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SOFTWARE COPYRIGHT INFRINGEMENT CLAIMS
AFTER MAI SYSTEMS v. PEAK COMPUTER

Trinnie Arriola

Abstract: In MAI Systems Corp. v. Peak Computer, Inc. the Ninth Circuit Court of Appeals held that Peak committed copyright infringement by running MAI operating system software incidental to Peak's repair of the computer system. The court rejected Peak's section 117 defense under the Copyright Act because it refused to recognize a licensee of computer software as an "owner" of a copy of software. This Note argues that the decision contravenes both the substance and principles of federal copyright law, and unnecessarily harms computer owners. It suggests a two-tiered analysis that courts should follow when evaluating copyright infringement claims involving software licensing agreements and third parties.

In MAI Systems Corp. v. Peak Computer, Inc.1 the Ninth Circuit Court of Appeals ruled that a third party's unauthorized act of loading copyrighted software into the Random Access Memory (RAM)2 in order to repair a computer system constituted copyright infringement under the 1976 Copyright Act (the Act).3 By refusing to evaluate the infringement claim under section 117 of the Act4 and failing to consider the fair use exemption,5 the court elected an approach with unpredictable and unfair consequences. The decision provides manufacturers with a patent-like monopoly over the use and maintenance of the computer upon which such software operates. As a result, the decision protects copyright holders' interests at the expense of software users' rights, and thus undermines the goals of the Copyright Act.

The MAI Systems court reached a flawed decision lacking any cogent rationale or supporting public policy. The court's cursory dismissal of section 117's applicability, based upon its interpretation of "owner," inappropriately restricts rights that computer users have long taken for granted and fails to consider the practical effects on the computer industry. The Ninth Circuit instead should have followed a two-step

1. 991 F.2d 511 (9th Cir. 1993).
2. RAM is the portion of the computer that temporarily holds the computer program while it is being processed. See infra note 9 and accompanying text.
4. MAI Systems, 991 F.2d at 518 n.5. Section 117 permits owners of computer programs to make copies without obtaining permission from the program's copyright owner. 17 U.S.C.A. § 117 (West Supp. 1993); see also infra notes 51-52 and accompanying text.
analysis focusing on how a copy of computer software is actually acquired and used.

This Note begins with an examination of the Copyright Act, its purposes and its limitations. Part II summarizes the issues and holding in MAI Systems. Part III criticizes the MAI Systems decision on four separate grounds. Finally, part IV proposes an approach for evaluating copyright infringement cases involving software licensing agreements and third-party users.

I. COPYRIGHT PROTECTION FOR COMPUTER SOFTWARE

The United States Constitution lays the foundation for modern copyright law by permitting Congress to create incentives that promote progress in science. Based on this premise, Congress enacted the Copyright Act to grant authors certain exclusive rights over their works for a limited time. In providing these protections, Congress recognized the need to balance the copyright owner's entitlement to a limited monopoly with the public's interest in using the copyrighted work. In 1980, Congress explicitly extended this statutory scheme of exclusive rights and limitations to computer software.

A. The Integration of Computer Software and Hardware

To understand the application of copyright principles to computer programs, it is necessary to examine the technical aspects of computers. Computer systems generally consist of two principal components: hardware and software. Hardware is the physical machinery of the computer system and usually consists of four functional components: input, the central processing unit (CPU), memory, and output. These
components interact within the hardware framework to perform numerous functions. Central to the coordination of this interaction is the microprocessor, a semiconductor chip that manipulates all of the data within the computer. To function, however, the microprocessor requires instructions in the form of a computer program that dictates all of the computer's mechanical and electrical operations.

The operating system is the crucial computer program for controlling the microprocessor's function. As a general rule, computers cannot function unless the operating system is loaded into the computer's RAM because the operating system manages the computer's physical resources and orchestrates the execution of all programs. Each time the user turns on the computer, the computer automatically loads the operating system from the program's storage device into the computer's RAM. This unique feature of the operating system renders it susceptible to copyright infringement claims under current copyright law.

B. Copyright Protection for Computer Software

Federal copyright law espouses both social and economic goals. The limited monopoly granted by the Copyright Act seeks to promote the public interest by facilitating public access to the created product and by advancing progress in science and art. This promotion of progress is achieved by granting financial incentives to individuals who produce intellectual works. These incentives allow authors to restrict dissemination and reap economic benefits from the commercial exploitation of their works. This monopoly grant is, however, limited

10. Output devices are often integrated with input devices. The product of the CPU may be stored on disk and simultaneously routed to a printed (hard copy) or a video display terminal (soft copy) for review by the computer user. See id. at 45–48, 127–138.
13. The terms "computer programs" and "computer software" are used interchangeably.
by the Constitution.20 Furthermore, traditional copyright policy favors the public interest over the property rights of the author.21

Section 106 of the Copyright Act22 confers a number of exclusive rights on copyright owners.23 These include the exclusive rights to reproduce the work in copies, to prepare derivative works based on the copyrighted work, to distribute copies of the work to the public, and to perform and display the work publicly.24 The copyright owner has the sole right to exercise these rights and to exclude others from exercising such rights. Furthermore, under current law, each right is separate and assignable, and an owner may divide and grant the rights to a given work in a piecemeal fashion.25

Prior to the 1976 revision of the Copyright Act, Congress struggled to determine the scope of protection that should be given to computer programs.26 In recognition of the complex issues involving computer software, Congress created the National Commission on New Technological Uses of Copyrighted Works (CONTU) to research, study, and recommend legislative changes related to computer programs.27 In 1978, CONTU issued its final report in which it recognized that copyright protection should extend to computer programs in order to encourage their creation and broad distribution in a competitive market.28

CONTU acknowledged the importance of balancing the interest of proprietors in obtaining reasonable protection against the risks of unduly

20. Id.; see also Durham Industries, Inc. v. Tomy Corp., 630 F.2d 905, 912 (1980) (citing Herbert Rosenthal Jewelry Corp. v. Honora Jewelry Co., 378 F. Supp. 485, 490 (S.D.N.Y. 1974), for the proposition that the purpose of the Act is to protect an original design from copying and not to convey to the proprietor any right to exclude others from the marketplace).
21. See Staff of House Comm. on the Judiciary, 87th Cong., 1st Sess., Report of The Register of Copyrights on the General Revision of the U.S. Copyright Law 5 (Comm. Print 1961) ("As reflected in the Constitution, the ultimate purpose of copyright legislation is to foster the growth of learning and culture for the public welfare, and the grant of exclusive rights to authors for a limited time is means to that end.").
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burdening computer program users and the general public. As a result, the report recommended the enactment of a new section 117, which would grant “rightful possessors” of copyrighted software a limited right to make copies and adaptations of their programs. CONTU advised that this section should be flexible enough to be able to adapt to future advances in computer technology.

In 1980, Congress enacted the Computer Software Copyright Act, which incorporated CONTU’s recommendations by adding both section 117 and section 101’s definition of a computer program to the Copyright Act. Although the 1980 Act’s legislative history consisted of only a short paragraph in a congressional committee report, the committee acknowledged that the Act embodied the recommendations of CONTU. The absence of an extensive legislative history and the fact that Congress enacted the proposed section 117 with only one change have prompted courts to rely on the CONTU report as an expression of legislative intent.

29. Id. at 12.
30. Congress originally enacted section 117 to maintain the status quo concerning protection for computer software while CONTU researched the feasibility of protecting computer programs.
32. Id. at 12.
33. 17 U.S.C.A. § 117 (West Supp. 1993). The section provides in part:
   Notwithstanding the provisions of section 106, it is not an infringement for the owner of a copy of a computer program to make or authorize the making of another copy or adaptation of that computer program provided:
   (1) that such a new copy or adaptation is created as an essential step in the utilization of the computer program in conjunction with a machine and that it is used in no other manner, or
   (2) that such new copy or adaptation is for archival purposes only . . .
   Id.
34. 17 U.S.C.A. § 101 (West Supp. 1993). The section provides the following definition: “A ‘computer program’ is a set of statements or instructions to be used directly or indirectly in a computer in order to bring about a certain result.” Id.
36. Id.
C. Copyright Infringement

Section 501(a) of the Copyright Act provides that any act inconsistent with a copyright holder’s exclusive rights constitutes infringement. To prove an infringement claim, a plaintiff must establish a valid copyright and the “copying” of protectable expression. In MAI Systems, Peak’s copying involved the reproduction of MAI’s copyrighted software in “copies” in violation of MAI’s section 106(1) rights. The Copyright Act defines “copies” as material objects in which a work is fixed and from which the work can be perceived or reproduced, either directly or with the aid of a machine or device. According to section 101 of the Act, a work is “fixed” in a tangible medium of expression when the copy is sufficiently stable to be perceived or reproduced for a notable period of time.

In the context of software licensing agreements, a licensee infringes an owner’s copyright if the licensee’s use of the work exceeds the scope of its license. These licenses, however, must be construed according to the purposes underlying the governing federal copyright law. Therefore, license agreement provisions that contravene the Copyright Act are preempted and unenforceable.

Although the Copyright Act provides a statutory framework in which courts can analyze copyright infringement claims, the Act does not cover every conceivable situation. In Sony Corp. v. Universal City Studios, the United States Supreme Court indicated that the correct approach to interpreting and applying copyright law to new technologies is to resolve the competing interests of the copyright holder and the public in favor of the public. Moreover, courts must evaluate an alleged infringing use

40. Id.
41. S.O.S., Inc. v. Payday, Inc., 886 F.2d 1081, 1087 (9th Cir. 1989) (finding that exceeding the scope of a license when the licensee copied and prepared a modified version of software programs without the licensor’s permission constitutes copyright infringement).
42. Id. at 1088.
45. Id. at 422. The limited scope of the copyright holder’s statutory monopoly balances the holder’s rights with the public interest. The purpose of conferring the copyright monopoly is to provide benefits to the public from the labors of authors. When technological changes render its literal terms ambiguous, the Copyright Act must be construed in light of this basic purpose. Id. (citing Twentieth Century Music Corp. v. Aiken, 422 U.S. 151, 156 (1975)).
against the backdrop of legislative intent and case history, with an eye toward future applications of the Act.  

D. **Defenses to Copyright Infringement**

Although the Copyright Act grants a number of exclusive rights to the copyright holder, these rights are not absolute. The Act limits a copyright owner's exclusive rights by exempting some otherwise infringing uses from copyright liability. Two of these exemptions are pertinent to an analysis of the *MAI Systems* decision. First, section 117 permits owners of a computer program to make copies without obtaining permission from the program's copyright owner. Second, section 107 codifies the fair use doctrine and excuses an otherwise infringing use if the purpose of the use is fair. Antitrust principles and the judicially created copyright misuse doctrine create additional defenses to claims of infringement and are relevant to the *MAI Systems* decision.

1. **Section 117 Authorizes Owner Copies of Computer Software**

Section 117 was intended to provide "legitimate possessors" of computer programs permission to copy the programs in order to use them in a computer. The members of CONTU noted that computer programs on diskettes could not be used without first being loaded into a computer's memory device. This act of loading a program from a storage medium into memory automatically creates a copy of the program. CONTU's Final Report recommended the adoption of section 117 so that one who "rightfully possessed" a computer program would have a legal right to use it without fear of exposure to copyright liability. Thus, Congress adopted section 117 to protect the legitimate interests of software purchasers and to facilitate the use of computer programs.

When Congress enacted the Computer Software Copyright Act, however, it made one change in CONTU's recommendations. The final

46. *Id.*
49. See infra notes 59–65 and accompanying text.
52. *Id.*
version granted "owners," as opposed to "rightful possessors," the limited right to copy and adapt their software. Congress's failure to explain this textual substitution has generated significant confusion over the meaning of "owner" in relation to section 117's applicability.53 Faced with a lack of specific guidance, courts have looked to legislative history to determine the purpose and scope of section 117.54

In copyright infringement cases involving software licensing agreements, however, courts have not followed a consistent approach in defining "owner." In *Vault v. Quaid*, the Fifth Circuit analyzed copyright infringement claims under section 117 even though the defendant was a licensee of the software program.55 The court did not specifically address the definition of owner, but its framework of analysis implied that the term included those who acquired a program by license.56 In clear contrast to *Vault*, the district court in *CMAK v. Cleveland*57 rejected the licensees' section 117 defense. The court reasoned that the defendants never "owned" a copy of the leased program and that mere possession did not render them software "owners."58 The courts, therefore, have issued conflicting rulings on the scope of "ownership" in licensing agreement cases, despite the clear language in CONTU's Final Report.

2. *Section 107 Permits Copying for Fair Uses*

One of the most important and well established limitations on the exclusive rights of copyright owners is the doctrine of fair use.59 Fair use is the privilege to use copyrighted material in a reasonable manner.

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55. *Vault*, 847 F.2d at 257, 259.
56. Id. at 257.
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without the copyright owner's consent. This doctrine balances the rights of copyright holders with the public's interest in broad dissemination of copyrighted work.

Section 107 enumerates four factors for determining whether the use of a copyrighted work without permission is fair. These factors are 1) the purpose and character of the use of the copyrighted material, 2) the nature of the copyrighted work, 3) the amount and substantiality of the work used, and 4) the effect of the use upon the potential market for the copyrighted material. Consideration of all four factors is mandatory in all circumstances and may not be limited to the uses referred to in the preamble of section 107, which merely illustrate the types of uses likely to qualify as fair uses.

When Congress incorporated the fair use doctrine into the 1976 Act, it acknowledged that the defense was an "equitable rule of reason." Section 107 grants courts discretion to adapt the privilege to particular situations, especially during a period of rapid technological change. Thus, when strict enforcement of the rights of a copyright holder under section 106 conflicts with the purposes of copyright law or with some other important societal value, courts are free to fashion an appropriate fair use exemption.

Prior to 1984, the lower federal courts had shaped the fair use doctrine without meaningful guidance from the Supreme Court. In that year, however, the Supreme Court reexamined the purposes underlying the fair use exception in Sony Corp. v. Universal City Studios. The plaintiffs in the case, Universal City Studios and Walt Disney Productions, alleged

63. Id.
64. Section 107 specifically mentions criticism, comment, news reporting, teaching, scholarship, and research as examples of fair uses. Id.
67. Id.
68. Pacific & Southern, 744 F.2d at 1495.
71. Universal City Studios and Walt Disney Productions are owners of copyrights on television programs that are broadcast over public airwaves. Id. at 419–20.
that consumers' use of Sony Betamax recorders to tape copyrighted programs and watch them later, a practice known as "time-shifting," was a copyright infringement. The Court considered the fair use defense and held that home time-shifting was a fair use.

The Court noted that the definition of exclusive rights in section 106 was prefaced by the words "subject to sections 107 through 118." The Court explained that those sections enumerated various uses of copyrighted materials that were not infringements. It proceeded to analyze the practice of time-shifting under the four fair use factors of section 107. First, the Court concluded that time-shifting for private home use was a noncommercial, nonprofit activity. Second, the Court determined that the nature of a televised copyrighted audiovisual work and the fact that time-shifting merely enables viewers to view at a later time works that they had previously been invited to watch rebutted the presumption that reproducing a copyrighted work in its entirety was unfair. Third, the Court held that a use that has no demonstrable effect upon the potential market for, or the value of, a copyrighted work need not be prohibited in order to protect the author's incentive to create. The Court explained that the prohibition of such uses would inhibit access to ideas without providing any countervailing benefit. Finally, the Court focused on the fact that time-shifting yields societal benefits by expanding public access to broadcast television programs. The Sony decision upheld the requirement of evaluating all four statutory factors and emphasized that no single factor is determinative.

3. Copyright Misuse Bars Infringement Claims

The doctrine of copyright misuse, in combination with antitrust principles, provides an additional defense to copyright infringement. Copyright misuse is an attempt by a copyright holder to use rights protected by a copyright in a manner adverse to the underlying legal principles of copyright law. The rationale for allowing a copyright

72. Id. at 447.
73. Id.
74. Id. at 449.
75. Id. at 449–50.
76. Id. at 450.
77. Id. at 450–51.
78. Id. at 454.
misuse defense is to prohibit the use of a copyright to expand the limited monopoly grant. One example of misuse is employing a copyright to create tying arrangements in violation of antitrust laws. Such copyright misuse contravenes the public policy goals of the Constitution and laws of the United States.

The copyright misuse defense evolved from the specialized doctrine of patent misuse created by the courts to restrain anti-competitive abuses of the patent monopoly. Copyright law and patent law serve similar public interests. Both seek to encourage the introduction of new ideas and knowledge into society by rewarding authors and inventors with exclusive rights to their works for a limited time. This monopoly, however, does not extend to property not subject to the copyright or patent.

An attempt to use a copyright to violate antitrust laws establishes a copyright misuse defense. Antitrust doctrines are based upon the notion that competition produces better products at better prices and improves the overall efficiency of the market. Antitrust laws seek to eliminate anticompetitive behavior. An example of such behavior involving copyrighted material in the computer industry would be an arrangement that conditions the sale of one product upon the purchase of another product. This practice, called “tying,” harms competition by foreclosing the tied market to competitors. Tying arrangements are typically employed when sellers of one product cannot compete in the market for a second product by offering lower prices, and instead attempt to monopolize the second market by eliminating competition in that market.

80. Copyright law promotes progress in science and useful arts by granting a limited monopoly. The public policy behind this limited monopoly forbids the extension of the copyright to secure an exclusive right or limited monopoly not granted by the U.S. Copyright Office and which is contrary to public policy. Lasercomb, 911 F.2d at 978.
81. Lasercomb, 911 F.2d at 973.
82. The doctrine of patent misuse is well established. Id. at 973. The leading case establishing the defense is Morton Salt Co. v. G.S. Suppiger Co., 314 U.S. 488 (1942). In Morton Salt, the Supreme Court refused to enforce a patent because Morton Salt extended the exclusionary power granted by its patent beyond the protected product by tying the sale of an unpatented product to the sale of a patented product. Id. at 492.
84. Lasercomb, 911 F.2d at 976.
85. Id.
A tying arrangement violates section 1 of the Sherman Act\textsuperscript{87} if the seller has "sufficient economic power"\textsuperscript{88} in the market for the tying product.\textsuperscript{89} The existence of such economic power is usually inferred from a seller's share of the market.\textsuperscript{90} In \textit{Eastman Kodak Co. v. Image Technical Services, Inc.},\textsuperscript{91} the most recent Supreme Court decision regarding tying, the court held that the determination of the existence of market power depends on the economic reality of the market at issue.\textsuperscript{92}

Although the attempted use of a copyright to violate antitrust law constitutes copyright misuse, the use does not need to actually violate the antitrust laws in order to establish a copyright misuse defense.\textsuperscript{93} The defense is an equitable doctrine that applies when use of the copyright violates any public policy.\textsuperscript{94} Thus, courts have sustained the defense when the use violates the copyright laws or the judicial process.\textsuperscript{95}

II. SUMMARY OF ISSUES AND HOLDINGS IN \textit{MAI SYSTEMS}

MAI Systems Corporation (MAI) sued Peak Computer, Inc. (Peak) for copyright infringement based on Peak's use of MAI's operating system when Peak repaired MAI computer systems.\textsuperscript{96} MAI is a multi-national corporation that, until recently, manufactured and sold computer systems.\textsuperscript{97} Additionally, MAI developed the operating system designed

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\textsuperscript{88} Market power is the ability to control a purchaser's actions due to control over a tying product that a seller would not otherwise have in a competitive market. Such power restrains competition on the merits in the market for the tied item and hence, violates the Sherman Act. \textit{Jefferson Parish Hosp. Dist. No. 2 v. Hyde}, 466 U.S. 2, 12 (1984).

\textsuperscript{89} \textit{Fortner Enters., Inc. v. United States Steel Corp.}, 394 U.S. 495, 503 (1969).

\textsuperscript{90} \textit{Jefferson Parish}, 466 U.S. at 17.


\textsuperscript{92} \textit{Id.} at 2082.

\textsuperscript{93} \textit{Lasercomb Am., Inc. v. Reynolds}, 911 F.2d 970, 978 (4th Cir. 1990).

\textsuperscript{94} \textit{Id.}

\textsuperscript{95} \textit{Qad, Inc. v. ALN Assocs. Inc.}, 770 F. Supp. 1261, 1267 (N.D. Ill. 1991). In \textit{Qad}, the plaintiff pursued an infringement suit against the defendant by falsely asserting that its product was a completely original work. \textit{Id.} at 1266. The plaintiff sought and received an injunction against the defendant. \textit{Id.} at 1267. The court concluded that the plaintiff abused the judicial process by using its copyright to sue the defendant and restrain it from using material over which the plaintiff itself had no right. \textit{Id.}

\textsuperscript{96} MAI Systems Corp. v. Peak Computer, Inc., 991 F.2d 511, 513 (9th Cir. 1993).

\textsuperscript{97} Appellants' Opening Brief at 3, \textit{MAI Systems} (No. 92-55363). MAI manufactured and sold a line of minicomputers under the model nos. MPx, SPx, GPx40, and GPx70. \textit{Id.} at 3. MAI computers consist of a terminal, printer, and "system" (that is, software). \textit{Id.} at 6.
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to operate each of its computer systems. Although MAI discontinued its hardware sales business, it continued to service and repair the computers it had sold.

The software packages for the MAI computer systems are copyrighted works. These computer programs are licensed to MAI customers when they purchase MAI computer systems. MAI’s license agreement for its operating system restricts the use of that software.

Peak, on the other hand, is a small, independent computer service and maintenance organization. Peak performs two basic services: routine maintenance and immediate repair services in response to emergencies created by system faults. When the alleged infringement occurred, approximately 50 to 70 percent of Peak’s customers owned MAI computer systems. Pursuant to a written contract between Peak and each of its customers, Peak serviced and repaired computer equipment

98. Appellee’s Brief at 4, MAI Systems (No. 76-1917). MAI spent in excess of $10 million in employment and capital equipment costs to develop this software. Id.
100. Appellee’s Brief at 4, MAI Systems (No. 92-55363). MAI sold thousands of these computers, many of which remain in active use. Id.
101. Id.
102. Id. at 5.
103. Id. A representative MAI software license provides in part:

4. Software License.

(a) License . . . . Customer may use the Software (one version with maximum of two copies permitted—a working and a backup copy) . . . solely to fulfill Customer’s own internal information processing needs on the particular items of Equipment . . . . The term “Software” includes; without limitation, all basic operating system software . . . .

(b) Customer Prohibited Acts . . . . Any possession or use of the Software . . . . not expressly authorized under this License or any act which might jeopardize MAI’s rights or interest in the Software . . . is prohibited, including without limitation, examination, disclosure, copying, modification, reconfiguration, augmentation, adaptation, emulation, visual display or reduction to visually perceptible form or tampering . . . .

MAI Systems, 991 F.2d at 517 n. 3.
104. Appellants’ Opening Brief at 4, MAI Systems (No. 92-55363).
105. Routine maintenance consists of generalized cleaning to ensure the computer operates smoothly. Appellants’ Opening Brief at 6, MAI Systems (No. 92-55363). Emergency repairs consist of identifying the functional problem and supplying the necessary replacement parts. Id. at 7. In repairing the computer, the service technician will operate the system by running the software contained in the computer. Id.
106. Appellee’s Brief at 9, MAI Systems (No. 92-55363).
for a fixed fee.\textsuperscript{107} In this respect, Peak competed directly with MAI for service and maintenance contracts for MAI computers.\textsuperscript{108}

MAI's operating system is essential to repairing or maintaining MAI computers.\textsuperscript{109} In a typical service call on an MAI computer system, the service technician uses the MAI operating system software to view the "error log," which provides an initial indication of the computer problem.\textsuperscript{110} Once the problem is identified, the technician simply replaces each printed circuit board until the system fault clears.\textsuperscript{111}

The Ninth Circuit affirmed the lower court's decision that Peak infringed MAI's software copyrights by running MAI's operating system when servicing MAI computers.\textsuperscript{112} In reaching this conclusion, the court focused exclusively on whether or not loading software into RAM created a "copy" of that software in violation of the Copyright Act.\textsuperscript{113} Although the court acknowledged the lack of authority on point,\textsuperscript{114} it interpreted section 101 of the Copyright Act and relied on \textit{Apple Computer v. Formula International}\textsuperscript{115} and \textit{Vault Corp. v. Quaid Software Ltd.}\textsuperscript{116} to support its contention that a program in RAM was "fixed,"\textsuperscript{117} and thus qualified as a copy under the Copyright Act.\textsuperscript{118}

The court, in a brief footnote without analysis, rejected the application of section 117 on the ground that MAI computer purchasers did not qualify as "owners" under the Copyright Act.\textsuperscript{119} As mere licensees, Peak's customers were not eligible for protection under section 117.\textsuperscript{120} If

\begin{enumerate}
\item[107.] Appellants' Opening Brief at 5, \textit{MAI Systems} (No. 92-55363).
\item[108.] Appellee's Brief at 7, \textit{MAI Systems} (No. 92-55363).
\item[109.] Id.
\item[110.] Appellee's Brief at 11, \textit{MAI Systems} (No. 92-55363).
\item[111.] Appellants' Opening Brief at 7, \textit{MAI Systems} (No. 92-55363).
\item[112.] \textit{MAI Systems}, 991 F.2d at 518.
\item[113.] Id. at 518-19.
\item[114.] The court acknowledged that authorities, such as case law and treatises, on the loading of software into computers were troubling because they did not distinguish among various forms of computer memories such as the RAM, the hard disk, or the read only memory (ROM) into which software can be loaded. \textit{Id.} at 519.
\item[116.] 847 F.2d 255 (5th Cir. 1988).
\item[117.] The court reasoned that Peak's ability to view the system error log while the software was loaded in RAM adequately demonstrated that the representation in RAM was "sufficiently permanent or stable to permit it to be perceived, reproduced, or otherwise communicated for a period of more than transitory duration." \textit{MAI Systems}, 991 F.2d at 518.
\item[118.] Id. at 519.
\item[119.] Id. at 518 n.5.
\item[120.] Id.
\end{enumerate}
the customers had protection under section 117, they could have extended that protection to Peak's repair people. Furthermore, the court found that MAI licensed its computer software only to the purchasers of MAI computer systems. Since the license prohibited the licensees from authorizing others to use or copy the software, the court concluded that Peak's use was unauthorized and hence an infringement.

III. ANALYSIS OF THE MAI SYSTEMS DECISION

The MAI Systems decision conflicts with federal copyright law and its underlying principles in four respects. First, the court disregarded the applicability of section 117. Second, the use of MAI's computer software in performing computer repairs falls within the fair use exemption of the Copyright Act. Third, the decision fails to construe the Copyright Act as a whole. Finally, the decision improperly extends the limited monopoly granted to copyright holders, thus constituting copyright misuse.

A. The Court Disregarded Section 117

The MAI Systems court failed to evaluate the applicability of section 117. In determining whether or not software loaded into RAM constituted a copy under the Copyright Act, the court evaluated two cases: Apple Computer v. Formula International and Vault Corp. v. Quaid Software, Ltd. Although the court relied on these cases to apply the statutory provisions of section 101 to software loaded into RAM, the court disregarded the approach adopted in these cases to determine the applicability of section 117 to the copy of software.

Both the MAI Systems and the Apple Computer decisions involved copyright infringement claims for copyrighted software in a computer memory device. In Apple Computer, the court evaluated the legislative history of section 117, and concluded that section 117 only applied to an "owner-user" of a computer who "rightfully" owned a copy of a

122. Id. at 519.
123. Id.
125. 847 F.2d 255 (5th Cir. 1988).
The court determined that defendant Formula International, a computer kit manufacturer, was clearly not an owner or a user of a computer.

In contrast to Formula International, Peak's customers were owners and users of MAI computers. In light of the Apple Computer court's extensive evaluation of section 117's intent and purpose, the Apple Computer court's use of the term "rightfully" to describe "own" suggests an intent to include legitimate holders and rightful possessors of computer software under section 117. Peak customers were legitimate possessors of MAI operating systems under their software licensing agreements. Thus, section 117 should grant them the right to authorize Peak to use those programs to maintain MAI computer systems.

The MAI Systems court relied on the Vault decision to determine whether Peak's actions created a copy. The court, however, ignored Vault's analysis of section 117. In Vault, the plaintiff licensed its copyrighted programs to the defendant. The plaintiff accused the defendant of copyright infringement for directly loading the copyrighted program into the memory of the defendant's computer for the purpose of developing a new program. The court held that the defendant's actions clearly fell within the section 117 exemption since the loading of the plaintiff's program into the memory of a computer was an essential step in the utilization of the program. The Vault court's thorough section 117 analysis implied that owners of a copy include those who acquired it by license. MAI Systems, however, ignored this implication of the Vault decision and held that a licensee was not an owner under section 117.

Fundamental to both the Apple Computer and Vault decisions was an evaluation of the origins of section 117 in order to determine its applicability to new technology. Although MAI Systems presented a case of first impression, the court failed to evaluate either the purpose or history of section 117 to determine its scope.

127. 847 F.2d at 257.
128. Id. at 258.
129. Id. at 261.
130. See supra note 55–56 and accompanying text.
B. Peak's Use of MAI's Software Was a Fair Use Under Section 107

Loading computer software into RAM for the sole purpose of repairing or maintaining a computer system constitutes a fair use. In light of the Sony decision, the reproduction of an entire copyrighted program in RAM does not necessarily constitute copyright infringement. Rather, evaluation of the purpose and necessity for making such a copy, the benefits conferred to computer owners, and the effect on the value of the copyrighted work tip the balance in favor of a fair use exemption.

The first factor of section 107 requires evaluation of the purpose of the use, including whether the use is for a commercial or nonprofit educational purpose. Loading the operating system software in RAM for computer repair is a noncommercial use. Arguably, such loading by Peak is a commercial use since Peak is in the business of repairing computers for profit. However, the average computer owner cannot exercise the right to use the computer system or the software without the assistance of third parties. Computer owners typically employ Independent Service Organizations (ISOs) to repair their computer systems. Implicit in this arrangement is the assumption that such computer owners are authorizing these third parties to take every step necessary to repair the computer. Because loading the operating system into RAM is necessary to use the computer, such use, whether by the software owner or the authorized third party, is for a noncommercial purpose. By loading the software into RAM, the computer owner is merely exercising the right to use the software in conjunction with his or her computer.

Moreover, the nature of operating systems requires that the entire program be reproduced in RAM when the system is turned on. Loading software into RAM merely enables a computer owner to obtain information regarding the underlying hardware. Peak uses this copy to understand and repair the operating failures of the computer system.

Section 107 also requires courts to consider the effect of the use upon the potential market for, or the value of, the copyrighted work. The Supreme Court asserted in Sony that copyright owners must demonstrate the likelihood of harm to the copyright holder's ability to obtain rewards

131. See supra part I.A.
The copying of software into RAM for the purpose of repairing computer systems does not adversely affect the market for the copyrighted software.

Moreover, Peak’s use caused no actual harm to MAI’s copyrights. MAI did not report any decrease in sales of its software as a result. The only conceivable harm to MAI would be a decrease in its computer service business. MAI’s software copyright did not grant it the exclusive right to repair its hardware systems.

Peak’s reproduction of MAI’s software did not overstep the bounds of necessity. Fair use reproductions of a computer program must not exceed what is necessary to understand the unprotected elements of the work. In MAI Systems, computer system errors were not protected under MAI’s software copyright. Loading software into RAM is the only way to discover these errors. Thus, in light of section 107’s factors, Peak’s software use falls squarely within the purview of the fair use defense.

C. MAI Systems Violated the Principles and Purposes of the Copyright Act

The MAI Systems decision unreasonably favored copyright holders’ rights to the detriment of the general public. By denying section 117 protection to licensees, the court granted copyright holders the unwarranted power to curtail software users’ statutory rights. Similarly, the court’s failure to evaluate fair use curtails computer owners’ ability to hire third parties to repair their computers. As a result, the court’s decision inhibits the development of copyright law with respect to advances in the computer industry.

1. MAI Systems Contravenes the Purpose of Section 117

The MAI Systems decision contravenes Congress’s intent to safeguard computer users’ rights. MAI Systems denies section 117 protection to a significant portion of software purchasers based on a differentiation between licensees and owners. This distinction creates a superficial and unrealistic dichotomy. As such, this decision violates section 117’s

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134. 464 U.S. at 483.

135. Despite this fair use analysis, the evaluation of section 107 alone in software infringement cases is not adequate because section 107 focuses exclusively on use and not on the individual’s method of acquiring the software. Hence, an unlawful possessor of software could be exempt from liability regardless of the fact that he pirated the software.
purpose of allowing all computer users the right to reasonably use their software.

Without analysis or case support, the MAI Systems court ruled that Peak’s customers, as licensees of MAI’s software, had no right to permit Peak to access or copy the software into a computer’s RAM for the purpose of maintaining and servicing the computer system. The court reasoned that MAI’s software licensees do not “own” the copy of the software licensed to them. Implicit in this conclusion is the contention that a software licensing agreement is not a sale of a computer program for purposes of section 117. Thus, the customer in a licensing arrangement becomes something less than an owner. Because licensing agreements are now the prevailing method for transferring software to purchasers, the owner-licensee distinction creates a superficial dichotomy. By allowing software manufacturers to withdraw the benefits of section 117 from their customers by labeling the software transaction something other than a sale, the MAI Systems decision subverts software users’ rights and renders section 117 an “illusory promise.”

2. Failure To Evaluate Fair Use Undermines the Copyright Act

The Ninth Circuit’s failure to consider the fair use exemption undermines the purpose of the Copyright Act. The Act’s statutory framework manifests Congress’s intent to balance the rights of copyright holders with those of the public. Although loading software into RAM conflicts with the exclusive reproduction right conferred by section 106, section 107 provides a limited exemption for repair purposes. The Ninth Circuit ignored fair use considerations, upsetting the statute’s balance in favor of copyright holders. Consequently, the court’s approach undermines the purpose of copyright law.

Congress intended that courts recognize the fair use defense in select cases, in order to uphold the Act’s underlying principles. In MAI Systems, the Ninth Circuit examined the technology of loading software into computer memory in a novel context—third party computer repair.

136. See Stern, supra note 26, at 467.
138. Examples of putatively non-sale transactions include bailments, leases, and licenses. See Stern, supra note 26, at 467 n.47.
139. See Stern, supra note 26.
Computer programs cannot be used unless the hardware system is functioning properly. The overwhelming majority of computer software owners, however, lack the skills and equipment necessary to repair their own computers. The average consumer can repair the computer only by authorizing third parties, such as ISOs, to make the copies that are necessary to fix the system. The MAI Systems decision prevents software users from exercising this prerequisite to computer usage by prohibiting them from authorizing third parties to load the software into the computer’s RAM for the purpose of repairs. The court’s failure to employ the fair use defense to protect the practical necessities of computer usage unreasonably favors copyright holders over the general public in direct contravention to traditional copyright policy.

3. The MAI Systems Decision Creates an Inflexible Standard for Evaluating New Technologies

The Ninth Circuit’s approach to evaluating copyright infringement creates an unworkable, inflexible, and unrealistic framework for evaluating claims involving new technologies. Although the Copyright Act provides a statutory framework, the Act does not encompass every conceivable situation or invention. Hence, courts must evaluate an alleged infringing use with an eye toward future applications. Because the MAI Systems court failed to make this evaluation, its decision will inhibit the development of copyright law with respect to advances in computer technology.

With the increasing use of licensing agreements in software transactions, literal interpretation of the owner requirement of section 117 is neither practical nor desirable. Software manufacturers mass-market computer software under shrink wrap licenses, thus rendering the average consumer and computer user a licensee. The MAI Systems determination that a licensee is not an “owner” fails to accommodate this widespread practice and denies section 117 benefits to the average consumer.

142. Id. at 479.
143. See supra notes 16–17 and accompanying text.
144. See supra notes 44–46 and accompanying text.
145. See supra note 137.
146. Licenses are incorporated under the software product’s plastic wrapping. The license typically indicates that by opening the plastic packaging, the consumer is agreeing to the terms of the agreement.
To promote technological innovations, the Copyright Act must be adaptable to changing technologies. From its inception, copyright law developed in response to significant changes in technology. Federal copyright law imposes a duty on courts to evaluate such changes in light of the principles and purpose underlying the Copyright Act. The Ninth Circuit failed to evaluate industry practice in MAI’s copyright infringement claim. As a result, the court stifled the development of copyright law to the public’s detriment.

D. MAI’s Copyright Extension Constitutes Copyright Misuse

MAI’s attempt to control the maintenance of its computer systems through its copyright is a clear example of copyright misuse. When the MAI Systems court held that software purchasers were not allowed to authorize Peak to run the software in RAM to repair computer systems, it essentially granted MAI an exclusive right to maintain and service its own computers. This decision is an unwarranted extension of the limited monopoly granted under the Copyright Act. It also violates antitrust principles and contravenes public policy by allowing MAI to tie computer maintenance to purchase of its software.

Tying arrangements are illegal under antitrust law because they are undesirable and unnecessary restraints of trade. In Eastman Kodak Co. v. Image Technical Services, Inc., Kodak, a manufacturer of photocopiers and micrographic equipment, provided both services and parts to its customers. Although Kodak provided 80 to 95 percent of the service for its machines, ISOs began competing with Kodak in the service and repair business. In response, Kodak implemented a policy of selling replacement parts for its machines only to those who either used Kodak service or repaired their own machines. Kodak also limited the ISOs’ access to Kodak parts available from other sources. As a result, many ISOs were either forced out of business or lost substantial revenue, and customers were forced to switch to Kodak

148. See supra notes 45–46 and accompanying text.
149. See supra notes 87–88 and accompanying text.
151. Id. at 2077.
152. ISOs provided this service at a price substantially lower than Kodak’s. Id. at 2077.
153. Id.
154. Id. at 2078.
service even though they preferred ISO service.\textsuperscript{155} Eighteen ISOs subsequently sued Kodak for unlawfully tying the sale of service for Kodak machines to the sale of parts.\textsuperscript{156}

The Supreme Court held that sufficient evidence of a tying arrangement existed to preclude summary judgment for Kodak.\textsuperscript{157} The Court found that distinct markets existed for the two products because services and parts are sold separately. Furthermore, the development of the copier service industry demonstrated the efficiency of a separate market for service.\textsuperscript{158} The court found that Kodak's refusal to sell parts to third parties unless they agreed not to buy service from ISOs provided sufficient evidence of a tie.\textsuperscript{159}

In the present case, MAI used its copyright to create an illegal tying arrangement between computer software sales and computer hardware maintenance. Like Kodak, MAI competes with ISOs for the service and repair of its product. Just as Kodak used its control over parts to stifle competition from ISOs, MAI used its control over computer software to effectively restrain, if not eliminate, ISO competition in the hardware maintenance market. Although MAI did not explicitly condition the sale of its software upon purchase of MAI service, the effect is the same. The fact that MAI customers purchased their systems from MAI but entered into service contracts with Peak easily demonstrates that distinct markets exist for computer software and computer maintenance. Moreover, Peak's substantial business underscores the efficiency of a separate market for service. Thus, MAI's copyright claim essentially gave MAI the power to prohibit ISOs from competing with MAI in the service market.\textsuperscript{160}

Additionally, MAI's copyright protection for its operating system software confers sufficient economic advantage to make such a tying

\footnotesize{\textsuperscript{155} Id. \textsuperscript{156} Id. \textsuperscript{157} Id. at 2080. \textsuperscript{158} Id. \textsuperscript{159} Id. For a more detailed analysis, see Daniel E. Lazaroff, \textit{Reflections on Eastman Kodak Co. v. Image Technical Services, Inc.: Continued Confusion Regarding Tying Arrangements and Antitrust Jurisprudence}, 69 Wash. L. Rev. 101 (1994). \textsuperscript{160} In fact, seven independent service organizations that compete with MAI in the business of maintaining MAI minicomputers sought a preliminary injunction against MAI two months after the MAI Systems decision. \textit{MAI Systems Enjoined From Making False or Misleading Statements to Customers of Competitors}, PR Newswire, July 2, 1993, at 1. The ISOs alleged that MAI was telling their customers that the Ninth Circuit decision prevented MAI's maintenance competitors from even turning on an MAI computer to maintain it. Id. A federal district court in Virginia enjoined MAI Systems from making false or misleading statements about its maintenance competitors. Id.}
arrangement effective. In using this economic advantage to tie software to computer service, MAI established an undesirable restraint of trade. As a result, MAI's conduct violates the public policy embodied in the Sherman Act, if not the letter of the law.

Even if Peak cannot successfully assert an antitrust claim, the fact that MAI's conduct raises antitrust concerns defeats MAI's infringement claim on the ground of copyright misuse. A copyright holder cannot use a copyright to gain control of products over which it has no such right. For example, it is well established in patent cases that a patentee cannot extend its lawful monopoly to control another item that is not part of the patent. When a copyright holder attempts to use legal proceedings to protect an improper extension of such copyright, courts should refuse to enforce the copyright. Concrete proof of antitrust violations is not necessary to prevail on a claim of copyright misuse.

In Lasercomb v. Reynolds, the defendants claimed the plaintiff Lasercomb, a software manufacturer, misused its software copyright by including clauses in its standard licensing agreement that prevented the licensee from participating in the creation of computer-assisted die-making software. The court held that the anticompetitive language in the licensing agreement constituted copyright misuse. The court reasoned that the misuse arose from the software manufacturer's attempt to use its copyright to control competition in an area outside the copyright's scope. The court found such use to be adverse to the public policy embodied in the grant of the copyright.

Like Lasercomb's conduct, MAI's anticompetitive behavior is evidence of copyright misuse. MAI used its copyright to eliminate competition in the computer repair business so that it would reap greater rewards than the copyrighted software produces. The extension of MAI's limited monopoly in software to include computer maintenance reduces creativity and competition in the market for computer

162. See supra notes 79–85 and accompanying text.
165. Id.
166. Id. at 972.
167. Id. at 978–79.
168. Id. at 979.
169. Id. at 978.
maintenance. The decision also prohibits customers from purchasing computer maintenance service from third parties, in violation of the public policies embodied in both the Copyright Act and the Sherman Act.

IV. AN ALTERNATIVE TO MAI SYSTEMS

As an alternative to the MAI Systems approach, courts should follow a two-step analysis when evaluating such infringement claims. First, courts should examine section 117's applicability by determining whether the software user is a legitimate possessor of the copy of software. Second, courts should evaluate the third party's use of the copy in light of section 107 principles. By adopting this approach, courts can balance the competing interests of software manufacturers and computer users. This approach protects manufacturers from software piracy but allows legitimate software possessors to use their software without fear of infringement.

A. The Applicability of Section 117

Copyright infringement claims involving licensing agreements require evaluation of section 117. In determining its applicability, courts should focus on the method by which the software purchaser acquired the computer program. Additionally, courts should examine the section's legislative history, as well as industry practice, to resolve ambiguities in the statute's application and to ensure compliance with copyright law principles. This approach protects software users' rights and adheres to the spirit and purpose of the Copyright Act.

Section 117 protection should not automatically exclude licensees since they acquire possessory rights under the software agreement. In S.O.S. v. Payday, the Ninth Circuit held that software license agreements must be construed in light of the principles underlying federal copyright law. Although the court did not evaluate any section 117 issues, the court's analysis of the software agreement between the parties is pertinent to the "owner" issue. The court held that under the

170. See supra notes 16-21 and accompanying text; see also Cohen v. Paramount Pictures Corp., 845 F.2d 851, 854 (9th Cir. 1988).
171. 886 F.2d 1081 (9th Cir. 1989).
172. Id. at 1088.
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license agreement,\(^{173}\) S.O.S., the copyright holder, retained title to any copy of the computer software, but Payday, the licensee, acquired the "right to possess" a copy of the software.\(^{174}\) Thus, the Ninth Circuit explicitly recognized that a licensee "rightfully possesses" a copy of the computer software under a licensing agreement. \textit{MAI Systems}, however, failed to even consider the implications of the S.O.S. decision.

The \textit{S.O.S} approach to evaluating software license agreements represents a logical and policy-wise method of determining who is an "owner" under section 117. The term "owner" must be construed to encompass a "rightful possessor" in light of section 117's intent to include all legitimate software users.\(^{175}\) This interpretation adheres to the spirit and purpose of the statutory exemption. In addition, it balances the legitimate interests of copyright holders without hampering the rights of software users, and curtails software piracy by requiring courts to evaluate the legitimacy of possession.

Equating a "licensee of software" to an "owner of a copy of software," does not adversely affect the copyright owner's exclusive right to reproduction under section 106.\(^{176}\) Congress enacted section 117 to expressly limit the reproduction right for the benefit of computer users.\(^{177}\) Thus, a copyright holder still has the power to control the reproduction of his or her work except in those situations explicitly outlined in section 117.

\textit{B. Section 117 in Conjunction with Section 107}

Once a court determines that an individual is a rightful possessor of computer software, the court should then construe section 117 in light of section 107's underlying principles. Loading software into a computer's RAM by merely turning on the computer should not necessarily constitute infringement. Rather, courts should look to whether the purpose of the copying into RAM violates the principles underlying the exclusive rights granted under section 106.

\footnotesize
\(^{173}\) The relevant language of the license agreement stated that "S.O.S. retains all rights of ownership." \textit{Id.}

\(^{174}\) \textit{Id.}

\(^{175}\) See \textit{supra} notes 51–52 and accompanying text.


\(^{177}\) Whether software manufacturers can contract around the section 117 limitation by denying section 117 rights to licensees is beyond the scope of this paper. Such contracts may raise antitrust and copyright misuse issues.
Copyright infringement claims involving third parties necessitate consideration of section 107. Situations commonly arise in which an alleged infringer is not an owner under section 117 but was authorized, either explicitly or implicitly, by the owner to copy the software.\textsuperscript{178} Section 107 was intended to be a broad exception to copyright infringement. Arguably, section 117 evolved from section 107 and was enacted to ensure the application of fair use principles in specific situations involving software. Thus, under certain circumstances, these third parties should not be liable for infringement.\textsuperscript{179}

Copyright law must adapt to changing technologies and novel applications. Section 117 and 107 protect the legitimate interests of copyright holders while providing exemptions for the public's benefit. Thus, courts should always examine third parties' reasons for copying software to determine whether their use violates the principles underlying the act. This approach complies with Congress's intent and ensures the Copyright Act's adaptability to new technologies.

V. CONCLUSION

In its desire to accurately apply the Copyright Act to computers, the MAI Systems court disregarded previous case law and industry standards. By failing to apply section 117 or to evaluate section 107, the court subverted software users' rights in direct contravention of federal copyright principles. Moreover, the court's approach to evaluating infringement claims resulted in an inflexible and unrealistic framework for resolving cases involving new technologies. Finally, the court's decision raised antitrust concerns and undermined the purpose of the Copyright Act.

The MAI Systems court reached a flawed decision that threatens the Copyright Act's adaptability to changing technologies. To maintain flexibility, courts must consider the Copyright Act as a whole in light of common practices in the industry. By evaluating infringement claims involving licensing agreements and third parties under section 117 and section 107 respectively, courts can adhere to the Copyright Act's underlying principles and ensure the promotion of progress in art and science.

\textsuperscript{178} See Tapp & Wanat, supra note 53, at 258.
\textsuperscript{179} Id.