightful owner of a copy of a computer program has the right to make such copies and adaptations, he has little or no right to distribute the copies or adaptations. Normally, the copies or adaptations may be made only for personal use. Exact copies, however, may be transferred with the original copy when it is sold, leased or otherwise transferred, but adaptations can be transferred only when the copyright owner gives his authorization.

4. Enforcement of Rights

The burden of proving an infringement case is often difficult and expensive; in fact, the problems and costs associated with a suit to enforce the rights granted by the Copyright Act with respect to computer programs raise serious questions as to the value and adequacy of copyright protection. The difficulty and expense of proving infringement suits restrict their availability to a small minority of plaintiffs in a very small percentage of the cases of pirating which occur. To make out an infringement case, the plaintiff must prove (1) that he has a valid copyright and (2) that the defendant has violated one of his exclusive rights.[58]

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56. H.R. REP. No. 1307, 96th Cong., 2d Sess. 23-24 (1980).

57. NAT'L COMM'N ON NEW TECHNOLOGICAL USES OF COPYRIGHTED WORKS, FINAL REPORT (1978) [hereinafter cited as CONTU REPORT].

58. Midway Mfg. Co. v. Bandai-America, Inc., 546 F. Supp. 125, 138 (D.N.J. 1982);

While the plaintiff must establish that he owns a valid copyright for his program, the certificate of registration gives rise to a presumption both as to the validity and the ownership of the copyright,[59] but, this presumption is rebuttable. Upon the production of evidence by the defendant that the plaintiff's work was itself copied from a preexisting work, the burden of going forward has been met and the burden shifts back to the plaintiff to prove the validity of his copyright.[60] The judge may find that the presumption created by the certificate of registration has been conclusively rebutted only if the defendant's evidence is sufficient to find as a matter of law that the plaintiff's program was copied from a preexisting work.[61]

Even if the plaintiff in an infringement suit proves that he owns a valid copyright, however, he must still prove that the defendant has violated one of the plaintiff's exclusive rights under the copyright laws. Plaintiffs usually try to establish this by attempting to prove copying by the defendant, but copying can be very difficult to prove.

Copying by either the defendant or the plaintiff can rarely be proved by direct evidence.[62] Copying is usually inferred from a showing that the alleged copier had access to the plaintiff's (or some other preexisting) work and that the works are substantially similar.[63] Access may be proved either by the technical similarity between the two programs,[64] or by a showing of wide dissemination and availability of the plaintiff's (or other preexisting) program.[65] Substantial similarity is determined from the layman's point of view and exists if an "ordinary observer, unless he set out to detect the disparities, would be disposed to overlook them, and regard their asthetic appeal as the same."[66] Although exact copying is not required to establish substantial similarity, something more than the mere

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In re Coin-Operated Audio-Visual Games & Components Thereof, Investigation No. 337-TA-87 (U.S. Int'l Trade Comm'n Publication No. 1160 June 25, 1981).

59. Midway Mfg. Co. v. Bandai-America, Inc., 546 F. Supp. 125, 139 (D.N.J. 1982); *In re* Coin-Operated Audio-Visual Games & Components Thereof, Investigation No. 337-TA-87 (U.S. Int'l Trade Comm'n Publication No. 1160 June 25, 1981).

60. Midway Mfg. Co. v. Bandai-America, Inc., 546 F. Supp. 125, 139-40 (D.N.J. 1982).

61. *Id.* at 140.

62. Atari, Inc. v. Amusement World, Inc., 547 F. Supp. 222, 227 (D. Md. 1981); Midway Mfg. Co. v. Dirkschneider, 543 F. Supp. 466, 482 (D. Neb. 1981).

63. Midway Mfg. Co. v. Bandai-America, Inc., 546 F. Supp. 125, 138 (D.N.J. 1982); Atari, Inc. v. Amusement World, Inc., 547 F. Supp. 222, 227 (D. Md. 1981); Midway Mfg. Co. v. Dirkschneider, 543 F. Supp. 466, 482 (D. Neb. 1981).

64. Midway Mfg. Co. v. Bandai-America, Inc., 546 F. Supp. 125, 138 (D.N.J. 1982); Midway Mfg. Co. v. Dirkschneider, 543 F. Supp. 466, 482 (D. Neb. 1981).

65. Atari, Inc. v. Amusement World, Inc., 547 F. Supp. 222, 227 (D. Md. 1981).

66. *Id.* (quoting Sid & Marty Krofft Television v. McDonald's Corp., 562 F.2d 1157, 1167 (9th Cir. 1977) (quoting Peter Pan Fabrics, Inc. v. Martin Weiner Corp., 274 F.2d 487, 489 (2d Cir. 1960))).

taking of the idea from another program is required.[67] Substantial similarity is not destroyed merely by changing the medium.[68]

Most of the cases dealing with substantial similarity and computers are video game cases which focus on the size, shape, color, and movement of the figures on the screen and the "feel" of the game play.[69] Cases dealing with other types of computer programs tend to depend upon admissions of copying by the defendant,[70] inadept copying which left telltale identifying marks (such as the plaintiff's name embedded in the code),[71] or line for line identical code in the two works.[72]

B. *Trade Secret Protection for Software*

1. *Introduction*

Trade secret law, unlike copyright and patent law, is governed exclusively by state law. The large number of different jurisdictions and the struggles of each to expand its law to meet the needs created by new technology have resulted in the common law of trade secrets which is based on the combined theories of unfair competition, property, contract, quasi-contract, and breach of confidence.[73] A number of states have codified at least the criminal aspects of trade secret law.[74] Since the com-

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67. Atari, Inc. v. Amusement World, Inc., 547 F. Supp. 222, 228 (D. Md. 1981); 3 M. NIMMER, A TREATISE ON THE LAW OF LITERARY, MUSICAL AND ARTISTIC PROPERTY, AND THE PROTECTION OF IDEAS § 13.01(B) (1983).

68. Atari, Inc. v. North Am. Philips Consumer Elecs. Corp., 672 F.2d. 607, 618 n.12 (7th Cir.), *cert. denied*, 459 U.S. 880 (1982); Midway Mfg. Co. v. Bandai-America, Inc., 546 F. Supp. 125, 139 (D.N.J. 1982).

69. Midway Mfg. Co. v. Bandai-America, Inc., 546 F. Supp. 125 (D.N.J. 1982); Midway Mfg. Co. v. Artic Int'l, Inc., 547 F. Supp. 999 (N.D. Ill. 1982), *aff'd*, 704 F.2d 1009 (7th Cir.), *cert. denied*, 104 S. Ct. 90 (1983); Atari, Inc. v. Amusement World, Inc., 547 F. Supp. 222 (D. Md. 1981); Midway Mfg. Co. v. Dirkschneider, 543 F. Supp. 466 (D. Neb. 1981); Atari, Inc. v. North Am. Philips Consumer Elecs. Corp., 217 U.S.P.Q. 1265 (N.D. Ill. 1981), *rev'd*, 672 F.2d 607 (7th Cir.), *cert. denied*, 459 U.S. 880 (1982); Atari, Inc. v. Williams, 217 U.S.P.Q. 746 (E.D. Cal. 1981); Atari, Inc. v. Armenia Ltd., 1981 COPYRIGHT L. DEC. ¶ 25,328 (N.D. Ill. 1981).

70. Apple Computer, Inc. v. Formula Int'l, Inc., 562 F. Supp. 775 (C.D. Cal. 1983).

71. BPI Sys., v. Leith, 532 F. Supp. 208 (W.D. Tex. 1981).

72. J & K Computer Sys. v. Parrish, 642 P.2d 732 (Utah 1982).

73. Bender, *Trade Secret Software Protection*, 5 APLA Q.J. 49, 52 (1977).

74. ARK. STAT. ANN. § 41-2207 (1977); CAL. PENAL CODE § 499c (West Supp. 1984); COLO. REV. STAT. § 18-4-408 (1978); ILL. ANN. STAT. ch. 38, §§ 15-1 to 15-9, 16-1 (Smith-Hurd 1977 & Supp. 1983-1984); IND. CODE ANN. §§ 35-43-4-1, 35-43-4-2 (Burns Supp. 1983); ME. REV. STAT. ANN. tit. 17-A, §§ 352-353, 362 (1983); MASS. ANN. LAWS ch. 266, § 30(4) (Michiel Law. Co-op. Supp. 1984); MICH. COMP. LAWS ANN. §§ 752.771-773 (West Supp. 1983-1984); MINN. STAT. ANN. § 609.52 (West Supp. 1984); N.H. REV. STAT. ANN. §§ 637.2-.3 (1974); N.J. STAT. ANN. §§ 2C:20-1-:20-3 (West Supp. 1982); N.Y. PENAL LAW §§ 155.00, .30, 165.07 (McKinney 1975 & Supp. 1983-1984); OHIO REV. CODE ANN. §§ 1333.51 (Page 1979); OKLA. STAT. ANN. tit. 21, § 1732 (West 1983); WIS. STAT. ANN. § 943.205 (West 1982).

mon law and the state statutes are usually in agreement upon the basics of trade secret law, the discussion in this comment will be confined to the general common law of trade secrets. However, the reader should be aware that portions of the following discussion may not apply in some jurisdictions.

2. Definition and Elements of a Trade Secret

Trade secret law clearly protects computer programs.[75] This protection extends to the computer program itself, to any documentation concerning the program, and to formulas and algorithms incorportated into the program, if they fit within the definition of a trade secret.[76] The first *Restatement of Torts* defined a *trade secret* as

> any formula, pattern, device, or compilation of information which is used in one's business, and which gives him an opportunity to obtain an advantage over competitors who do not know or use it. . . . It differs from other secret information in a business . . . in that it is not simply information as to a single or ephemeral events in the conduct of the business . . . . A trade secret is a process or device for continuous use in the operation of the business.[77]

The cases generally require three elements for the existence of a trade secret: (1) the information must not be generally known or readily ascertainable; (2) it must be of value to the holder; and (3) the holder must intend to keep it secret and must have acted in a manner reasonably calculated to keep it secret.[78]

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75. Unlike copyright protection, trade secret protection has been recognized since the infancy of the computer programming industry. University Computing Co. v. Lykes-Youngstown Corp., 504 F.2d 518, 534-35 (5th Cir. 1974); Hancock v. Decker, 379 F.2d 552 (5th Cir. 1967); Telex Corp. v. IBM Corp., 367 F. Supp. 258, 357-61 (N.D. Okla. 1973), *aff'd*, 510 F.2d 894 (10th Cir.), *cert. dismissed*, 423 U.S. 802 (1975) (affirming trade secret aspects); Com-Share, Inc. v. Computer Complex, Inc., 338 F. Supp. 1229, 1239-40 (E.D. Mich. 1971), *aff'd*, 458 F.2d 1341 (6th Cir. 1972); Cértek Computer Prods. v. Whitfield, 203 U.S.P.Q. 1020, 1022 (Cal. Super. Ct. 1977); Ward v. Superior Court, 3 COMPUTER L. SERV. REP. 206 (Cal. Super. Ct. 1972); Amoco Prod. Co. v. Lindley, 609 P.2d 733, 743 (Okla. 1980).

76. *In re* Belth v. Insurance Dep't, 95 Misc. 2d 18, 20, 406 N.Y. S.2d 649, 650 (Sup. Ct. 1977); *see also* Smith & Yoches, *Legal Protection of Software Via Trade Secrets*, 8 APLA Q.J. 240, 240-41 (1980). Note that trade secret law, unlike copyright and patent law, does not automatically exclude ideas and algorithms from protection.

77. RESTATEMENT OF TORTS § 757, comment b (1939). The reporters of the *Restatement Second of Torts* omitted the sections on trade secrets because they felt that the subject fell outside of traditional tort law and had been embraced in the law of unfair competition and trade regulation.

78. *E.g.*, Jostens, Inc. v. National Computer Sys., 318 N.W.2d 691, 698 (Minn. 1982); M. Bryce & Assocs. v. Gladstone, 107 Wis. 2d 241, 249-51, 319 N.W.2d 907, 911 (Ct. App. 1982); *see also* Gilburne & Johnston, *Trade Secret Protection for Software Generally and in the Mass Market*, 3 COMPUTER L.J. 211, 215 (1982).

a. The "Novelty" Requirement

The requirement that the information not be generally known or readily ascertainable is often loosely referred to as the novelty requirement. The term novelty is a misnomer since the information need not be new or even a significant advance over prior knowledge in the industry.[79] "All that is required is that the information or knowledge represent in some considerable degree the independent efforts of its claimant."[80] Furthermore, the trade secret requirement of novelty should not be confused with the patent requirement of novelty. The patent requirement of novelty serves a different purpose and is much more difficult to satisfy.[81] Trade secret novelty refers to the degree to which the information is known in the industry in general and is merely intended to insure that the information is capable of being kept secret. Although matters of general knowledge in the industry are not protected by trade secret law,[82] particular combinations of generally known concepts may be protected.[83] Most computer programs fall under the particular combination theory because although similiar programs may use the same algorithms and logic, they combine the algorithms and logic differently to produce programs of different speed, accuracy, cost and commercial feasibility. The combination which produces the best speed, accuracy or commercial feasibility is sufficiently outside the general knowledge of the industry to be protectable.[84] When software is protected as a particular combination of generally known concepts, however, only the combination and not the underlying concepts are protected.[85]

The mere fact that the information sought to be protected is not yet general knowledge, however, is not quite enough for trade secret status; the secret also must not be readily ascertainable through proper means.[86]

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79. Greenberg v. Croydon Plastics Co., 378 F. Supp. 806, 812 (E.D. Pa. 1974).

80. Smith v. Dravo Corp., 203 F.2d 369, 373 (7th Cir. 1953).

81. Electro-Craft Corp. v. Controlled Motion, Inc., 332 N.W.2d 890, 899 (Minn. 1983); Jostens, Inc. v. National Computer Sys., 318 N.W.2d 691, 698 (Minn. 1982) (citing Kewanee Oil Co. v. Bicron Corp., 416 U.S. 470, 476 (1974)); *see also Milgrim on Trade Secrets*, in 12 BUSINESS ORGANIZATIONS § 2.08 (1982) [hereinafter cited as *Milgrim*].

82. Automated Sys. v. Service Bureau Corp., 401 F.2d 619, 625 (10th Cir. 1968); Sperry Rand Corp. v. Pentronics, 311 F. Supp. 910, 913 (E.D. Pa. 1970); Trilog Assocs., Inc. v. Famularo, 455 Pa. 243, 250, 314 A.2d 287, 292 (1974).

83. Telex Corp. v. IBM Corp., 367 F.Supp. 258, 320 (N.D. Okla. 1973), *aff'd*, 510 F.2d 894, 928-30 (10th Cir.), *cert. dismissed*, 423 U.S. 802 (1975) (affirming trade secret aspects); Cértek Computer Prods. v. Whitfield, 203 U.S.P.Q. 1020, 1024 (Cal. Super. Ct. 1977).

84. Gilburne & Johnston, *supra* note 78, at 217; *see* Com-Share, Inc. v. Computer Complex, Inc., 338 F. Supp. 1229, 1234 (E.D. Mich. 1971), *aff'd*, 458 F.2d 1341 (6th Cir. 1972); Cértek Computer Prods. v. Whitfield, 203 U.S.P.Q. 1020, 1024 (Cal. Super. Ct. 1977); Jostens, Inc. v. National Computer Sys., 318 N.W.2d 691, 699 (Minn. 1982).

85. Cértek Computer Prods. v. Whitfield, 203 U.S.P.Q. 1020, 1024 (Cal. Super. Ct. 1977).

86. Electro-Craft Corp. v. Controlled Motion, Inc., 332 N.W.2d 890, 898 (Minn. 1983);

Products which can be easily examined and reverse engineered are denied trade secret protection because of this requirement. The mere fact that it is possible to reverse engineer a product, however, does not preclude trade secret protection. The developer of the product is entitled to trade secret protection for at least the length of time it would take a competitor to lawfully obtain a copy of the product and reverse engineer it.[87] For a long time, it was virtually impossible to reverse engineer a computer program when only the object code was available; thus, by distributing only the object code, programmers managed to prevent the contents of their programs from being easily ascertainable. With the advent and ready availability of disassemblers and decompilers,[88] however, the contents of object code programs are becoming more easily ascertainable, and the trade secret status of widely distributed object code may be seriously threatened.

b. The Value Requirement

The element of value is usually fairly easy to prove in software cases,[89] and it is rarely even questioned. The only mention of value usually appears in the listing of the elements of a trade secret. In a world where computer programmers earn an average of fifteen dollars per hour and are only expected to produce about twenty lines of code per day,[90] it is hard to question the value of even a simple mailing label program which retails for approximately fifteen dollars. In fact, relatively simple programs which retail for less than one hundred dollars are the backbone of the multibillion dollar microcomputer software industry.

c. The Secrecy Requirement

Secrecy is by far the most important element of trade secret status. The essence of a trade secret is information which gives the possessor a competitive advantage because his competitors do not have access to it. If competitors learn the secret, the advantage is gone. The secrecy required by trade secret law is not absolute secrecy, however; a qualified or relative secrecy is sufficient.[91] The information may be revealed to employees and customers as necessary in the conduct of business pro-

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Jostens, Inc. v. National Computer Sys., 318 N.W.2d 691, 698 (Minn. 1982); Thermotics, Inc. v. Bat-Jac Tool Co., 541 S.W.2d 255, 260-61 (Tex. Civ. App. 1976); *see also* RESTATEMENT OF TORTS § 757, comment b (1939).

87. Data Gen. Corp. v. Digital Computer Controls, 297 A.2d 433, 436 (Del. Ch. 1971), *aff'd*, 297 A.2d 437 (Del. 1972).

88. Computer programs which translate object code back to source code.

89. Gilburne & Johnston, *supra* note 78, at 215.

90. Barden, *The Appliance Computer*, POPULAR COMPUTING, July 1983, at 58, 59.

91. Data Gen. Corp. v. Digital Computer Controls, 297 A.2d 437, 439 (Del. 1972); Jostens, Inc. v. National Computer Sys., 318 N.W.2d 691, 700 (Minn. 1982).

vided reasonable efforts are made to prevent the secret from being revealed to people outside the privy group.[92] Lax procedures both in-house and in allowing access to information by outsiders can easily cause the loss of protection through a determination either that the holder never considered the information to be a secret or that the holder allowed the information to become non-secret by failing to follow procedures reasonably designed to ensure secrecy.[93] Limited physical access to areas where the secret information is kept and confidentiality agreements for employees and customers seem to be required as a minimum effort in maintaining secrecy.[94]

Even when the holder of a trade secret binds his employees and customers not to disclose his secrets, a trade secret can still be lost through disclosure. Trade secrets are not necessarily privileged information which can be withheld during discovery[95] and trial. Although the damage done by disclosure in litigation may often be mitigated by protective orders,[96] the number of people who know the trade secret and who cannot be directly monitored for disclosure by the holder has been increased, and the threat to secrecy has been increased.

Mass marketing of computer software also increases the danger that the trade secrets in the software will be inadvertantly disclosed to the public. Although courts have held that the mass distribution of software is not by itself sufficient disclosure to cause a loss of secrecy,[97] unrestricted marketing can cause a loss of secrecy if the secret can be discerned by scrutiny and inspection of the product.[98] As disassembler and decompiler programs become readily available, programs which are mass marketed in object code only to protect their secrecy will become more vulnerable to scrutiny and inspection which may reveal their secrets and cause a loss of protection.

3. Scope of Trade Secret Protection

Once the existence of a trade secret has been established, the owner is protected against misappropriation of his secret through improper con-

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92. Jostens, Inc. v. National Computer Sys., 318 N.W.2d 691, 700 (Minn. 1982).

93. *Id.*

94. Electro-Craft Corp. v. Controlled Motion, Inc., 332 N.W.2d 890, 901-903 (Minn. 1983); Jostens, Inc. v. National Computer Sys., 318 N.W.2d 691, 700 (Minn. 1982).

95. Centurion Indus. v. Warren Steurer & Assocs., 665 F.2d 323, 325-26 (10th Cir. 1982).

96. *Id.* at 326; Penn v. Metro Data Co., No. 81 C 3051 (N.D. Ill. Dec. 29, 1981) (available Sept. 1, 1983, on LEXIS Pat cop Library); *In re* Belth v. Insurance Dep't, 95 Misc. 2d 18, 406 N.Y.S.2d 649 (Sup. Ct. 1977).

97. Management Science of Am., Inc. v. Cörg Sys., 6 COMPUTER L. SERV. REP. 921, 925 (N.D. Ill. 1978); Data Gen. Corp. v. Digital Computer Controls, 357 A.2d 105, 114 (Del. Ch. 1975).

98. Speedry Chem. Prods. v. Carter's Ink Co., 306 F.2d 328, 334 (2d Cir. 1962); Videotronics, Inc. v. Bend Elecs., 564 F. Supp. 1471, 1476 (D. Nev. 1983); National Welding

duct. He is protected against (1) discovery of the secret by improper means; (2) disclosure or use of the secret which constitutes a breach of an express or implied duty of confidence; (3) use of the secret by one who learned the secret from a third person with notice that it was a secret and that the third person discovered it by improper means or that the third person's disclosure of it was a breach of confidence; (4) use of the secret by one who learned of it with notice that it was a secret and its disclosure was made to him by mistake; and (5) use of the secret by one who learned of the secret without notice that it was a secret and that disclosure to him was a breach of confidence or who learned of the secret through a mistake without notice of the secrecy and mistake, after he receives notice of such facts.[99] The owner is not protected against (1) independent discovery through proper means;[100] (2) disclosure or use of the secret which does not constitute a breach of confidence;[101] and (3) use of the secret by one who learned of the secret without notice that it was a secret and that disclosure to him was a breach of confidence, or who learned of the secret through a mistake without notice of the secrecy and mistake, before he receives notice of such facts.[102]

Once protection attaches, it lasts for as long as the secret is not discovered by legitimate means.[103] Even when the information is discovered by improper means and is therefore no longer secret from all competitors, the original holder is entitled to protection from use by the improper discoverers for at least as long as it would have taken a competitor to discover the secret through proper means.[104]

a. Discovery Through Proper Means

As noted above, the owner of a trade secret receives no protection against the independent discovery of the secret through proper means. There are two primary means of independent discovery that are considered proper. The first is completely independent discovery. Thus, if one computer programmer manages to write a program that is exactly like a preex-

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Equip. Co. v. Hammon Precision Equip. Co., 165 F. Supp. 788, 795 (N.D. Cal. 1958); Futurecraft Corp. v. Clary Corp., 205 Cal. App. 2d 279, 289-90, 23 Cal. Rptr. 198, 211-12 (1962).

99. RESTATEMENT OF TORTS §§ 757-758 (1939).

100. *Milgrim, supra* note 81, § 5.04[1].

101. Structural Dynamics Research Corp. v. Engineering Mechanics Research Corp., 401 F. Supp. 1102, 1110-12 (E.D. Mich. 1975).

102. RESTATEMENT OF TORTS § 758 (1939); *see* Computer Print Sys. v. Lewis, 281 Pa. Super. 240, 254, 422 A.2d 148, 155 (1980); *Milgrim, supra* note 81, § 5.04[2][a].

103. University Computing Co. v. Lykes-Youngstown Corp., 504 F.2d 518, 534 (5th Cir. 1974).

104. Data Gen. Corp. v. Digital Computer Controls, 297 A.2d 433, 436 (Del. Ch. 1971), *aff'd*, 297 A.2d 437 (Del. 1972); Analogic Corp. v. Data Translations, Inc., 371 Mass. 643, 647-48, 358 N.E.2d 804, 807-08 (1976).

isting program written by another programmer without ever seeing or hearing of the preexisting program, he could not be held liable for misappropriation of a trade secret. The second proper means of discovery is reverse engineering. Reverse engineering is the process of examining and analyzing a product to discover the process by which it was created.[105] Under trade secret law, a person is not prohibited from buying a product on the market and using reverse engineering to discover the secret and making use of it.[106] Reverse engineering would allow a programmer to buy a copy of the program on the market and examine its documentation and operation in order to write a program that performs the same tasks in the same or similar manner. It would also permit a person to buy a copy of the program and then use a disassembler or decompiler to translate the object code back to human readable source code. He could then write a program with the information he gleaned from the decompiled code.

b. Duty Not to Disclose Created by Confidential Relationships

Similarly, the owner of a trade secret is not protected against the disclosure or use of that secret by some party in a contractual relationship with the owner unless the disclosure or use by that party constitutes a breach of confidence. Thus, the existence of trade secret protection in these situations depends upon the existence of a duty of confidence owed by the disclosing party to the owner. The existence of a duty of confidence may arise from an express contract with buyers, users, employees, or any other party or from an implied contract based upon an employment relationship. Thus, a confidential relationship based on an express contract containing a restrictive use clause may subject a buyer to liability for disclosure of software secrets.[107] Similarly, an express agreement with a lessee or licensee of software restricting use and disclosure can provide a basis for breach of confidence.[108] Even express nondisclosure agreements signed by prospective customers during demonstrations of software have been used as a basis for wrongful breach of confidence.[109]

Confidential relationships with employees are much more complex than relationships with customers, lessees, licensees, and prospective customers. Even when no express agreements have been signed, an employee has an

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

106. Analogic Corp. v. Data Translations, Inc., 371 Mass. 643, 647-48, 358 N.E.2d 804, 807 (1976).

107. University Computing Co. v. Lykes-Youngstown Corp., 504 F.2d 518, 535 (5th Cir. 1974).

108. *Cf.* Management Science of Am. v. Cörg Sys., 6 COMPUTER L. SERV. REP. 921 (N.D. Ill. 1978).

109. M. Bryce & Assocs. v. Gladstone, 107 Wis. 2d 241, 249-50, 319 N.W.2d 907, 911-12 (Ct. App. 1982).

implied duty not to wrongfully use or disclose trade secrets disclosed to him by his employer.[110] However, this implied duty does not prevent an employee from using and disclosing general knowledge and skill which he acquired during his employment—*i.e.*, knowledge he would have acquired anyway, irrespective of whom he worked for in the field.[111] Furthermore, the manner in which the employee gained the knowledge alleged to be a trade secret may determine whether the knowledge falls within the ambit of this implied duty. If the subject matter of the trade secret is in being and an employee learns about it in the course of his employment in a relationship of confidence, the duty not to use or disclose trade secret knowledge adversely to his employer arises. On the other hand, if the subject matter of the trade secret is brought into being because of the initiative of the employee in its creation, innovation or development even though the relationship is one of confidence, no duty arises since the employee may then have an interest in the subject matter at least equal to that of his employer or, in any event, such knowledge is a part of the employee's skill and experience. In such a case, absent an express contractual obligation by the employee not to use or disclose such confidential information acquired during his employment adverse to his employer's interest, he is free to use or disclose it in subsequent employment activity.[112]

A general nondisclosure agreement is not sufficient to establish an "express contractual obligation" preventing an employee from later using information which he developed;[113] an express agreement covering secrets developed by the employee is required.

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110. Structural Dynamics Research Corp. v. Engineering Mechanics Research Corp., 401 F. Supp. 1102, 1111 (E.D. Mich. 1975); Jostens, Inc. v. National Computer Sys., 318 N.W.2d 691, 701, 744-45 (Minn. 1982).

111. Structural Dynamics Research Corp. v. Engineering Mechanics Research Corp., 401 F. Supp. 1102, 1110-11 (E.D. Mich. 1975); Dynamics Research Corp. v. Analytic Sciences Corp., 9 Mass. App. Ct. 254, 400 N.E.2d 1274 (1980); Jostens, Inc. v. National Computer Sys., 318 N.W.2d 691, 701-02 (Minn. 1982).

112. Structural Dynamics Research Corp. v. Engineering Mechanics Research Corp., 401 F. Supp. 1102, 1111 (E.D. Mich. 1975); *see also* Amoco Prod. Co. v. Lindley, 609 P.2d 733, 744-45 (Okla. 1980).

113. Amoco Prod. Co. v. Lindley, 609 P.2d 733, 745 (Okla. 1980); *see also* Structural Dynamics Research Corp. v. Engineering Mechanics Research Corp, 401 F. Supp. 1102, 1112-13 (E.D. Mich. 1975) (an example of a contract which was sufficient to provide protection). The problem of an employee disclosing trade secrets through use of his skill and general knowledge acquired during employment can sometimes be cured by contracts containing covenants not to compete. Electronic Data Sys. Corp. v. Powell, 524 S.W.2d 393, 397-98 (Tex. Civ. App. 1975). However, covenants not to compete are void in many jurisdictions. CAL. BUS. & PROF. CODE § 16600 (West 1964); LA. R.S. 23:921 (1964); Mich. Comp. Laws Ann. § 445.761 (West 1967). The prohibition of LA. R.S. 23:921 is subject to the following proviso:

> [P]rovided that in those cases where the employer incurs an expense in the training of the employee or incurs an expense in the advertisement of the business

4. Enforcement of Trade Secret Protection

In addition to proving the existence and misappropriation of a trade secret, a plaintiff in a trade secret action must prove that the defendant has used or is about to use the plaintiff's trade secret.[114] Proof of commercial use of software is often similiar to proof of copying for copyright purposes. Use can be shown by the presence of telltale bugs and spaghetti code[115] in the defendant's software which exactly match those found in the plaintiff's software.[116] Telltale bug proof, however, can only be used in the cases where actual copies of code were improperly obtained and copied. In cases where the employees take their employer's trade secrets with them in their memories, other means of proof must be used. The improbability of the defendant's ability to independently develop the software in question in the amount of time available has also been used as circumstantial evidence of use.[117] The defendant need not have actually made a profit from his use of the plaintiff's software. An attempt to market software which has clearly been misappropriated from the plaintiff is sufficient evidence of use or attempt to use.[118]

Once the plaintiff has proven the existence, misappropriation, and use of a trade secret, he is entitled to injunctive relief and damages.[119] When the defendant's actual profits can be proved, they are usually used as a measure of the value of the trade secret to the defendant.[120] But where the defendant has not yet reaped profits or where they cannot be

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that the employer is engaged in, then in that event it shall be permissible for the employer and employee to enter into a voluntary contract and agreement whereby the employee is permitted to agree and bind himself that at the termination of his or her employment that said employee will not enter into the same business that employer is engaged over the same route or in the same territory for a period of two years.

114. University Computing Co. v. Lykes-Youngstown Corp., 504 F.2d 518, 540 (5th Cir. 1974).

115. Spaghetti code is a series of excessive branch statements and useless code which does not affect the functioning of a program but which is deliberately inserted in unusual and illogical places in the program. Programmers use spaghetti code as a means of placing distinguishing or identifying marks in their programs; it is highly unlikely that two programmers who did not see each other's code would produce exactly the same code including exactly the same dummy spaghetti code.

116. Structural Dynamics Research Corp. v. Engineering Mechanics Research Corp., 401 F. Supp. 1102, 1117 (E.D. Mich. 1975); *cf.* BPI Sys. v. Leith, 532 F. Supp. 208, 210 (W.D. Tex. 1981) (other program similarities indicative of copying).

117. Telex Corp. v. IBM Corp., 367 F. Supp. 258, 319-20 (N.D. Okla. 1973), *aff'd*, 510 F.2d 894, 928-30 (10th Cir.), *cert. dismissed*, 423 U.S. 802 (1975) (affirming trade secret aspects); *cf.* M. Bryce & Assocs. v. Gladstone, 107 Wis. 2d 241, 250, 319 N.W.2d 907, 912 (Ct. App. 1982).

118. University Computing Co. v. Lykes-Youngstown Corp., 504 F.2d 518, 540-41 (5th Cir. 1974).

119. *Milgrim*, *supra* note 81, §§ 7.08[1], [3].

120. University Computing Co. v. Lykes-Youngstown Corp., 504 F.2d 518, 536-40 (5th Cir. 1974).

proved, a "reasonable royalty" in an amount upon which a person desiring to use the trade secret and a person desiring to license it would agree is a proper measure of damages.[121] In calculating the "reasonable royalty" fee, the trier of fact should consider such factors as the resulting and foreseeable changes in the parties' competitive position, the prices past licensees may have paid, the total value of the secret to the plaintiff (including development costs and the importance of the secret to the plaintiff's business), the nature and extent of the defendant's intended use, and any other factors relevant to the particular case.[122] These principles usually provide an adequate damage remedy except in the case where the defendant has in some manner completely destroyed the value of the trade secret—for instance, by publication. In such a case, the appropriate measure of damages is the total value of the trade secret to the plaintiff, including, but not limited to, development costs.[123]

C. *Patent Protection for Software*

1. *Introduction*

The patentability of computer software has been the subject of a long battle between the Patent and Trademark Office and the Court of Customs and Patent Appeals, with the United States Supreme Court acting as a reluctant mediator. From 1969 to 1981, the Patent Office fought to keep computer software unpatentable while the Court of Customs and Patent Appeals insisted upon extending protection to at least some software. While the Patent Office appeared to have won the early rounds,[124] the Court of Customs and Patent Appeals appears to have won the latest rounds with the Supreme Court decisions in *Diamond v. Diehr*[125] and *Diamond v. Bradley*.[126]

In *Diamond v. Diehr*, the Supreme Court held that the mere presence of a computer program in an otherwise patentable claim will not destroy patentability.[127] In *Diamond v. Bradley*, an equally divided Court affirmed the decision of the Court of Customs and Patent Appeals that held that at least some computer programs and program related inventions are patentable.[128] Thus, the Supreme Court has said that computer software is not necessarily unpatentable. On the other hand, the Court has not

121. *Id.*
122. *Id.*
123. *Id.*
124. Parker v. Flook, 437 U.S. 584 (1978); Dann v. Johnston, 425 U.S. 219 (1976); Gottschalk v. Benson, 409 U.S. 63 (1972).
125. 450 U.S. 175 (1981).
126. 450 U.S. 381 (1981), *aff'g In re* Bradley, 600 F.2d 807 (C.C.P.A. 1979) (*per curiam*) (judgment affirmed by an equally divided court).
127. 450 U.S. at 185.
128. *In re* Bradley, 600 F.2d 807, 811 (C.C.P.A. 1979), *aff'd sub nom.* Diamond v. Bradley, 450 U.S. 381 (1981) (*per curium*).

given software any special status in obtaining patentable subject matter status. Software must meet all of the ordinary requirements of patentability to qualify for patent protection.[129] For this reason, it is probable that inherent characteristics of the majority of computer programs, especially mass marketed microcomputer software, will continue to make it exceedingly difficult to obtain patent protection for most software.

2. Requirements for Obtaining a Patent

Sections 101 through 103 and 112 of title 35 of the United States Code define the requirements of patentability. The invention must fit within one of the categories of statutory subject matter,[130] it must be novel,[131] and it must not have been obvious at the time it was invented to a person having ordinary skill in the subject matter to which the invention is related.[132] The applicant must also disclose sufficient information about the invention to enable anyone skilled in the relevant subject matter to make and use the invention.[133]

a. Patentable Subject Matter

According to section 101, which establishes the categories of statutory subject matter, patents may be granted for "any new and useful process, machine, manufacture or composition of matter, or any new and useful improvement thereof."[134] A *process* is defined as a process, art, or method or a new use of a known process, machine, manufacture or composition of matter.[135] Any software for which patent protection is sought must be made to fit into one of these categories of statutory subject matter. Attempts to patent software usually try to characterize it as a process or as part of a new machine, *i.e.*, a programmed computer.[136]

All of the categories of statutory subject matter have been interpreted to exclude scientific principles, laws of nature, mathematical formulas, and methods of calculation.[137] These exclusions have created a maze of pitfalls and traps in any attempt to obtain a patent for software.

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129. Paine, Webber, Jackson & Curtis, Inc. v. Merrill Lynch, Pierce, Fenner & Smith, Inc., 564 F. Supp. 1358, 1366 (D. Del. 1983).

130. 35 U.S.C. § 101 (1982).

131. *Id.* § 102.

132. *Id.* § 103.

133. *Id.* § 112.

134. *Id.* § 101.

135. *Id.* § 100(b).

136. Davidson, *Protecting Computer Software: A Comprehensive* Analysis, 23 JURIMETRICS J. 339, 349 (1983); *see, e.g.*, Diamond v. Diehr, 450 U.S. 175 (1981) (process claim); *In re* Bradley, 600 F.2d 807 (C.C.P.A. 1979), *aff'd sub nom.* Diamond v. Bradley, 450 U.S. 381 (1981) (*per curiam*) (operating claim).

137. Diamond v. Diehr, 450 U.S. 175, 185-87 (1981); Parker v. Flook, 437 U.S. 584, 589 (1978); Gottschalk v. Benson, 409 U.S. 63, 67 (1972); *In re* Walter, 618 F.2d 758, 765 (C.C.P.A. 1980).

Most of the attempts to patent computer related inventions have centered around the presence and effect of a mathematical algorithm implemented by a computer through a computer program. In *Gottschalk v. Benson*, the United States Supreme Court defined an algorithm as "[a] procedure for solving a given type of mathematical problem."[138] Much confusion has been caused by the fact that this definition of the term "algorithm" differs from that used generally in the computer industry.[139] In the computer industry, the term "algorithm" is generally used to mean a procedure consisting of a sequence of logical operations which combine data, mathematical principles and equipment for the purpose of interpreting and/or acting upon certain input data.[140] It must be emphasized that when the Supreme Court used the term "algorithm" it was referring to a procedure for solving a mathematical problem and not a procedure for interpreting or acting on input data. A mathematical algorithm or formula itself cannot be patented.[141] This does not mean that any invention or program which involves a mathematical formula is unpatentable.[142] It simply means that a process claim which contains a mathematical formula cannot be drawn so broadly that it covers all uses, known and unknown, of the formula.[143] A patent will not be granted on an invention or program involving a mathematical formula where the practical effect of granting the patent would be to preempt all use of the formula.

Nevertheless, many patent applications that could otherwise be granted are defeated because the claims are drafted too broadly. This problem is exacerbated by the fact that one cannot avoid the trap of overly broad drafting by the mere addition of conventional post-solution activity to the program or by the identification of a limited area of intended application.[144]

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138. 409 U.S. 63, 65 (1972).

139. Paine, Webber, Jackson & Curtis, Inc. v. Merrill Lynch, Pierce, Fenner & Smith, Inc., 564 F. Supp. 1358, 1366-67 (D. Del. 1983).

140. *Id.* at 1367.

141. *Gottschalk*, 409 U.S. at 65-67.

142. *Id.*

143. *Id.* at 68. In *Gottschalk*, Benson tried to patent a method of programming a general purpose digital computer to convert binary coded decimal numbers to pure binary numbers. The Court found that the claim was so broadly drafted that it covered all known and unknown uses of the binary coded decimal to pure binary conversion formula. The Court felt that the practical effect of granting Benson's application would be to patent an abstract idea and preempt all practical use of it; it therefore denied the application. *Id.* at 71-72.

144. Parker v. Flook, 437 U.S. 584 (1978). In *Parker* the invention was a process implemented by a computer program which took four values supplied by the operator and using a mathematical formula calculated a fifth value. The program itself apparently did nothing with the calculated number except report it back to the operator. The Court felt that Flook's program was simply a method of calculating, and therefore, was not patentable. *Id.* at 594-95. The fact that Flook limited his claim to the formula to any use in the process of catalytic chemical conversion of hydrocarbons did not change the fact that his claim was essentially a claim to a method of calculation which could not be patented. *Id.* at 589-90. This line of reasoning is likely to prevent any general statistical utility software from being patented.

While a formula itself cannot be patented, however, the application of a newly discovered formula in a particular process may be patented, if the process as a whole is patentable.[145] When a patent claim recites a formula, the claim must be examined to see whether it is seeking patent protection for the formula in the abstract or for a structure or process which applies the formula but which, considered as a whole, performs a function which the patent laws are designed to protect.[146] Such a patent claim and the inquiry it involves were presented in *Diamond v. Diehr*.

In *Diamond v. Diehr*, Diehr applied for a patent on a process for molding rubber which ensured that the rubber would always be perfectly cured. A computer operated by a program took constant measurements of the temperature of the mold and applied a known formula to constantly recalculate the remaining cure time taking into account changes in temperature during the elapsed cure time. When the computer calculated that the remaining cure time was exactly zero, it automatically opened the mold. Diehr did not attempt to claim patent protection for the formula itself;[147] he claimed only the improved process for curing rubber.[148] Since Diehr only attempted to patent a total process and not the formula itself or a method of calculation, the Court held that the presence of the formula and the computer solution of it did not destroy the statutory subject matter of the process as a whole.[149]

Since *Diehr*, the lower courts have followed a two-step analysis in deciding whether patent claims for computer related inventions, which are usually predicated upon an assertion that the application of a formula is part of a particular process, involve one of the categories of statutory subject matter or one of the exclusions to those categories. This analysis was originally set forth in *In re Walter*[150] and was approved by the Supreme Court in *Diehr*.

> First, the claim is analyzed to determine whether a mathematical algorithm is directly or indirectly recited. Next, if a mathematical algorithm is found, the claim as a whole is further analyzed to determine whether the algorithm is "applied in any manner to physical elements or process steps," and, if it is, it "passes muster under [section] 101."[151]

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145. Diamond v. Diehr, 450 U.S. 175, 187-88 (1981); Gottschalk v. Bensen, 409 U.S. 63, 67 (1972).

146. Diamond v. Diehr, 450 U.S. 175, 191-92 (1981).

147. *Id.* at 181.

148. *Id.* at 191.

149. *Id.* at 192-93.

150. 618 F.2d 758 (C.C.P.A. 1980).

151. *In re* Pardo, 684 F.2d 912, 915 (C.C.P.A. 1982) (quoting *In re* Walter, 618 F.2d at 767; citing *In re* Abele, 684 F.2d 902 (C.C.P.A. 1982); *In re* Taner, 681 F.2d 787, 790-91 (C.C.P.A. 1982).

An indication as to what types of computer-related claims will be held to involve statutory subject matter under this analysis can be obtained from cases recently decided in the lower courts.

In *Paine, Webber, Jackson & Curtis, Inc. v. Merill Lynch, Pierce, Fenner & Smith, Inc.*,[152] the district court for the district of Delaware upheld a patent for a data processing system which managed a combined brokerage margin account, money market account, and charge/checking account plan because the court could not find any direct or indirect recitation of any procedure for solving a mathematical problem in the claims.[153]

The Court of Customs and Patent Appeals was also unable to find any mathematical algorithm in *In re Pardo*,[154] which involved a compiler program that could accept statements using variables before the statements which defined the variables to be used. The court stated that "[t]he method operates on *any* program and *any* formula which may be input, regardless of mathematics content. That a computer controlled according to the invention is capable of handling mathematics formulas is irrelevant to the question of whether a mathematical algorithm is recited by the claims."[155]

In *In re Meyer & Weisman*,[156] however, the Court of Customs and Patent Appeals found an algorithm recited in the claims and decided that the claims claimed the algorithm itself without applying it to physical elements or process steps. The software in *Meyer & Weisman* stored and statistically analyzed data collected by a neurologist during a physical examination and helped him to reach a diagnosis. Both the data collected and the relationship between each set of data and the diagnosis it suggested were well known and used by all neurolgists. The software simply used a mathematical algorithm to relieve the physician of the normal manual process of collecting and analyzing the data.[157]

Both a recited algorithm and a process which operated to transform physical elements were found by the Court of Customs and Patent Appeals in *In re Taner*.[158] The computerized process involved received raw sonic, seismic data and transformed it into a pictoral representation of the earth formations through which the sound waves had passed. The process claim which used the algorithm as one of its steps was upheld.

In *In re Abele*[159] the Court of Customs and Patent Appeals upheld one claim, which described a process whereby a computer tomography

152. 564 F. Supp. 1358 (D. Del. 1983).
153. *Id.* at 1368.
154. 684 F.2d 912 (C.C.P.A. 1982).
155. *Id.* at 916.
156. 215 U.S.P.Q. 193 (C.C.P.A. 1982).
157. *Id.* at 197-99.
158. 681 F.2d 787, 790 (C.C.P.A. 1982).
159. 684 F.2d 902 (C.C.P.A. 1982).

scanner produced X-ray data which was then manipulated by a computer using a mathematical algorithm to produce a display which enhanced certain parts of the picture and blurred other parts, while rejecting another claim in the same application which merely described the method by which the computer calculated the new data from the old data. Both claims in *Abele* had recited an algorithm, but only one claim had applied it in a process to transform physical elements. The claim which described the steps by which the computer calculated the new data was held to be a claim to the formula itself and was, therefore, disallowed.[160]

A hypothetical example may help to further explain which types of computer related claims are statutory subject matter under the current state of the law. Suppose a biochemist/programmer is involved in the task of growing regenerative micro-organisms. It is known that the amount of time it will take a given number of cells to use up a given amount of nutrient solution depends upon several hundred rapidly changing variables. However, conditions change so rapidly that current computers using known methods cannot process the data fast enough to keep the nutrient solution refreshed at the most efficient rate. The biochemist/programmer develops a software package that measures the data and processes it much more quickly than prior methods. This software uses a newly discovered algorithm to constantly resolve the many simultaneous equations necessary to calculate the exact rate at which nutrients must be added to the constantly changing solution. Since the equations can now be solved much faster, the computer can now make rapid changes in the rate at which the nutrient is added to the solution, and the solution now remains always at the most efficient mix and produces the maximum number of new cells per minute. The formula which is used to solve the simultaneous equations more rapidly is a mathematical algorithm. Any claim which merely describes the steps used to solve the equations will be interpreted as a claim to the algorithm itself and will be denied because to uphold it would preempt all uses of the algorithm.[161] A newly discovered method of solving mathematical problems is a law of nature which belongs to everyone. This patent cannot be allowed to tie up the simultaneous equation formula so that it could not be used in totally different applications such as maximum profit business models. Similarly, any claim which recited the formula and claimed to preempt all uses of it *in the microbiology industry* would be too broad and would be stricken.[162] The biochemist/programmer, for instance, could not prevent the formula for rapid solution of simultaneous equations from being used

160. *Id.* at 908.

161. Gottschalk v. Benson, 409 U.S. 63, 67 (1972); *In re* Abele, 684 F.2d 902, 908 (C.C.P.A. 1982).

162. Parker v. Flook, 437 U.S. 584, 590 (1978).

in software designed to control the proper drying conditions for fish food made by drying plankton. However, a claim which described the process for monitoring nutrient solutions for growing regenerative cells and which described the simultaneous equation solution algorithm as one of its steps would be upheld.[163] Such a claim protects a process for making compositions of matter and is the type of process which has always been patentable. The fact that this process was not possible until the new algorithm was discovered and applied does not make it unpatentable. Nor does the fact that a computer is required to run the process fast enough to make it useful affect the patentability of the process. The computer is simply the best means of implementing the process.

b. Novelty

In addition to falling within one of the categories of statutory subject matter, an invention must also be novel and nonobvious to qualify for a patent.[164] 35 U.S.C. § 102 states that an applicant will not be entitled to a patent for his invention if— (1) the invention was known or used by others in this country before the applicant invented it, (2) the invention was patented in this or a foreign country before the applicant invented it, (3) the invention was described in a printed publication in this or a foreign country before the applicant invented it, (4) the invention was in public use or on sale in this country more than one year before the applicant filed his application, (5) the invention was patented in this or a foreign country more than one year before the applicant filed his application, (6) the invention was described in a printed publication in this or a foreign country more than one year before the applicant filed his application, (7) the invention was described in a patent granted or an application for a patent filed by another person in the United States before the applicant invented it, or (8) the invention was invented in this country by someone else before the applicant invented it.[165]

The requirement that an invention be novel in order to merit patent protection—one of the concerns addressed in section 102—is generally known as the novelty requirement. An earlier invention that defeats the novelty of an applicant's invention is said to anticipate the applicant's invention. An invention need not be identical to the applicant's invention to anticipate it. If there is an invention created before the applicant's invention that would have violated a patent granted on the applicant's invention if it had been invented later, the earlier invention anticipates

163. Diamond v. Diehr, 450 U.S. 175, 187-88 (1981); *In re* Abele, 684 F.2d 902, 908-09 (C.C.P.A. 1982); *In re* Taner, 681 F.2d 787, 790-91 (C.C.P.A. 1982).

164. 35 U.S.C. §§ 102-103 (1982).

165. *Id.* § 102.

the applicant's invention.[166] Concepts and points of similarity from several prior inventions cannot be combined to anticipate the applicant's invention and destroy the element of novelty.[167]

c. Nonobviousness

Although earlier inventions cannot be combined to destroy the novelty of the applicant's invention, they can, however, be combined to prove that the applicant's invention does not meet the requirement of nonobviousness set out in 35 U.S.C. § 103.[168] According to section 103, an invention may not be patented "if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains."[169] The presence or absence of nonobviousness turns upon three factors: the scope and content of the prior art, the differences between the prior art and the claims at issue, and the level of ordinary skill in the pertinent art.[170]

While the level of skill against which the nonobviousness of the invention is to be tested is not that of a layman, but that of a person reasonably skilled in the applicable art,[171] it is difficult to precisely establish the current state of knowledge in any art. For this reason, the problem solved by the invention and the efforts of others to solve that problem in the past are often examined. Substantial efforts by others in the field which have failed to solve the problem solved by the claimed invention are persuasive evidence of nonobviousness.[172]

The requirement of nonobviousness will preclude patent protection for the majority of computer programs since most programs result from the application of combinations of generally known programming skills and/or generally known data processing concepts.[173] They are valuable primarily because of the amount of time and effort it took to compose and debug them. However, all combinations of such programming skills and concepts, and therefore all computer programs, are not obvious and

166. Aerotec Indus. v. Pacific Scientific Co., 381 F.2d 795 (9th Cir. 1967), *cert. denied*, 389 U.S. 1049 (1968); White Consol. Indus. v. Vega Servo-Control, Inc., 214 U.S.P.Q. 796, 828 (S.D. Mich. 1982).

167. White Consol. Indus. v. Vega Servo-Control, Inc., 214 U.S.P.Q. 796, 828-30 (S.D. Mich. 1982); *see also* Tee-Pak, Inc. v. St. Regis Paper Co., 491 F.2d 1193, 1198 (6th Cir. 1974).

168. *See* Reeves Instrument Corp. v. Beckman Instruments, Inc., 444 F.2d 263, 270 (9th Cir. 1971).

169. 35 U.S.C. § 103 (1982).

170. Dann v. Johnston, 425 U.S. 219, 225-27 (1976).

171. *Id.* at 229.

172. Reeves Instrument Corp. v. Beckman Instruments, Inc., 444 F.2d 263, 271-72 (9th Cir. 1971).

173. Gilburne & Johnston, *supra* note 78, at 217; Bender, *supra* note 73 at 69 & n.97.

unpatentable.[174] Inventions which involve combinations of elements which are individually known to those skilled in the art must be carefully scrutinized because the probability of finding obviousness in such inventions is high.[175] If all the elements were known in the prior art, the combination must produce unusual or surprising consequences to be nonobvious.[176] Thus, while it is not impossible for computer programs to meet the requirement of nonobviousness,[177] it is unlikely that many programs will meet them.

d. Disclosure

Even if an invention is patentable, an application will be denied if it fails to describe the invention sufficiently. 35 U.S.C. § 112 requires an applicant to describe the invention "in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same."[178] The description is sufficient even though it is incomprehensible to an unskilled person, if it is sufficient for a skilled person to make and use the invention.[179] Every detail need not be disclosed, but a part essential to one skilled in the art to make or use the invention cannot be left out merely because it is a trade secret.[180] One of the purposes behind disclosure is to allow others to make and use the invention after the patent has expired.[181] If information could be left out merely because it was a trade secret, the applicant could extend his monopoly beyond the patent period by refusing to license the trade secret.[182]

This requirement may put some software owners in a Catch-22 situation. The software may be sufficiently novel[183] to be protectable by trade secret status but not sufficiently nonobvious to be protectable as a separate claim in the patent.[184] If it is disclosed in the patent application, trade secret protection may be lost because the software is no longer sufficiently

174. Reeves Instrument Corp. v. Beckman Instruments, Inc., 444 F.2d 263, 271 (9th Cir. 1971).

175. *Id.*

176. *Id.*

177. *See* Paine, Webber, Jackson & Curtis, Inc. v. Merrill Lynch, Pierce, Fenner & Smith, Inc., 564 F. Supp. 1358 (D. Del. 1983); *In re* Pardo, 684 F.2d 912 (C.C.P.A. 1982); *In re* Taner, 681 F.2d 787 (C.C.P.A. 1982).

178. 35 U.S.C. § 112 (1982).

179. White Consol. Indus. v. Vega-Servo Control, Inc., 214 U.S.P.Q. 796, 823-24 (S.D. Mich. 1982).

180. *Id.* at 823; *cf. id.* at 825 (retaining a trade secret essential part violates the "best mode" requirement of 112).

181. *Id.* at 822.

182. *Id.* at 823-24.

183. The term "novel" is used here in the sense that it is used in trade secret law, not in the sense it is used in patent law. *See supra* text accompanying notes 79-88.

184. *Cf.* Dann v. Johnston, 425 U.S. 219 (1976) (discussing the standard of nonobviousness for patentability).

secret,[185] and the applicant still may not obtain a patent if the software is too "obvious." If it is not disclosed, the applicant takes the chance that his application for the rest of his invention will be invalid because he did not disclose information essential to a person skilled in the art to make and use the invention.[186] If his entire invention is software related and he is unsure of patentability, the applicant should theoretically be able to apply for a patent and then fall back on trade secret protection if the patent is denied, for patent applications are supposed to be confidential.[187] In reality, if the applicant chooses to pursue his application through an appeal to the Court of Appeals for the Federal Circuit,[188] the confidentiality may be lost since large excerpts from the claims and long discussions of the invention frequently appear in the opinions even when the claim is denied.[189]

3. *Scope and Enforcement of Patent Rights*

Even when the software developer or programmer has been granted a patent, his troubles are far from over. Although 35 U.S.C. § 154 gives him the exclusive right to make, use, or sell his invention for seventeen years, the problems involved in enforcing this right are serious. The percentage of concluded lawsuits for patent infringement in which the patentee has emerged the winner has been and continues to decline.[190] To prove infringement, the patentee must prove that (1) his invention was made, used or sold, (2) during the term of the patent (3) by one without authority to do so.[191] The plaintiff must show that the defendant's device "does substantially the same work in substantially the same way to accomplish substantially the same result" as the invention described in the claims of the plaintiff's patent.[192] Under this reasoning, also known as the doctrine of equivalents, a programmed computer can infringe a patent on a dedicated machine,[193] and the reverse is probably also true.

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185. *See supra* text accompanying notes 91-98.

186. *See, e.g.*, White Consol. Indus. v. Vega Servo-Control, Inc., 214 U.S.P.Q. 796, 825-26 (S.D. Mich. 1982).

187. 35 U.S.C. § 122 (1982).

188. The Court of Appeals for the Federal Circuit has replaced the Court of Customs and Patent Appeals and now has jurisdiction over all patent, copyright and trade secret appeals. *See* 28 U.S.C. §§ 41, 1292 (c)(2) (1982).

189. *See, e.g.*, Parker v. Flook, 437 U.S. 584 (1978); Gottschalk v. Benson, 409 U.S. 63 (1972); *In re* Walter, 618 F.2d 758 (C.C.P.A. 1980); *In re* Gelnovatch, 595 F.2d 32 (C.C.P.A. 1979).

190. Bender, *supra* note 73, at 69-70.

191. Systematic Tool & Mach. Co. v. Walter Kidde & Co., 390 F. Supp. 178, 197-98 (E.D. Pa. 1975), *exceptions denied*, 409 F. Supp. 511 (E.D. Pa. 1976), *rev'd on other grounds*, 555 F.2d 342 (3d Cir.), *cert. denied*, 434 U.S. 857 (1977).

192. Decca, Ltd. v. United States, 544 F.2d 1070, 1079 (Ct. Cl. 1976).

193. *Id.* at 1080-81. A dedicated machine is a computer with one built in program which is able to perform only one task or function.

The defendant in an infringement action has a number of defenses available to him. An attack on the validity of the patent is probably the most important and successful defense.[194] Although a patent is presumed valid,[195] the presumption is not particularly strong. Software patents are particularly vulnerable to this defense because of the history of uncertainty surrounding the patentability of software. Other defenses include abandonment,[196] use of the patent in violation of the antitrust laws,[197] laches,[198] and permission to make, use, or sell the patentee's invention.[199]

In addition, the patent process is inherently long and expensive, and the uncertainty surrounding software patents in general exacerbates this problem. Furthermore, the limited lifespan of most software and the apparent unavailability of patent protection for the majority of software makes patent protection unsuited for most cases. In the unusual case where software can meet the requirements of statutory subject matter, novelty, and nonobviousness, and where the expected lifespan of the software is relatively long and the value of the software relatively high, patent protection may be worth the time and expense, but this is not usually the case.

D. Compatibility of Copyright, Trade Secret, and Patent Protection

The system of intellectual property law in force in the United States today does not seem to be designed to allow the owner of such property to obtain more than one type of protection at a time. The system seems to rest upon the assumption that all intellectual property will fit neatly within a particular category, and that the protection provided within the chosen category will be adequate. Thus, obtaining one type of protection will often preclude recourse to another type of protection. For this reason, it is necessary to examine the compatibility of each type of protection with each of the other types.

1. Copyright and Trade Secret

When the Copyright Act of 1976 was passed, there was some question as to whether section 301 preempted trade secret protection for items which were granted copyright protection.[200] Section 301 states that

194. *See* Bender, *supra* note 73, at 69-70.

195. 35 U.S.C. § 282 (1982).

196. 35 U.S.C. §§ 102(c), 282 (1982); *see also* Ransburg Electro-Coating Corp. v. Nordson Corp., 293 F. Supp. 448, 484 (N.D. Ill. 1968).

197. *In re* Yarn Processing Patent Validity Litig., 541 F.2d 1127, 1130 (5th Cir. 1976), *cert. denied*, 433 U.S. 910 (1977).

198. Studiengesellschaft Kohle v. Eastman Kodak Co., 616 F.2d 1315, 1325 (5th Cir.), *cert. denied*, 449 U.S. 1014 (1980).

199. Anthony Co. v. Perfection Steel Body Co., 315 F.2d 138, 141 (6th Cir. 1963).

200. Warrington Assocs., Inc. v. Real-Time Eng'g Sys., 522 F. Supp. 367, 369 (N.D. Ill. 1981).

copyright protection preempts all state law remedies which are "equivalent" to the exclusive rights given to a copyright holder in copyrightable subject matter. The problem was whether the rights protected by copyright were equivalent to the rights protected by trade secret. Both House of Representatives Report No. 1307 and the Final Report of the National Commission on New Technological Uses of Copyrighted Works concluded that section 301 does not preempt trade secret protection,[201] and the recent cases are in agreement.[202] The argument against preemption of trade secret protection is that trade secret and copyright really protect different things. Trade secret protects ideas, whereas copyright protects only the expression of ideas. Furthermore, trade secret protects against use and disclosure, whereas copyright only protects against copying and distribution. Since trade secret and copyright protect different things, they are not equivalent; therefore, section 301 does not preempt trade secret protection.

Even if copyright protection does not preempt state trade secret protection altogether, copyright registration can create problems for the protection of software under trade secret law. Registration may destroy the secrecy required for trade secret protection because registered works are deposited with the Copyright Office and the Library of Congress and are available for public inspection.[203]

It may be possible to register a program without destroying secrecy by means of the Copyright Office regulation which allows an exemption from the Library of Congress deposit requirement for a computer program when the program is published only in machine readable form[204] and when identifying materials are submitted to the Copyright Office in lieu of the entire source code. The identifying materials which must be submitted consist of the first and last twenty-five pages of the source code and the page containing the copyright notices. The code can sometimes be arranged so that the first and last twenty-five pages contain only nonsecret information which will not destroy the secrecy of the trade secret, but in the case of short programs, even the identifying materials requirement may require the deposit of all or substantially all of the source code.

Attempts to prevent compromise of trade secret protection *via* copyright registration have also resulted in the registration and deposit of only the ob-

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201. H.R. REP. No. 1307, 96th Cong., 2d Sess. 23-24 (1980); CONTU REPORT, *supra* note 57, at 18.

202. GCA Corp. v. Chance, 217 U.S.P.Q. 718, 722-23 (N.D. Cal. 1981); M. Bryce & Assocs. v. Gladstone, 107 Wis. 2d 241, 256-58, 319 N.W.2d 907, 914-15 (Ct. App. 1982).

203. 17 U.S.C. § 408 (1982). Although the Copyright Act of 1976 does not require registration for copyright protection, *id.* § 302, registration is a prerequisite for an infringement suit, *id.* § 411, and a certificate of registration issued within five years of first publication is prima facie proof of ownership and the validity of the copyright in such a suit. *id.* § 410.

204. Registration of claims to Copyright, 37 C.F.R. § 202.19(c)(5) (1983).

ject code for a program. While the Copyright Office will accept object code for registration, it will only register such programs under the "rule of doubt," which means that the Copyright Office has not examined the work to see if it is copyrightable subject matter.[205] The effect of the rule of doubt is unclear and has not yet been addressed by the courts.

A third method of protecting secrecy consists of a request for secure deposit for software similar to that which has been allowed for standardized tests. Such a request has been denied by the Copyright Office.[206] In summary, the only sure registration of a computer program is the submission of at least the first and last twenty-five pages of the source code, which is likely to disclose enough of the program to destroy the secrecy required for trade secret protection.

2. Patent and Trade Secret

While it seems that copyright and trade secret protection can coexist, at least in theory, for the same material, it is impossible to retain trade secret protection for property which is or has been protected by patent. The disclosure requirements for patent protection are diametrically opposed to the secrecy requirements for trade secret protection.[207] Furthermore, the uncertainty surrounding patent protection for computer software can leave a publisher or programmer without either patent or trade secret protection after a long and expensive application process in which some or all his secrets disclosed in the application (which is supposed to remain confidential) are printed in the public record of the opinions written by the courts when the denial of an application is appealed.[208] Thus, when a patent application is denied, the applicant is caught in a Catch-22 situation—he must either forgo his right to an appeal and give up all hope of ever obtaining a patent, or take his appeal and hope that his secrets will not be disclosed in an opinion or that he will be able to seal the record before the opinion is released.

3. Copyright and Patent

Although there is little or no discussion by the courts or the commentators concerning the interrelationship between copyright and patent protection, there seems to be no impediment to the consistency of these two types of protection for computer software. The two types of protection would protect different parts of the software—patent protection would cover the process which the software contained while copyright would protect the expression of the idea embodied in the software—but none of the requirements for either type of protection would preclude the existence of any of the requirements for the other type of protection. This com-

205. COPYRIGHT OFFICE CIRCULAR R 61 (July 1983).
206. 43 Fed. Reg. 765 (Jan. 4, 1978).
207. *See supra* text accompanying notes 91-98 & notes 178-82.
208. *See supra* text accompanying notes 183-89.

bination of protection would probably not give software that is patentable any greater protection than would patent protection alone because, except for the period of protection, patent protection is much broader than copyright protection. On the other hand, the chances of winning a copyright infringement action currently seem to be better than the chances of winning a patent infringement action, and the expense involved is much less.

In summary, it appears that there are serious questions as to whether trade secret protection can coexist with either copyright or patent protection for software. It appears that copyright and patent protection can coexist for software. The majority of software, however, does not qualify for patent protection, and therefore most software may be limited to a single form of protection under the current state of the law.

III. Complaints about the Current State of Affairs in the Area of Software Protection

Any attempt to draft legislation to solve the problems with the current state of the law on software protection should be preceded by a careful evaluation of the wishes and needs of the people for whom the protection is intended and the wishes and needs of the people who use the software and provide a market for it. For this reason, the next section will consider the interests of programmers, developers, and publishers. The following section will consider the reasons offered by those who copy software and attempt to identify which of their needs and desires are legitimate and should be recognized in software protection legislation.

A. Complaints of Programmers, Developers, and Publishers[209]

The primary complaint of programmers, developers, and publishers is easily identified—they assert that regardless of the protection theoretically available under the current law, it affords them little or no practical protection. In their view, software piracy is rampant and the law is doing a terrible job of stopping it.

Copyright does nothing to protect the ideas, algorithms and logic embodied in their programs. Patent protection is too expensive and too hard to get. Trade secret protection requires the owner to monitor the use of the program by licensees to make sure they are not misusing or disclosing the secret, and that is an impossibility when software is mass-licensed to hundreds or maybe even thousands of users. In addition, the uncertainty of the effect of copyright law on trade secret protection and the lack of a good means to protect secrecy in the registration process force them either to weaken their copyright protection by refusing to register at all

209. Letter from Mark Pelczarski, President of Penguin Software, to Mary Jensen (Nov. 17, 1983) (discussing complaints of programmers, developers, and publishers).

or by registering only the object code under the "rule of doubt," or to further weaken their trade secret protection by depositing at least fifty pages of source code with the Copyright Office. Similarly, the uncertainty of obtaining patent protection and the risk of disclosure in appeals (even where protection is ultimatley denied) force them to risk loss of trade secret protection in order to pursue the mere possibility of patent protection. In short, none of the various systems provides enough protection, and any attempt to combine protection schemes carries with it the risk of jeopardizing what little protection is available.

Furthermore, even if there is a clear violation of rights in software conferred by the existing law, it is prohibitively expensive to enforce such rights through litigation. The collection of evidence is too difficult,[210] the law is too uncertain, and the number of reasonably competent lawyers in the area is too small. All of these factors make litigation very expensive, and the damage awards when a case is won rarely even meet the cost of litigation.[211] The criminal sections of the copyright law and the Fair Trade Practices Act do little to mitigate the financial burdens of enforcement because the Justice Department will not prosecute any case which involves less than $100,000 of pirated software.[212]

In the face of current legal remedies which seem almost useless, programmers, developers, and publishers have resorted to self-help in an attempt to stop copying. They have resorted to software locks and hardware locks which make software more difficult to copy,[213] allow it to run on only one machine, or cause it to self-destruct when an attempt is made to copy it. But even these measures are not working. Anything that can be encrypted by a human being can be unencrypted by a human being and a computer.[214]

Software developers need reasonable and economically feasible access to the legal system to enforce the rights given to them under any software protection legislation. Severe penalties, including punitive damages and liberal attorney fee awards, would help to make such cases economically feasible. Large awards would also provide the financing to offer big rewards to users, dealers and others in the industry who have evidence which would help developers prove their cases. Severe penalties would also encourage prosecutors to enforce the criminal sections of a software protection law.

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210. *See* Woodhead, *The Software Pirates Possess Very Big Teaspoons*, INFOWORLD, Mar. 22, 1982, at 52, 57.

211.. Grout, *Piracy—A Serious Threat or an Unfounded Fear?*, MICROCOMPUTING, July 1982, at 76, 78-79.

212. Wollman, *Software Piracy and Protection*, POPULAR COMPUTING, Apr. 1982, at 98, 99.

213. *See* Shea, *Thwarting Software Pirates: New Encryption Products*, INFOWORLD, Sept. 27, 1982, at 10.

214. *See* Stein, *License to Own Computers—Projections of a Paranoid?*, INFOWORLD, Oct. 3, 1983, at 37.

B. Why Do People Copy Software?

There are two basic types of people who copy software: the bootlegger who copies to resell at a profit and the person who copies programs for his own use or for a friend.[215] The bootlegger copies in order to make a bigger profit by selling a product for which he has expended no development costs. He reaps the benefits of the developer's work without paying the developer for what he has taken. Bootleggers threaten the incentive of the developers and programmers to create, and the bootleggers' activities offer no real benefits to the public which can be balanced against the public's interest in giving programmers and developers an economic incentive to create.[216] Legislation to protect software must provide practical protection to developers and programmers against the actions of bootleggers.

The consumer's reasons for copying differ from those of the bootlegger. A survey of recent microcomputer literature reveals at least eight reasons why consumers copy software; these reasons range from providing backup protection for easily destroyed software on floppy disks to obtaining revenge for the lack of support, poor quality and restrictive licensing tactics used in mass marketing software today.

Some users copy software in order to remove copy protection schemes so that they can list the code and learn from it. As one user in a recent publication lamented: "Perhaps the early software wasn't entirely bug free nor particularly elegant, but it was entirely open to the user . . . to learn from . . . ."[217] Copying for nonprofit educational purposes which does not unduely hamper incentives for creativity has never been the type of copying which the law has sought to prohibit.[218] The copy protection schemes which programmers and developers have resorted to in default of adequate legal protection, however, have virtually eliminated the educational value of software for those seeking to become computer literate. The purpose of the Copyright and Patent Clause of the United States Constitution was to further the public good[219] by encouraging the creation of works and things which would ultimately make the benefit of the authors' and inventors' ability available to all. In order to make the works of the inventors available to the public, the patent laws require the inventor to disclose information concerning his invention in his patent applica-

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215. *See* Remer, *Legal Expert on Software Theft: The Piranhas Versus True Pirates*, INFOWORLD, Mar. 22, 1982, at 40, 40.

216. The dealers who make bootleg copies of software to bundle with hardware packages to make the deal look better and encourage hardware sales fit within this category. *See* Zoso, *Expanding Software Libraries for Almost Nothing*, INFOWORLD, May 2, 1983, at 54.

217. Easterling, *The Issue Is Really Consumers' Rights, Not Piracy*, INFOWORLD Mar. 22, 1982, at 56.

218. For a discussion of the fair use doctrine, see *supra* text accompanying notes 44-47.

219. Twentieth Century Music Corp. v. Aiken, 422 U.S. 151, 156 (1975).

tion, which is a public record open to inspection.[220] The copyright law has never required disclosure in exchange for protection because, until very recently, the form in which copyrightable works were published was always understandable to the human eye or ear. Since the primary purpose of most works protected by copyright is still direct communication with human beings, there is usually no need to require disclosure to allow people to learn from the works—the works are already in a form that can be seen or heard directly by humans because such a format is necessary to achieve their purpose. The primary purpose of software, however, is not to communicate with people, but to instruct a machine to do what some person wants it to do. There is no inherent need in software, as in other copyrightable works, to publish it in a form that can be directly seen or heard by humans and which will allow people to learn from it. Since there is no such inherent need with respect to software, if the public education purpose of the Copyright and Patent Clause is to be fulfilled by the protection of software as a form of intellectual property, the law must impose a disclosure requirement in any software protection scheme just as it has imposed a disclosure requirement in the patent scheme.

Another reason for copying software is that copying software is a necessary step in modifying it. One of the primary advantages of the microcomputer is the ease with which a machine may be custom tailored to the needs of a particular user through minor modifications of software.[221] The sheer flexibility of microcomputing has led to an ocean of peripheral devices designed to meet a wide variety of specific needs. The speed at which the microcomputer industry is advancing makes it virtually impossible for software developers to ensure that their software will be compatible with the myriad of peripherals existing when the software is published, much less the new ones which will continue to flood the market. The software-peripheral incompatibility problem increases the user's need to personally modify the software which he possesses and, therefore, increases his need to copy software in the modification process.[222] Software also frequently needs to be modified because, unfortunately, programs are often sold with bugs or problems which the sellers are either unable or unwilling to fix; therefore, the buyer needs to have access to the software to modify and debug it.[223] All of the problems created by the users' need to modify would be eased, if not cured, by

220. 35 U.S.C. § 112 (1982); Rule of Practice in Patent Cases, 37 C.F.R. §§ 1.11-.15 (1983).

221. *See* Immel, *Is Software Piracy Justified?*, POPULAR COMPUTING, July 1983, at 48, 54; Koetke, *Ongoing Search for Software*, KILOBAUD MICROCOMPUTING, Mar. 1982, at 172, 174.

222. *See* Militello, *Open Discussion—Seeing Double Red*, SOFTALK, July 1983, at 38; Shannon, *Open Discussion—Shakedown Time*, SOFTALK, Sept. 1983, at 35.

223. *See* Freiberger, *Investigation Culls Unorthodox Views from the Pirate's Cove*, INFOWORLD, Mar. 22, 1982, at 45, 45.

provisions in a software protection law requiring disclosure by the developer of the software so that others could learn from it. The same openness which would allow learning, *i.e.*, disclosure of source code, would also give the user the necessary information to modify the software. Disclosure of the source code would also discourage the many copy protection schemes used today which make modification inconvenient and difficult.

A third reason for permitting consumer copying is also an inherent result of the hardware design and marketing practices used in the microcomputer industry. Programs are invariably sold on floppy disks which hold a limited amount of data. If a user's application requires access to large amounts of data or rapid access time when using the program, he must find a way to transfer the program from the single density floppy disks to double density floppy disks or hard disks. This transfer cannot be accomplished without copying the program.[224] This problem can also be reduced or solved by provisions in software protection legislation, such as disclosure requirements, which discourage copy protection schemes.

Another critical problem for users is the ease with which software can be inadvertently destroyed. It is very easy to write data on top of the software, thereby destroying it, simply by making a typographical error in the command which writes the data file. Moreover, the less experienced the user, the more likely this type of error is to occur. This phenomenon has created serious problems in schools where the users are often very young children.[225] In addition, any data, including any type of software, which is stored on any type of disk is subject to the many hazards of disk storage. Backup copies of everything are desirable and often a necessity.[226] The obvious solution to the easily destructible storage medium problem is to permit users to make backup copies of everything so that a user has another usable copy if the copy currently in use is inadvertently destroyed. Users should not be permitted to use these backups on additional machines while the original is in use or to sell or give away the backups while retaining the originals or vice versa; backups are meant to be used only in case the original copy becomes unusable. Legislation which discourages the copy protection schemes currently employed by programmers and developers[227] would remove the problems facing users in making backup copies or trying to get developers to supply backups for copy protected software.

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224. Freiberger, *Pirates Bedevil Angry and Frustrated Software Vendors*, INFOWORLD, Mar. 22, 1982, at 31, 38; Immel, *supra* note 221, at 54; Smith, *Open Discussion—Caught in a Bind*, SOFTALK, Apr. 1983, at 46, 46-48.

225. Hoover & Gould, *The Pirating of Computer Programs: A Survey of Software Producers*, EDUC. TECH., Oct. 1982, at 23, 24.

226. *See* Houston, *Open Discussion—Nibble Quibble*, SOFTALK, Mar. 1983, at 36.

227. *See supra* text accompanying notes 209-14.

The remaining reasons offered by users for copying software seem less deserving of recognition and protection than the reasons discussed thus far. Three of the remaining reasons relate to convenience and monetary savings. First, many business users think that it is unreasonable to expect them to purchase a separate copy of each software package they use for each machine they own.[228] While multicopy discounts similar to volume discounts for books, tools, and equipment would probably be desirable, this complaint of users seems to be a supply/demand market type problem, and its solution should probably be left to the free market. Educational buyers are already making some progress in obtaining discounts for volume buying or authorized copying for multimachine use from dealers and developers.[229]

The next justification users offer for copying software is that there are no reasonable means available for evaluating a piece of software to see if it meets a user's needs before he pays a substantial sum[230] for a software package which is not even warranted to boot up and run.[231] While this problem seems to be at least partially a problem that should be resolved in the market, the usual disclaimer of all warranties, including the implied warranty of merchantibility, is unconscionable in a consumer mass market such as the current software market. Legislation which extends protection to software should demand at least a minimum of commercial responsibility in return for the protection by prohibiting such disclaimers. Once unconscionable disclaimers have been prohibited, the remainder of the presale evaluation problem should be left to be worked out in the free marketplace. The battle on this issue has already resulted in software rental firms which rent software for evaluation[232] and marketing schemes where the seller requires only a nominal sale price and requests

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228. Freiberger, *supra* note 223, at 45; Immel, *supra* note 221, at 50-51.

229. *See* Zientara, *Betamax Offers Software-License Plan to Schools*, INFOWORLD, Oct. 24, 1983, at 5.

230. *See Unabashed Pirate Summarizes His Creed, Divulges His Source*, INFOWORLD, Mar. 22, 1982, at 35.

231. The standard disclaimer of warranty on software packages reads as follows:

> [Developer] makes no warranties, either express or implied, with respect to this manual or with respect to the software described in this manual, its quality, performance, merchantability, or fitness for any particular purpose. [Developer's] software is sold or licensed "as is." The entire risk as to its quality and performance is with the buyer. Should the programs prove defective following their purchase, the buyer, (and not [Developer], its distributor, or its retailer) assumes the entire cost of all necessary servicing, repair, or correction and any incidental or consequential damages. In no event will [Developer] be liable for direct, indirect, incidental, or consequential damages resulting from any defect in the software, even if [Developer] has been advised of the possibility of such damages.

APPLE COMPUTER INC., THE DOS MANUAL front inside cover (1981).

232. These rental agents often offer a rebate on rental if the software is purchased. *See* Wierzbicki, *Peachtree and MicroPro Sue Software-Rental Firm*, INFOWORLD, Oct. 24, 1983, at 6.

a more substantial contribution if the buyer finds the software useful.[233]

When the sole justification offered for copying is saving money,[234] the argument for recognizing and protecting such a justification is not convincing and should receive little or no consideration in a legislative scheme to protect software. Intellectual property protection schemes are based upon the theory that securing a financial reward for the developer will create an incentive for persons to develop products. Any recognition of copying solely to save money for the users of the product, beyond allowing backup copies to prevent an intolerable continuing financial burden on the user, seriously undermines this theory. Proper pricing levels ought to be left to be worked out in the free market.

Users sometimes resort to copying as a means of revenge upon developers for marketing techniques which result in high prices, no warranties, no support, and poor quality software. The users claim that they cannot afford to pursue their complaints through legal channels and that this type of revenge is the only way they have of retaliating against the unjust practices of software developers.[235] Although users have a legitimate complaint that the cost of pursuing a legal solution is so great as to be no solution at all, revenge through copying is not the solution. Software protection legislation ought to provide reasonable and practical remedies to users against developers and others who do not live up to their contractual and warranty obligations. Such remedies are a fair price for the developers to pay in exchange for a practical remedy against unauthorized copiers. From the users' point of view, provisions for liberal attorney fees ought to enable them to solve their disputes with developers through legal action and should help to eliminate this cause for copying.

The final reason for copying described in recent microcomputer literature is the challenge involved in breaking a copy protection scheme. As long as software remains copy protected, this reason for copying software will remain. The disclosure provisions suggested above would remove the incentive for copy protection and would probably indirectly result in a reduction of copying for the sake of challenge.

In summary, software protection legislation can probably eliminate most of the problems with software protection and copying under the current law while furthering the legitimate interests of both developers and users. Software protection legislation can achieve this by (1) providing for disclosure of source code in accord with the open disclosure theories of intellectual property protection under the Copyright and Patent Clause of the Constitution; (2) discouraging copy protection schemes; (3) pro-

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233. *See* Markoff, *Word Processing Package Costs $10 Under New Marketing Scheme*, INFOWORLD, Sept. 19, 1983, at 3.

234. *See* Jones, *Open Discussion—A "True" Pirate Speaks*, SOFTALK, June 1983, at 44.

235. *See* Pournelle, *Software Publishers vs. Piracy*, INFOWORLD, June 7, 1982, at 31.

hibiting disclaimers of warranty of merchantibility and fitness; and (4) providing economically feasible resort to the legal system for both developers and users for dispute resolution. Severe penalties, including punitive damages and liberal attorney fee awards in cases where a developer or prosecutor successfully prosecutes illegal copying of software, should at least reduce copying for profit and make prosecution of such cases feasible.

Mary Brandt Jensen

APPENDIX

A Suggested Softright Act*

§ 101. **Definitions**

As used in this Act, the following terms and their variant forms shall have the following meanings:

(a) "Copies" are material objects in which software is fixed by any method now known or later developed and from which the software can be—

(i) perceived or otherwise communicated to a human being, either directly or with the aid of a machine, device or other software;

(ii) reproduced; or

(iii) used directly or with the aid of a machine, device, or other software to cause a computer to perform an operation. The term "copies" includes the material object in which the software is first fixed and original copies of the software.

(b) Software is "created" when it is fixed in a copy for the first time. When software is prepared over a period of time, the portion of it that has been fixed in a copy at any particular time constitutes the software as of that time. When the software has been prepared in different versions, each version constitutes a separate piece of software.

(c) "Derivative software" is software based upon one or more preexisting pieces of software, such as a translation of software into another source language, documentation describing software, or any other form in which software may be recast, transformed, or adapted.

(d) "Distribution" is the transfer of a copy of any software by sale, lease, license, gift or any other means of conveyance with or without consideration.

(e) "Distribution for profit" is the transfer of a copy of any software by sale, lease, license, or any other means of conveyance in exchange for consideration.

(f) Software is "fixed" in a tangible medium of storage when its embodiment in a copy, by or under the authority of the author,

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* The form and much of the language of this Act are based on the Copyright Act of 1976, Pub. L. No. 94-553, 90 Stat. 2541. The substance is, however, different in many respects from the Copyright Act of 1976.

is sufficiently permanent or stable to permit it to be perceived or otherwise communicated to a human being, either directly or with the aid of a machine, device or other software, reproduced or used directly or with the aid of a machine, device, or other software to cause a computer to perform an operation.

(g) The terms "including" and "such as" are illustrative and not limitative.

(h) A "lawful possessor" is any person who has acquired a copy of any software by creating it, by hiring another person to create it as software made for hire, or by means of any lawful distribution.

(i) An "original copy" is a copy of software received in a lawful distribution. It does not include any copy made under the provisions of sections 107 and 108.

(j) "Original software" is software which is independently created and is not substantially similar to any currently registered Class *A* software.

(k) "Private use" is any use other than for distribution.

(l) "Software" is any computer program, whether in source, object, or machine code, or any documentation describing a computer program, such as flow charts, manuals, and user's aids.

(m) "Software made for hire" is—

(1) software prepared by an employee within the scope of his or her employment, or

(2) software specially ordered or commissioned, if the parties expressly agree in a written instrument signed by them that the software shall be considered to be software made for hire.

(n) "Software of the United States Government" is software prepared by an officer or employee of the United States Government as part of that person's official duties.

(o) "Softright owner," with respect to any one of the exclusive rights comprised in a softright, refers to the owner of that particular right.

(p) "Source code" is the text of a computer program in the highest level language in which it was composed, such as BASIC or PASCAL. Source code includes assembler language if the program was originally composed in assembler language.

(q) "Substantially similar software" is software which uses the same ideas, algorithms, and techniques to perform the same or a similar task or to produce the same or similar results as the

software to which it is being compared. Software which has qualified as Class *A* software is presumed not be be substantially similar to any preexisting software.

(r) A "transfer of softright ownership" is an assignment, mortgage, exclusive license, or any other conveyance, alienation, or hypothecation of a softright or of any of the exclusive rights comprised in a softright, whether or not it is limited in time or place of effect, but not including a nonexclusive license.

§ 102. **Subject matter of softright: In general**

(a) Softright protection subsists, in accordance with this Act, in original software fixed in any tangible storage medium, now known or later developed, subject to the following conditions:

(1) a softright notice in compliance with section 301 is affixed to the software;

(2) the software is registered in compliance with sections 401 through 403 before it is distributed for profit;

(3) a softright registration number is affixed to the software if it is distributed for profit;

(4) after the software is classified as Class *B* software, the softright owner provides source code to lawful possessors of the software who request it, provided, a reasonable fee suffient to cover the costs of handling such requests may be charged for this service, which obligation can be satisfied by distributing the program in listable source code format;

(5) neither the softright owner nor his agents shall attempt to disclaim liability under redhibition or the implied warranties of fitness and merchantability; and

(6) the preceding conditions are subject to the provisions of section 201 if the software is created by an author who is domiciled in a country other than the United States.

(b) Softright protection shall be divided into two categories— Class *A* protection and Class *B* protection:

(1) Class *A* protection shall be extended to software which is innovative. To be considered innovative, the software must—

(i) use ideas, algorithms, or techniques or a combination of ideas, algorithms, and techniques not generally known or used in the software industry;

(ii) produce a result not produced by any existing software; or

(iii) automate a task which has not been automated by any existing software.

(2) Class *B* protection shall be extended to software—

(i) which was originally classified as Class *A* software after the period of Class *A* protection has expired, or

(ii) which was independently created and would not infringe upon the exclusive rights of any currently registered Class *A* software.

Comments

(a) Refer to section 105 for the exclusive rights extended to Class *A* and Class *B* software.

(b) The first and third conditions are designed to make the information necessary to check proper registration readily available on software distributed for profit.

(c) The second condition is designed to encourage registration so that the Softright Office will have a reasonably complete file of preexisting software with which to compare applications for Class *A* protection to ensure that Class *A* protection will not be granted for software substantially similar to preexisting software.

(d) The fourth condition is designed to ensure disclosure which will allow people to learn from software and to modify it. It is also designed to encourage marketing of Class *B* software, which will include the majority of software on the market at any given time, in uncopyprotected formats which will ease modification and the making of backup copies. Class *A* software is exempted from this condition because it is recognized that secrecy is vital to the head start type of protection extended to innovative software. This does not significantly compromise the goals of this condition since all Class *A* software becomes Class *B* software after it has been on the market for one year.

(e) The dual classification scheme allows greater protection for innovative software, thereby providing an added incentive for creative efforts.

(f) The requirements that software must meet to qualify as "innovative" are less stringent than the patent requirement of novelty; therefore, more programs and other software should be able to meet these requirements than have been able to meet the patent requirement. These requirements are based upon the trade secret requirement of novelty because secrecy is necessary during the Class *A* protection period.

§ 103. **Subject matter of softright: Derivative software**

(a) The subject matter of softright as described in section 102 includes derivative software, but protection for software employing preexisting material in which softright subsists does not extend to any part of the software in which such material has been used unlawfully.

(b) The softright in derivative software extends only to the material contributed by the author of such derivative software, as distinguished from the preexisting material employed in the software, and does not imply any exclusive right in the preexisting material. The softright in such software is independent of, and does not affect or enlarge the scope, duration, ownership, or subsistence of, any softright protection in the preexisting material.

§ 104. **Subject matter of softright: United States government software**

Softright protection under this Act is not available for any work of the United States Government, but the United States Government is not precluded from receiving or holding softrights transferred to it by assignment, bequest, or otherwise.

§ 105. **Exclusive rights in softrighted software**

(a) Subject to sections 106 throught 109, the owner of softright in Class *A* software under this Act has the exclusive right to do and to authorize any of the following:

(1) to reproduce the softrighted software in copies;

(2) to distribute copies of the softrighted software or software which is substantially similar to the innovative aspect of the Class *A* software;

(3) to distribute derivative software based upon the softrighted software.

(b) Subject to sections 106 through 109, the owner of softright in Class *B* software under this Act has the exclusive right to do and to authorize any of the following:

(1) to reproduce the softrighted software in copies;

(2) to distribute copies of the softrighted software;

(3) to distribute derivative software based upon the softrighted software.

Comments

The advantage of Class *A* protection is that it allows the softright owner to prevent substantially similar software from being marketed at all during the heightened protection period. This will give innovative software a one year period in which to establish a market free of competition from similar software. *See* section 501. The extra market share this protection should provide for innovative software will encourage efforts to create innovative software.

§ 106. **Limitations on exclusive rights: Fair use**

Notwithstanding the provisions of section 105, the fair use of softrighted software, including such use by reproduction in copies, for purposes such as criticism, comment, news reporting, teaching, scholarship, or research, is not an infringment of softright. In determining whether the use of software in any particular case is a fair use, the factors to be considered shall include—

(a) the purpose and character of the use, including whether such use is of a commercial nature or is for nonprofit educational purposes;

(b) whether the software being used is a computer program or documentation describing a computer program;

(c) the amount and substantiality of the portion used in relation to the softrighted piece as a whole; and

(d) the effect of the use upon the potential market for or value of the softrighted software.

Comments

This section is not intended to allow teachers to make multiple copies of entire programs for multimachine use in the classroom because such copying would substantially reduce the market for educational software, decreasing the profits and therefore the incentive to create good educational software.

§ 107. **Limitation on exclusive rights: Distribution by libraries and archives**

(a) Notwithstanding the provisions of section 105, it is not an infringement of softright for a library or archives, or any of its employees acting within the scope of their employment, to reproduce no more than one copy of a piece of software currently in the collection of the library or archives, or to distribute such copy, under the conditions specified by this section if—

(1) the reproduction is made without any purpose of direct or indirect commercial advantage;

(2) the collections of the library or archives are—

(i) open to the public, or

(ii) available not only to researchers affiliated with the library or archives or with the institution of which it is a part, but also to other persons doing research in the specialized field; and

(3) the reproduction or distribution of the software includes a notice of softright.

(b) The rights of reproduction and distribution under this section apply to a copy of softrighted software duplicated solely for purposes of preservation and security or for any of the following purposes:

(1) for deposit for research use in another library or archives of the type described in subsection (a) (2) of this section if the library or archives has, after a reasonable effort, determined that an unused copy cannot be obtained at a fair price;

(2) for replacement of a copy which is damaged, deteriorating, destroyed, lost, or stolen.

(c) The rights of reproduction and distribution under this section apply to a copy of softrighted software duplicated by a library or archives solely for purposes of lending to its patrons, provided that the total number of copies in circulation at any one time does not exceed the number of original copies which the library has lawfully acquired.

(d) Nothing in this section—

(1) shall be construed to impose liability for softright infringement upon a library or archives or its employees for the unsupervised use of reproducing equipment located on it premises, provided that such equipment displays a notice that the making of a copy may be subject to the softright law;

(2) excuses a person who uses such reproducing equipment from liability for softright infringement for any such act, or for any later use of such copy if it exceeds fair use as provided by section 106;

(3) in any way affects the right of fair use as provided by section 106.

§ 108. **Limitations on exclusive rights: Rights of a lawful possessor of a copy of softrighted software**

(a) Notwithstanding the provisions of section 105, it is not an infringement for a lawful possessor of a copy of softrighted software to—

(1) create derivative software based upon the softrighted software in his possession for private use, or

(2) reproduce the software in copies for any of the following purposes or similar purposes:

(i) modification of the software for private use;

(ii) transfer of the software to a different storage medium;

(iii) archiving copies to replace the original copy should it become damaged or destroyed;

(iv) any other purpose authorized by the softright owner or his agents.

(b) Nothing in subsection (a) of this section shall be interpreted to give a lawful possessor who creates derivative computer programs the right to distribute such derivative programs without the consent of the softright owner of the software upon which the derivative program is based. A lawful possessor who creates derivative documentation shall have the right to distribute such derivative documentation on a nonprofit basis, in letters, newsletters, periodicals and other forms of communication. A lawful possessor who creates derivative documentation shall not have the right to distribute such derivative documentation for profit without the consent of the softright owner of the software upon which the derivative documentation is based.

(c) Nothing in subsection (a) of this section shall be interpreted to give a lawful possessor the right to distribute any copy of softrighted software made under the provisions of that subsection.

(d) Nothing in this section shall be construed to prevent a lawful possessor from hiring another person to create derivative software for his private use. Such derivative software shall become the property of the lawful possessor, and neither the lawful possessor nor the author of the derivative software shall have the right to distribute it except in compliance with subsection (b) of this section.

(e) The rights granted to a lawful possessor by this section may not be limited by contract.

Comments

(a) This section recognizes and permits the copying of software in those instances in which it is necessary for the efficient use of computers and software which is mass marketed to consumers with customized needs and unstandardized equipment.

(b) The provisions on distribution are designed to ensure that a softright owner receives a fair return for his efforts without stifling the free exchange of information among users.

§ 109. **Limitations on exclusive rights: Transfer of an original copy by a lawful possessor**

(a) Nothwithstanding the provisions of section 105, the lawful possessor of an original copy of softrighted software is entitled to sell or otherwise transfer an original copy of softrighted software without the authority of the softright owner.

(b) Copies or derivative software made in accordance with section 108 may not be transferred except in accordance with the provisions of that section.

(c) Upon the sale or other transfer of an original copy of softrighted software, the lawful possessor shall destroy all copies or derivative software made under the provisions of section 108 unless he retains at least one original copy of the software in his lawful possession.

Comments

This section is designed to prevent a user from selling the original copies and retaining the "backup copies" for his own use while allowing the user who wishes to upgrade or change software completely to recoup part of his investment by selling the software he no longer intends to use.

§ 201. **Works created by authors domiciled in a country other than the United States**

(a) Software which has never been distributed is subject to protection in accordance with this Act without regard to the nationality or domicile of the author.

(b) The conditions stated in subsections(a) (1)-(3) of section 102 shall be regarded as satisfied if the universal copyright symbol, "c", is affixed to the software and the software was first distributed in and the author is domiciled in a country which is—

(1) a party to the Universal Copyright Convention, or

(2) covered by a Presidential copyright or softright proclamation.

(c) If the software is created by an author domiciled in a country which is a party to the Universal Copyright Convention and the software was first distributed in such a country, the software shall be protected by the provisions of this Act for the period stated by this Act. When the period stated by this Act has expired, the software shall be protected by the law of copyright as it existed with respect to software on the date this Act was enacted until the minimum term allowed by the Universal Copyright Convention has expired.

(d) Whenever the President finds that a particular foreign nation extends intellectual property protection to software by authors who are nationals or domiciliaries of the United States or to software that is first published in the United States on substantially the same basis as that on which the foreign nation extends protection to software of its own nationals and domiciliaries and software first published in that nation, the President may by proclamation extend protection under this Act to software of which one or more of the authors is, on the date of first distribution, a national, domiciliary, or sovereign authority of that nation, or which was first distributed in that nation. The President may revise, sus-

pend, or revoke any such proclamation or impose any conditions or limitaions on protection under a proclamation.

Comments

This section is designed to meet the requirements of compliance with the copyright treaties to which the United States is a party, since many other countries attempt to protect software through copyright.

§ 301. **Notice of softright**

(a) General requirement—All copies of software protected by this Act shall have affixed to them a notice of softright protection in accordance with the provisions of this section.

(b) Form of notice—The notice appearing on the copies shall consist of the following three elements:

(1) the symbol "(S)" (the letter "S" enclosed in parentheses), or the word "Softright";

(2) the year of first distribution or the year of creation if the software has never been distributed; and

(3) the name of the owner of softright in the software, an abbreviation by which the name can be recognized, or a generally known alternative designation of the owner.

(c) Position of notice—

(1) in the case of a computer program, the notice shall be placed—

(i) in a position which will cause it to be displayed on the first screen when the program is run and on the first page of the source code when it is listed, and

(ii) on the outside surface of the storage medium in which the program is stored in a position and manner which gives reasonable notice of the claim of softright;

(2) in the case of documentation stored on paper, the notice shall be placed on the verso of the title page or on the first page if there is no title page or verso of the title page;

(3) in the case of documentation which is viewed with the aid of a machine, the notice shall be placed so that it appears on the first screen which is viewed;

(4) in the case of any software not described above, the notice shall be placed on the software in a manner and location which gives reasonable notice of the claim of softright;

(5) additional notices may be added in any location or position.

§ 302. **Effect of distribution without notice**

(a) Effect on validity of softright—The omission of the softright notice on distributed copies of software invalidates the softright and makes the software public domain software, unless—

(1) the notice has been omitted from no more than a relatively small number of copies and a reasonable effort is made to add notice to all copies that are distributed after the omission has been discovered, or

(2) the notice has been omitted in violation of an express requirement in writing that, as a condition of the softright owner's authorization of the distribution of copies, the distributed copies bear the prescribed notice.

(b) Effect of omission on innocent infringers—Any person who innocently infringes a softright, in reliance upon a copy distributed by or under an authorization from the softright owner from which the softright notice has been omitted or removed, incurs no liability for actual or statutory damages under section 704 for any infringing acts committed before he receives notice that registration for the software has been made under sections 401 through 403, if such person proves that he or she was misled by the omission of notice.

(c) Removal of notice—Protection under this title is not affected by the removal, destruction, or obliteration of the notice, without the authorization of the softright owner, from any distributed copies.

Comments

This section is designed to ensure that all users and potential infringers are notified when software is protected by softright.

§ 303. **Notice of softright: Error in name or date**

(a) Error in name—Where the person named in the softright notice on copies distributed by authority of the softright owner is not the owner of softright, the validity and ownership of the softright are not affected. In such a case, however, any person who innocently begins an undertaking that infringes the softright has a complete defense to any action for such infringement if such person proves that he or she was misled by the notice and began the undertaking in good faith under a purported transfer or license from the person named therein, unless before the undertaking was begun—

(1) registration for the software had been made in the name of the owner of softright, or

(2) a document executed by the person named in the notice and showing the ownership of the copyright had been recorded.

The person named in the notice is liable to account to the softright owner for all receipts from transfers or licenses purportedly made under the softright by the person named in the notice.

(b) Error in date—When the year date in the notice on copies distributed by authority of the softright owner is earlier than the year in which distribution first occurred, any period computed from the year of first distribution under section 502 is to be computed from the year date in the notice. Where the year date in the notice on copies distributed by authority of the softright owner is more than one year later than the year in which distribution first occurred, the software is considered to have been distributed without any notice and is governed by the provisions of section 302.

(c) Omission of name or date—Where copies distributed by authority of the copyright owner contain no name or no date that could reasonably be considered a part of the notice, the software is considered to have been published without any notice and is governed by the provisions of section 302.

§ 401. **Softright registration in general**

(a) Mandatory registration for software distributed for profit — Distribution of software for profit prior to registration is a violation of this Act. Each distributed copy shall constitute a separate violation.

(b) Application for registration: Class *A* software—An application for softright registration for Class *A* software is made by submitting a completed application and fee in accordance with sections 402 and 908 to the Softright Office, together with the following materials:

(1) a statement describing the innovative aspect of the software for which Class *A* protection is sought, and

(2) (i) in the case of a computer program, a complete listing of the source code and all accompanying documentation including a flowchart showing the logical structure and flow of control, or

(ii) in the case of documentation, a complete listing or eye readable copy of the software or sound recording of the software if it is to be distributed as a sound recording.

A Class *A* application shall be filed six months prior to the date of first distribution. All materials submitted by a Class *A* applicant are to be considered confidential and are to be kept under secure deposit for the period of Class *A* protection if it is granted. If Class *A* protection is denied, the application shall be considered for Class *B* protection.

(c) Application for registration: Class *B* software—An application for softright registration for Class *B* software is made by submitting a com-

pleted application and fee in accordance with sections 402 and 908 to the Softright Office, together with the following materials:

(1) in the case of a computer program, a complete listing of the source code and all accompanying documentation including a flowchart showing the logical structure and flow of control, and

(2) in the case of documentation, a complete listing or eye readable copy of the software or a complete sound recording of the software if it is to be distributed as a sound recording.

An application for softright registration may be made in accordance with this subsection even though the softright owner has no current intention to distribute the software.

(d) Optional deposit of public domain software—The Softright Office is authorized to accept deposits of source code for public domain software by the author of such software when accompanied by a statement of intention to donate the software to the public domain in accordance with section 405.

Comments

(a) Subsection (a) is designed to ensure that software is registered so that the Softright Office has a reasonably complete collection of software with which to compare applications for Class *A* software.

(b) The requirement that source code, documentation, and flow charts be submitted in an application should provide the Softright Office with sufficient information to compare Class *A* applications with the preexisting software on file and to find any substantial similarity which exists.

(c) The Softright Office may not grant provisional Class *A* registration before examining the software because Class *A* protection restricts the rights of others to apply for either Class *A* or Class *B* protection. Since provisional Class *A* registration is not viable, the Softright Office needs a substantial period of time in which to evaluate the software before distribution begins. Software takes a long time to develop and even longer to debug, and any innovative aspects should be sufficiently developed six months before the intended distribution date to allow the Softright Office time to evaluate it.

(d) Secure deposit for Class *A* software is essential to ensure that it gets the head start in the market which Class *A* protection is designed to provide.

(e) The effect of making distribution for profit without registration a violation of the Act is to subject the distributor to criminal penalties for violation of the Act under section 707(f) which imposes a fine of $25,000 for each violation.

(f) The sanction for failing to submit the proper materials for Class

A registration six months before the date of first distribution is either the delay of first distribution or the forfeiture of Class *A* protection.

(g) Because the period of Class *A* protection is so short and any delay in distribution caused by an appeal would prevent the marketing advantage created by Class *A* protection, there is no appeal from a denial of Class *A* protection. Since there is no appeal from a denial of Class *A* protection and since a denied Class *A* application is automatically converted to a Class *B* application, there is no reason to keep a denied Class *A* application confidential.

§ 402. **Application for softright registration**

The application for softright registration shall be made on a form prescribed by the Register of Softrights. This form shall include—

(a) the name and address of the softright claimant;

(b) the name and nationality or domicile of the author or authors, and, if one or more of the authors is dead, the dates of their deaths;

(c) in the case of a software made for hire, a statement that it was made for hire;

(d) a brief statement of how the claimant obtained ownership of the softright if the softright claimant is not the author;

(e) the title of the software, together with any previous or alternative titles under which the software has been or can be identified;

(f) in the case of derivative software, an identification of any preexisting software on which it is based, and a brief, general statement of the additional material covered by the softright claim being registered;

(g) in the case of derivative software, a signed authorization from the softright owner of the software on which the derivative software is based or a statement that the softright protection on the base software has expired or otherwise has been lifted; and

(h) any other information regarded by the Register of Softrights as bearing upon the preparation or identification of the software or the existence, ownership, or duration of the softright.

§ 403. **Registration of claim and issuance of certificate**

(a) Within five working days of receipt of a Class *B* application, the Register of Softrights shall issue a provisional certificate of registration to the applicant containing the information given in the application and the number and date of the registration. This provisional certificate of registration shall allow the applicant to begin distribution of the software

for profit. However, this provisional registration shall not absolve the registrant from liability if the provisional registration is later revoked because it is determined that the software infringes another softright.

(b) Within six months of receiving either a Class *A* or Class *B* application, the Register of Softrights shall complete an examination of the material submitted and make a detemination as to whether the material submitted constitutes softrightable subject matter.

(c) When, after examination, the Register of Softrights determines that, in accordance with the provisions of this Act, the material deposited constitutes softrightable Class *A* or Class *B* subject matter and that the other legal and formal requirements of this title have been met, the Register shall register the claim and issue to the applicant a final certificate of registration under the seal of the Softright Office. The certificate shall contain the information in the application, together with the number and date of the registration.

(d) In any case in which the Register of Softrights determines that, in accordance with the provisions of this Act, the material deposited does not constitute softrightable subject matter or that the claim is invalid for any other reason, the Register shall refuse to register the material, revoke the provisional registration, if any, and notify the applicant in writing of the reasons for such refusal.

(e) In any judicial proceedings, a final certificate of registration shall constitute prima facie evidence of the validity of the softright and of the facts stated in the certificate.

(f) The effective date of registration is the date on which the final certificate was issued or the date on which the provisional certicate was issued, if one was issued.

§ 404. **Registration as a prerequisite to infringement suit for undistributed software**

Before an action for infringement of softright in undistributed software can be brought, the software must be registered and a certificate must be issued.

§ 405. **Registration of public domain software**

The Register of Softrights is authorized to accept software for registration as public domain software if the softright owner submits an application for registration in accordance with section 402, together with the following:

(a) a certificate of donation issued by a person authorized to administer oaths within the United States;

(b) in the case of a computer program, one complete copy of the source code; and

(c) in the case of documentation, a complete eye-readable copy of the documentation or a complete sound recording of the software if it has been or will be distributed as a sound recording.

If the software has been previously registered, only the certificate of donation and the prior registration number need be submitted.

Comments

The registration of public domain software is to be encouraged to ensure that the Softright Office has as complete a collection of preexisting software as possible for comparison with Class *A* applications. There is no fee for public domain registration.

§ 501. **Duration of softright: Software first distributed prior to the effective date of this Act**

All software first distributed prior to the effective date of this Act shall automatically be entitled to Class *B* protection under this Act. The period of softright protection shall continue for five years after the effective date of this Act. In order to remain eligible for protection under this Act, existing software shall have one year from the date of enactment of this Act to comply with all the provisions of this Act.

§ 502. **Duration of softright: Software first distributed after the enactment of this Act**

(a) Class *A* protection shall continue for one year from the date of first distribution of software which has qualified for Class *A* protection.

(b) Class *B* protection shall continue for five years from the date of first distribution or from the expiration of Class *A* protection if the software qualified for Class *A* protection.

§ 503. **Duration of softright: Date of termination**

All terms of softright provided by sections 501 and 502 run to the end of the calandar year in which they would otherwise expire.

§ 601. **Ownership of softright**

(a) Initial ownership—Softright in software protected under this Act vests initially in the author or authors of the software. The authors of a joint work are coowners of softright in the software.

(b) Software made for hire—In the case of software made for hire, the employer or other person for whom the software was prepared is considered the author for purposes of this Act, and, unless the parties have expressly agreed otherwise in a written instrument signed by the parties, the employer owns all the rights comprised in the softright.

(c) Transfer of ownership—

(1) The ownership of a softright may be transferred in whole or in part by any means of conveyance or by operation of law and may be bequeathed by will or pass as personal property under the applicable laws of intestate succession.

(2) Any of the exclusive rights comprised in a softright, including any subdivision of any of the rights specified by section 105, may be separately transferred as provided by subsection (c)(1) of this section and separately owned. The owner of any particular exclusive right is entitled, to the extent of that right, to all of the protection and remedies accorded a softright owner by this Act.

(d) Involuntary transfer—When an individual author's ownership of a softright or of any of the exclusive rights under a softright has not previously been transferred voluntarily by that individual author, no action by any governmental body or other official or organization purporting to seize, expropriate, transfer, or exercise the rights of ownership with respect to the softright, or any of the exclusive rights of ownership with respect to the softright shall be given effect under this Act.

§ 602. **Ownership of softright distinguished from ownership of material object**

Ownership of a softright, or of any of the exclusive rights included in a softright, is distinct from the ownership of any material object in which the software is embodied. The transfer of ownership of any material object, including the copy in which the software is first fixed, does not of itself convey any softright rights in the software embodied in the object; likewise, the transfer of ownership of a softright or of any of the exclusive rights included in a softright does not of itself convey property rights in any material object in the absence of an agreement to the contrary.

§ 603. **Execution of transfers of softright ownership**

(a) No transfer of softright ownership, other than by operation of law, is valid unless evidenced by an instrument of conveyance, a note or memorandum of the transfer, or some other writing signed by the owner of the rights conveyed or such owner's duly authorized agent.

(b) A certificate of acknowledgement is not required to effect a valid transfer, but it is prima facie evidence of the execution of the transfer if—

(1) in the case of a transfer executed in the United States, the certificate is issued by a person authorized to administer oaths within the United States, or

(2) in the case of a transfer executed in a foreign country, the

certificate is issued by a diplomatic or consular officer of the United States, or by a person authorized to administer oaths in the foreign country whose authority is proved by a certificate of such an officer.

§ 604. **Recordation of transfers and other documents**

(a) Conditions for recordation—Any transfer of softright ownership or other document pertaining to a softright may be recorded in the Softright Office, if the document filed for recordation bears the actual signature of the person who executed it or if it is accompanied by a sworn or official certification that it is a true copy of the original, signed document.

(b) Certificate of recordation—Upon receipt of a document meeting the requirements of subsection (a) of this section and of the fee required by section 908, the Register of Softrights shall record the document and return it with a certificate of recordation.

(c) Recordation as constructive notice—Recordation of a document in the Softright Office gives all persons constructive notice of the facts stated in the recorded document if—

(1) the document or the material attached to it specifically identifies the software to which it pertains, so that, after it has been indexed by the Register of Softrights, the document can be found by a reasonable search under the title or registration number of the software, and

(2) the software has been registered.

(d) Recordation as a prerequisite to infringement suit—No person claiming by virtue of a transfer to be the owner of a softright or of any exclusive right under a softright is entitled to institute an infringement action under this Act until the instrument of transfer under which such person claims has been recorded in the Softright Office, but suit may be instituted after such recordation on a cause of action that arose before recordation.

(e) Priority between conflicting transfers—As between two conflicting transfers, the one executed first in time prevails if it is recorded in the manner required to give constructive notice under subsection (c) of this section within one month after its execution in the United States, within two months after its execution outside the United States, or at any time before the recordation in such manner of the later transfer. Otherwise the later transfer prevails if recorded first in such manner, and if taken in good faith, for valuable consideration or on the basis of a binding promise to pay royalties, and without notice of the earlier transfer.

(f) Priority between conflicting transfer of ownership and nonexclusive license—A nonexclusive license prevails over a conflicting transfer of softright ownership, whether recorded or not, if the license is evidenced by

a written instrument signed by the owner of the rights licensed or such owner's duly authorized agent, and if—

(1) the license was taken before execution of the transfer; or

(2) the license was taken in good faith before recordation of the transfer and without notice of it.

§ 701. **Infringement of softright**

(a) Anyone who violates any of the exclusive rights of the softright owner as provided by sections 105 through 109 or who imports copies into the United States in violation of section 801 is an infringer of the softright.

(b) Subject to the requirements of sections 405 and 604(d), the legal or beneficial owner of an exclusive right under a softright is entitled to institute an action for any infringement of that particular right committed while he is the owner of it. The court may require such owner to serve written notice of the action with a copy of the complaint upon any person shown, by the records of the Softright Office or otherwise, to have or claim an interest in the softright, and shall require that such notice be served upon any person whose interest is likely to be affected by a decision in the case. The court may require the joinder, and shall permit the intervention, of any person having or claiming an interest in the softright.

§ 702. **Remedies for infringement: Injunctions**

(a) Any court having jurisdiction of a civil action arising under this Act shall grant a temporary injunction on such terms as it may deem reasonable to prevent or restrain infringement of a softright unless the defendant shows—

(1) that the plaintiff is unlikely to succeed in his action, or

(2) that the plaintiff will not be unduly harmed by the failure to grant such an injunction and that the defendant will be irreparably harmed by such an injunction.

(b) An injunction granted under subsection (a) of this section may be served anywhere in the United States on the person enjoined; it shall be operative throughout the United States and shall be enforceable, by proceedings in contempt or otherwise, by any United States court having jurisdiction over that person. When requested by any other court in which enforcement of the injunction is sought, the clerk of the court granting the injunction shall transmit promptly to the other court a certified copy of all papers in the case on file in such clerk's office.

Comments

The ordinary burden of proof for obtaining an injunction has been

reversed to make it easier for the softright owner to enforce his rights. This provision should not encourage frivolous suits, since the court may award the defendant attorney fees under section 705 if it determines that the plaintiff's suit is frivolous.

§ 703. **Remedies for infringement: Impounding and disposition of infringing articles**

(a) While an action under this Act is pending, the court may at any time order the impoundment, on such terms as it may deem reasonable, of all copies or derivative software claimed to have been made in violation of the softright owner's exclusive rights and all other articles by means of which such copies may be reproduced.

(b) As part of a final judgment or decree, the court may order the destruction or other reasonable disposition of all copies found to have been made in violation of the softright owner's exclusive rights and of all other articles by means of which such copies may be reproduced.

§ 704. **Remedies for infringement: Damages and profits**

(a) In general—Except as otherwise provided by this Act, an infringer of softright is liable for the greatest of—

(1) the softright owner's actual damages;

(2) the profits of the infringer as provided by subsection (b) of this section; or

(3) statutory damages as provided by subsection (c) of this section.

(b) Profits—In establishing the amount of the infringer's profits, the softright owner is required to present proof only of the infringer's gross revenue, and the infringer is required to prove the elements of revenue attributable to factors other than the softrighted software. The infringer is not entitled to any deduction for expenses attributable to the softrighted software.

(c) Statutory damages—

(1) When the court finds that acts of infringement have been committed willfully, the court shall grant statutory damages of $50,000 for the first act of infringement and $10,000 for each additional act of infringement. For purposes of this subsection, each unauthorized copy which is made shall constitute a separate act of infringement, and each unauthorized distribution of an unauthorized copy or copy of derivative software shall constitute a separate act of infringement. Unauthorized copying shall be presumed to be willful when the following notice appeared on the first screen or page or at the beginning of a sound recording of the software:

This software is protected by softright. If you are a lawful possessor of this software you have the following rights:

> (a) to create derivative software based upon the softrighted software in your possession for private use;
>
> (b) to reproduce the software in copies for any of the following purposes or similar purposes:
>
> (1) modifying the software for private use;
>
> (2) transferring the software to a different storage medium;
>
> (3) making backup copies to replace the original copy should it become damaged or destroyed.
>
> Copying for other purposes or distribution by gift, exchange, sale or any other means of conveyance of copies of this software or of software based on this software, without the express permission of the softright owner, is an infringement of softright for which you may be liable for $50,000 in fines or punitive damages for the first infringing copy and $10,000 for each additional infringing copy. Any person who provides evidence leading to the conviction of any other person for a violation of a softright is entitled to a reward of up to $10,000.

(2) In all cases where willfulness is neither independently shown nor presumed, the court shall grant statutory damages in a sum of not less than $250 or more than $10,000, as the court considers just, for each act of infringement with respect to each piece of registered software involved in the action, for which any infringer is liable individually, or for which any two or more infringers are liable jointly and severally. In the event the soft-right owner proves actual damages in excess of this amount or that the infringer's profits from the infringement were in excess of this amount, the court shall award the greater of the damages or profits proved.

(d) The person or persons who provide evidence necessary to prove infringement are jointly entitled to ten percent of the damage award, unless that amount exceeds $10,000 per person in which case each person providing such evidence is entitled to $10,000.

Comments

This section and the following two sections should make legal enforcement of rights under this Act economically feasible.

§ 705. **Remedies for other civil violations**

(a) Anyone who violates any section of this Act other than sections 701 through 704 or 707 shall be liable for—

(1) a fine of $5000 if sued by the United States Government, or

(2) the greater of the actual damages proved or $5000 in statutory damages if sued by a private plaintiff.

(b) Suits under this section are subject to the provisions of section 706 on attorney fees.

§ 706. **Remedies for infringement: Costs and attorney fees**

In any civil action under this Act, the court in its discretion may allow the recovery of full costs by or against any party other than the United States or an officer thereof. Except as otherwise provided by this Act, the court may award reasonable attorney fees to a successful plaintiff. The court may award reasonable attorney fees to a successful defendant if it determines that the plaintiff's suit was frivolous. This section shall be interpreted liberally.

§ 707. **Criminal offenses**

(a) Criminal infringement—Any person who infringes a softright willfully and for purposes of commercial advantage or private financial gain shall be fined not less than $50,000 for the first infringing act and $10,000 for each additional infringing act or imprisoned for not more than one year, or both. For purposes of this section, each unauthorized copy that is made shall constitute a separate act of infringement, and each unauthorized distribution of an unauthorized copy or a copy of derivative software shall constitute a separate act of infringement.

(b) Forfeiture and destruction—When any person is convicted of any violation of subsection (a) of this section, the court in its judgment of conviction shall, in addition to the penalty therein prescribed, order the forfeiture and destruction or other disposition of all infringing copies and all implements, devices, or equipment used in the manufacture of such infringing copies.

(c) Fraudulent softright notice—Any person who, with fraudulent intent, places on any article a notice of softright or words of the same import that such person knows to be false, or who, with fraudulent intent, distributes for profit or imports for distribution for profit any arti-

cle bearing such notice or words that such person knows to be false, shall be fined not more than $25,000 for the first offense and shall be fined not more than $50,000 for any subsequent offense.

(d) Fraudulent removal of softright notice—Any person who, with fraudulent intent, removes or alters any notice of softright appearing on a copy of softrighted software shall be fined not more than $25,000 for the first offense and shall be fined not more than $50,000 for any subsequent offense.

(e) False representation—Any person who knowingly makes a false representation of a material fact in the application for softright registration described by section 402, or in any written statement filed in connection with such an application shall be fined not more than $25,000.

(f) Distribution for profit without registration—Any person who willfully distributes software for profit without prior registration shall forfeit the softright in the software and shall be fined not more than $25,000.

(g) In addition to any fine imposed by subsections (a) through (f) of this section, the court may impose upon any person convicted of a violation of this section the reasonable costs of the criminal proceedings, including a reasonable fee to compensate the United States for the time which the prosecutor expended on the case.

(h) The person or persons who provide evidence necessary to prove an infringement are jointly entitled to ten percent of the fine assessed for that infringement under subsections (a) through (f) of this section, unless that amount exceeds $10,000 per person in which case each person providing such evidence is entitled to $10,000.

§ 708. **Limitations on actions**

(a) Criminal proceedings—No criminal proceeding shall be maintained under the provisions of this Act unless it is commenced within three years from the date on which the criminal act occurred.

(b) Civil actions—No civil action shall be maintained under the provisions of this Act unless it is commenced within three years from the date on which the claim accrued.

§ 709. **Notification of filing and determination of actions**

Within one month after the filing of any action under this Act, the clerks of the courts of the United States shall send written notification of the action to the Register of Softrights; this notice shall set forth, as far as is shown by the papers filed in the court, the names and addresses of the parties to the action and the title, author, and registration number of each piece of software involved in the action. If any other softrighted software is later included in the action by amendment, answer, or other

pleading, the clerk shall also send a notification concerning it to the Register within one month after the pleading is filed.

§ 801. **Infringing importation of copies**

(a) Importation into the United States of copies of software that have been acquired outside the United States without authorization from the owner of softright under this Act is an infringement of the exclusive right to distribute copies under section 105 and is actionable under section 701. However, this subsection does not apply to—

(1) the importation of copies under the authority or for the use of the government of the United States or of any state or political subdivision of a state, but not including copies for use in schools;

(2) the importation by any person of no more than one copy of a particular piece of software at any one time, provided that such importation is for the private use of the importer and not for distribution, or by any person arriving from outside the United States of copies forming part of such person's personal baggage; or

(3) the importation of no more than five copies of a particular software by or for an organization operated for scholarly, educational, or religious purposes and not for private gain for its library lending or archival purposes, unless the importation of such copies is part of an activity consisting of systematic reproduction or distribution engaged in by such organization in violation of section 107.

(b) In cases where the making of the copies would have constituted an infringement of softright if this Act had been applicable, the importation of such copies is prohibited. In cases where the making of the copies would have been lawful if this Act had been applicable, the United States Customs Service has no authority to prevent the importation of such copies. The Secretary of the Treasury is authorized to prescribe by regulation a procedure under which any person claiming an interest in the softright of a particular piece of software may, upon payment of a specified fee, be entitled to notification by the Customs Service of the importation of articles that appear to be copies of that piece of software.

§ 802. **Importation prohibitions: Enforcement and disposition of excluded articles**

(a) The Secretary of the Treasury and the United States Postal Service shall separately or jointly make regulations for the enforcement of the provisions of this Act prohibiting importation.

(b) These regulations may require, as a condition for the exclusion of articles under section 801—

(1) that the person seeking exclusion obtain a court order enjoining importation of the articles, or

(2) that the person seeking exclusion furnish proof, of a specified nature and in accordance with prescribed procedures, that the softright in which such person claims an interest is valid and that the importation would violate the prohibition in section 801; the person seeking exclusion may also be required to post a surety bond for any injury that may result if the retention or exclusion of the articles proves to be unjustified.

(c) Articles imported in violation of the importation prohibition of this Act are subject to seizure and forfeiture in the same manner as property imported in violation of the customs revenue law. Forfeited articles shall be destroyed as directed by the Secretary of the Treasury or the court, as the case may be; however, the articles may be returned to the country of export whenever it is shown to the satisfaction of the Secretary of the Treasury that the importer has no reasonable grounds for believing that his or her acts constituted a violation of law.

§ 901. **The Softright Office: General responsibilities**

(a) All administrative functions and duties under this Act, except as otherwise specified, are the responsibility of the Register of Softrights as director of the Softright Office.

(b) The Register of Softrights shall adopt a seal which shall be used to authenticate all certified documents issued by the Softright Office.

(c) The Register of Softrights shall make an annual report to the Congress of the work and accomplishments of the Softright Office during the previous fiscal year. The annual report of the Register of Softrights shall be published.

(d) Except as provided by section 906(b) and the regulations issued thereunder, all actions taken by the Register of Softrights under this Act are subject to the provisions of the Administrative Procedure Act, ch. 324, 60 Stat. 237 (1946), as amended.

§ 902. **Softright Office regulations**

The Register of Softrights is authorized to establish regulations not inconsistent with law for the administration of the functions and duties made the responsibility of the Register under this Act.

§ 903. **Effective date of actions in Softright Office**

In any case in which time limits are prescribed under this Act for the performance of an action by the Softright Office, and in which the last day of the prescribed period falls on a Saturday, Sunday, holiday or other nonbusiness day within the District of Columbia or the federal

government, the action may be taken on the next succeeding business day, and is effective as of the date when the period expired.

§ 904. **Retention and disposition of articles deposited in the Softright Office**

(a) Upon their deposit in the Softright Office under section 401 through 405, all copies, including those deposited in connection with claims that have been refused registration, are the property of the United States government.

(b) In the case of Class *B* software which is distributed for profit, all materials deposited are available to the Library of Congress for its collections, or for exchange or transfer to any other library. In the case of Class *B* software which is not distributed for profit, the Library of Congress is entitled, under regulations that the Register of Softrights shall prescribe, to select any deposits for its collections, for transfer to the National Archives of the United States, or for transfer to a federal records center as defined in section 2901 of title 44 of the United States Code.

(c) The Register of Softrights is authorized to make reproductions of all or part of any material deposited in the Softright Office records of registration under sections 401 through 405 for inclusion before transferring such material to the Library of Congress as provided by subsection (b) of this section or before destroying or otherwise disposing of such material as provided for by subsection (d) of this section.

(d) Deposits not selected by the Library under subsection (b) of this section shall be retained under the control of the Softright Office, including retention in government storage facilities, for ten years from the date of application for registration. After that period, it is within the discretion of the Register to order their destruction or other disposition.

§ 905. **Softright Office records: preparation, maintenance, public inspection, and searching**

(a) The Register of Softrights shall provide and keep in the Softright Office records of all deposits, registrations, recordations, and other actions taken under this Act, and shall prepare indexes of all such records.

(b) Such records and indexes, as well as all articles deposited in connection with completed softright registrations and retained under the control of the Softright Office, shall be open to public inspection except as otherwise provided by this Act.

(c) Upon request and payment of the fee specified by section 908, the Softright Office shall make a search of its public records, indexes, and deposits, and shall furnish a report of the information disclosed therein with respect to any particular deposits, registrations, or recorded documents.

§ 906. **Copies of Softright Office records**

(a) Copies may be made of any public records or indexes of the Softright Office, and additional certificates of softright registration and copies of any public records or indexes may be furnished upon request and payment of the fees specified by section 908.

(b) Copies or reproductions of deposited articles retained under the control of the Softright Office shall be authorized or furnished only under the conditions specified by the Softright Office regulations.

§ 907. **Softright Office forms and publications**

(a) Catalog of softright entries—The Register of Softrights shall compile and publish at periodic intervals catalogs of all softright registrations. The Register has discretion to determine, on the basis of practicability and usefulness, the form and frequency of publication of the catalogs.

(b) Other publications—Upon request, the Register shall furnish, free of charge, application forms for softright registration and general informational material in connection with the functions of the Softright Office. The Register also has the authority to publish compilations of information, bibliographies, and other material which he considers to be of value to the public.

(c) Distribution of publications—All publications of the Softright Office shall be furnished to depository libraries as specified under section 1905 of title 44 of the United States Code and, aside from those furnished free of charge, shall be offered for sale to the public at prices based on the cost of reproduction and distribution.

§ 908. **Softright Office fees**

(a) For each of the following services, the following fees shall be paid to the Register of Softrights:

(1) for the registration of a Class *B* softright claim, including the issuance of a certificate of registration—$25;

(2) for the registration of a Class *A* softright claim, including the issuance of a certificate of registration—$100;

(3) for the recordation, as provided by section 604, of a transfer of softright ownership or other document of six pages or less, covering no more than one title—$10; and for each page over six and each title over one, an additional 50 cents;

(4) for the issuance of an additional certificate of registration under section 906—$5;

(5) for the issuance of any other certification—$5;

(6) for the making and reporting of a search as provided by

section 905, and for any related services—$10 for each hour or fraction of an hour consumed;

(7) for any other special services requiring a substantial amount of time or expense, such fees as the Register of Softrights may fix on the basis of the cost of providing the service;

(8) the Register of Softrights has the discretion to fix fees for preparing copies of Softright Office records on the basis of their cost.

(b) The fees prescribed by this section for services are applicable to the United States government and any of its agencies, employees, or officers, but the Register of Softrights has discretion to waive the fees provided for in this section in occasional cases involving relatively small amounts.

(c) All fees received under this section shall be deposited by the Register of Softrights in the Treasury of the United States and shall be credited to the appropriation for the necessary expenses of the Softright Office. The Register may, in accordance with regulations that he shall prescribe, refund any sum paid by mistake or any payment in excess of the fee required by this section; however, there shall be no refund for the denial or refusal to register a Class *A* software claim.

§ 1001. **Preemption with respect to other laws**

Except in accordance with the provisions of section 201, this Act shall preempt all intellectual property protection for software under copyright, patent or trade secret law.

Comments

This provision should relieve the uncertainty caused by the overlapping of current intellectual property protection schemes.