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Intellectual Property - Sega Enterprises Ltd. v. Accolade, Inc.: Setting the Standard on Software Copying in the Computer Software Industry

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INTELLECTUAL PROPERTY

SUMMARY

SEGA ENTERPRISES LTD. v. ACCOLADE, INC.: SETTING THE STANDARD ON SOFTWARE COPYING IN THE COMPUTER SOFTWARE INDUSTRY

I. INTRODUCTION

In *Sega Enterprises Ltd. v. Accolade, Inc.*,[1] the Ninth Circuit held that reverse engineering[2] of a copyrighted computer program constitutes a fair use[3] of such program when it is the only way to gain access to the unprotected aspects[4] of a pro-

1. Sega Enterprises Ltd. v. Accolade, Inc., 977 F.2d 1510 (9th Cir. 1992) (per Reinhardt, J.; the other panel members were Canby, J., and Leavy, J.).

2. Reverse engineering involves creating a new program based on information obtained from the original program. Mindy J. Weichselbaum, *The EEC Directive on the Legal Protection of Computer Software Programs and U.S. Copyright Law: Should Copyright Law Permit Reverse Engineering of Computer Programs?*, 14 FORDHAM INT'L L.J. 1027, 1029 (1991).

3. The fair use of a copyrighted work . . . is not an infringement of copyright. 17 U.S.C. § 107 (1988). 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. 17 U.S.C. § 107 (1988).

4. In no case does copyright protection for an original work extend to any idea, procedure, process system, method of operation, concept, principle, or discovery, regardless of the form in which it is described, explained, illustrated, or embodied in such work. 17 U.S.C. § 102(b) (1988).

gram.[5] Thus, when reverse engineering is a necessary step to examine unprotected ideas embodied in a computer program, the process does not violate the Copyright Act.[6] Furthermore, the court held that when there is no other known or available method of access to a computer, the use of a computer manufacturer's security system initialization code[7] by a rival does not violate the Lanham Trademark Act.[8] Consequently, the Ninth Circuit's ruling moved the federal courts toward a consensus that trademark and copyright protection must be understood within the context of promoting competition in the unique industry of computer software.[9]

II. FACTS

Sega Enterprises, Ltd. ("Sega") develops and markets video entertainment software and systems, including the "Genesis" console and video game cartridges.[10] Accolade is an independent developer, manufacturer, and marketer of computer entertainment software.[11] Among the video game cartridges manufactured by Accolade are some which are compatible with the Genesis console, as well as game cartridges that are compatible with other computer systems.[12]

Sega licenses its copyrighted computer code and its "SEGA" trademark to a number of independent developers of

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5. *Sega*, 977 F.2d at 1514.

6. *Id.* Generally, under the Copyright Act the owner of copyright has exclusive rights to reproduce the copyrighted work, to prepare derivative works based upon the copyrighted work, or to distribute copies of the copyrighted work to the public. 17 U.S.C. § 106 (1988).

7. Sega licensed a patented trademark security system (TMSS) for use with the Genesis home entertainment system. When a game cartridge is inserted, a microprocessor contained in the Genesis III searches the game program for four bytes of data consisting of the letters S-E-G-A (the TMSS initialization code). If the Genesis III finds the TMSS initialization code in the right location, the game is rendered compatible and will operate on the console. *Sega*, 977 F.2d at 1515.

8. *Id.* at 1514. Under the Lanham Act, any person who uses a word, term, name, symbol, device, or any false designation of origin in commerce which is likely to cause confusion or mistake as to the affiliation of that person with another, or as to origin, sponsorship, or approval of his or her goods, services, or commercial activities by another person, shall be liable in a civil action. 15 U.S.C. § 1125.

9. Susan Orenstein, *Standard Set on Software Copying*, THE RECORDER, Oct. 21, 1992, at 1.

10. Sega Enterprises Ltd. v. Accolade, Inc., 977 F.2d 1510, 1514 (9th Cir. 1992).

11. *Id.*

12. *Id.*

computer software games.[13] Those licensees develop and sell Genesis-compatible video games in competition with Sega.[14] Accolade is not, and never has been, a licensee of Sega.[15]

Accolade used a two-step process to make its video games compatible with the Genesis console.[16] First, it reverse engineered Sega's video programs in order to discover the requirements for compatibility with the Genesis Console.[17] As part of the reverse engineering process, Accolade used a method called "disassembly" or "decompilation"[18] to transform the machine-readable object code contained in commercially available copies of Sega's game cartridges into a human-readable source code.[19] Accolade engineers studied the source code, then loaded the disassembled code into a computer to discover the interface specifications for the Genesis console by modifying the programs and studying the results.[20] At the end of the reverse engineering process, Accolade created a development manual incorporating the information discovered about the requirements for a Genesis-compatible game.[21] The manual contained only functional descriptions of the interface requirements and did not include any of Sega's code.[22]

In the second stage of the process, Accolade created its own games for the Genesis console.[23] According to Accolade, at this stage it did not copy Sega's programs, but relied only on the

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13. *Sega*, 977 F.2d at 1514.
14. *Id.*
15. *Id.*
16. *Sega*, 977 F.2d at 1514.
17. *Id.*
18. Computer programs are written in specialized alphanumeric languages, or "source code". In order to operate a computer, source code must be translated into computer readable form, or "object code". Object code uses only two symbols, 0 and 1, in combinations which represent the alphanumeric characters of the source code. A program written in source code is translated into object code using a computer program called an "assembler" or "compiler", and then imprinted on a silicon chip for commercial distribution. Devices called "disassemblers" or "decompilers" can reverse this process by reading the electronic signals for "0" and "1" that are produced while the program is being run, storing the resulting object code in computer memory, and translating the object code into source code. *Id.* at 1515 n.2.
19. *Sega*, 977 F.2d at 1514.
20. *Id.* at 1515.
21. *Id.*
22. *Sega*, 977 F.2d at 1515.
23. *Id.*

information concerning interface specifications for Genesis contained in its development manual.[24] Accolade maintains that with the exception of the interface specifications, none of the code in its games is derived in any way from the examination of Sega's code.[25]

Before Accolade began to reverse engineer Sega's games, Sega began to explore methods of protecting its trademark rights in the Genesis console and Genesis-compatible games.[26] While the development of its own trademark security system (TMSS) was pending, Sega licensed a patented TMSS for use with the Genesis home entertainment system.[27]

The most recent version of the Genesis console, the "Genesis III", incorporates the licensed TMSS.[28] If the Genesis III finds the TMSS initialization code in the right location, the game is rendered compatible and will operate on the console.[29] In such case, the TMSS initialization code prompts a visual display which reads, "PRODUCED BY OR UNDER LICENSE FROM SEGA ENTERPRISES LTD."[30]

Accolade learned that the TMSS initialization code would have to be incorporated into its own game programs in order for its game cartridges to operate on the Genesis III.[31] Thus, in a second round of reverse engineering, Accolade added the code to its development manual in the form of a standard header file to be used in all games.[32] According to Accolade the header file is the only portion of Sega's code that it copied into its own game programs.[33] All of Accolade's game cartridges which are used in the Genesis III contain the TMSS initialization code.[34] Accolade

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24. *Id.*
25. *Sega*, 977 F.2d at 1515.
26. *Id.* Sega had grown concerned about the rise of piracy in Taiwan and other Southeast Asian countries to which it exported products. Taiwan . . . does not recognize foreign copyrights, but does allow prosecution of trademark counterfeiters. *Sega*, 977 F.2d at 1515.
27. *Sega*, 977 F.2d at 1515.
28. *Id.*
29. *Id.*
30. *Sega*, 977 F.2d at 1515.
31. *Id.*
32. *Id.* at 1516.
33. *Sega*, 977 F.2d at 1516.
34. *Id.*

claims it did not learn until after the Genesis III was released that the header file caused the program to display the Sega Message.[35]

Sega filed suit against Accolade alleging trademark infringement under the Lanham Act[36], and copyright infringement under the Copyright Act.[37] Accolade filed a counterclaim against Sega for false designation of origin under the Lanham Act.[38] The parties each filed cross-motions for preliminary injunctions on their respective claims.[39]

The district court ruled that Sega had a probability of success on its trademark infringement claim because it found that it was possible either to create a compatible game program which did not contain the TMSS code, or to modify the game program so the Sega message would not appear.[40] Furthermore, with respect to Sega's copyright claim, the district court rejected Accolade's contention that intermediate copying of a computer object code does not constitute infringement under the Copyright Act.[41] It found that Accolade had disassembled Sega's code for a commercial purpose, and that Sega had likely lost sales of its games as a result of Accolade's copying.[42] The court further found that there were alternatives to disassembly that Accolade could have used in order to study the functional requirements for Genesis compatibility.[43] Accordingly, it rejected Accolade's fair use defense to Sega's copyright infringement claim.[44]

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35. *Id.*

36. In Sega's second amended complaint it claimed that Accolade's use of the name and "SEGA" trademark constitute a false designation of origin which is likely to mislead, deceive, or confuse and has misled, deceived, or confused ordinarily prudent customers into believing Accolade's video game cartridges are licensed and approved by Sega. *See* Lanham Act, 15 U.S.C. § 1125.

37. Sega contended in its complaint that Accolade's conduct in making intermediate copies of its game programs and derivative works infringed on its exclusive rights as provided by the Copyright Act, 17 U.S.C. § 106.

38. *Sega*, 977 F.2d at 1516. Accolade's claims are centered on allegations that Sega falsely attributed the source of Accolade's products to themselves, thereby injuring Accolade's reputation as an independent producer of video game products. Sega Enterprises Ltd. v. Accolade Inc., No. CV-91-3871, slip op. at 3 (N.D.CA. Apr. 3, 1992).

39. *Sega*, 977 F.2d at 1516.

40. *Id.* at 1517.

41. *Id.*

42. *Sega*, 977 F.2d at 1517.

43. *Id.*

44. *Id.*

Based on its conclusion that Sega is likely to succeed on the merits of its claims, the district court enjoined Accolade from: (1) disassembling Sega's copyrighted code; (2) using or modifying Sega's copyrighted code; (3) developing, manufacturing, distributing, or selling Genesis-compatible games that were created in whole or in part by means that included disassembly; and (4) manufacturing, distributing, or selling any Genesis-compatible game that prompts the Sega message.[45]

III. BACKGROUND

Over the past several years a controversy has arisen over how much freedom companies should have in achieving compatibility with competitive computer programs.[46] Those in favor of promoting compatibility argue that copyright protection for computer programs should be limited.[47] They claim that too much protection undermines the competitiveness of the American computer industry in that it allows major software makers to create a monopoly at the expense of small and medium size software manufacturers.[48] To achieve compatibility, they need the freedom to study the rules and principles which govern computer systems and to apply that knowledge to new products.[49]

Opposing interest groups, however, argue that copyright protection is necessary to protect their investment in developing software.[50] They claim companies supporting compatibility really only want a cheaper method to make competing products.[51] They argue that, "companies should either invest the time and money to come up with their own products or take out licenses on systems with which they want to work."[52]

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45. *Sega*, 977 F.2d at 1517.

46. Susan Orenstein, *Whose Protectionism is This Anyway?*, THE RECORDER, July 28, 1992 at 10.

47. *Id.* at 1. Among those in favor of limiting copyright protection for computer programs is the American Committee for Interoperable Systems. The group writes amicus briefs in key cases and lobbies public officials. The group filed an amicus brief in the Sega case. *Id.*

48. *Id.*

49. *Id.* at 10.

50. *Id.* at 11. Those promoting copyright protection include IBM, Apple Computer, and Intel Corp. *Id.* at 10.

51. *Id.*

52. *Id.*

In the recent case of *Computer Associates International, Inc. v. Altai, Inc.*,[53] the Second Circuit recognized that, "[c]opyright law seeks to establish a delicate equilibrium. On the one hand, it affords protection to authors as an incentive to create, and, on the other, it must appropriately limit the extent of protection so as to avoid the effects of monopolistic stagnation."[54]

IV. COURT'S ANALYSIS

The Ninth Circuit held that where reasons exist for studying the unprotected aspects of a program, disassembly for purposes of such study constitutes a fair use of the program.[55] As such, it does not violate the Copyright Act.[56]

Section 107 of the Copyright Act provides that, "[t]he fair use of a copyrighted work . . . is not an infringement of copyright."[57] In determining whether a use is fair the factors to be considered 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.[58]

With respect to the first statutory factor, the Ninth Circuit concluded that although Accolade was copying Sega's code to serve a commercial purpose, its direct use of the copyrighted material was to study the functional requirements for Genesis

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53. Computer Assoc. Int'l, Inc. v. Altai, Inc., 1992 WL 139364 (2d Cir. June 22, 1992), *withdrawn and superceded on reh'g*, 982 F.2d 693 (2d Cir 1991).

54. *Id.*

55. Sega Enterprises Ltd. v. Accolade, Inc., 977 F.2d 1510, 1518 (9th Cir. 1992).

56. *Id.*

57. 17 U.S.C. § 107 (1988).

58. *Id.*

compatibility so that it could modify existing games and make them usable for the Genesis console.[59] Furthermore, the Ninth Circuit determined that no other method for studying those requirements was available to Accolade.[60] Consequently, the court found that Accolade copied Sega's code for a legitimate purpose and that the commercial aspect of its use was of minimal significance.[61]

Concerning the second statutory factor, the court noted that because of the hybrid nature of computer programs, there is no settled standard for identifying what is protected expression and what is unprotected idea in a case involving the alleged infringement of a copyright in computer software.[62] The record, however, clearly established that disassembly of the object code in Sega's video games was necessary to understand the functional requirements for Genesis compatibility.[63] Thus, disassembly under these circumstances must constitute a fair use, otherwise the owner of the copyright gains a de facto monopoly over the functional aspects of his work that are expressly denied copyright protection.[64]

Applying the third statutory factor, the court noted that this factor weighs against Accolade because Accolade disassembled entire programs written by Sega.[65] However, the court stated that the fact that an entire work was copied does not preclude a finding of fair use.[66]

Finally, as to the fourth statutory factor, the court maintained that Sega will experience an economic loss due to Accolade's actions.[67] However, the court emphasized that Accolade's

59. *Sega*, 977 F.2d 1522.
60. *Id.* at 1523.
61. *Id.*
62. *Sega*. 977 F.2d at 1524.
63. *Id.* at 1526. The Ninth Circuit found that the district court committed clear error in holding that there were alternatives to disassembly that Accolade could have used to study the functional requirements for Genesis compatibility. The court noted that interface procedures for the Genesis console are distributed for public use only in object code. Since humans cannot read object code, it must be disassembled either by hand or machine. *Id.*
64. *Sega*, 977 F.2d at 1526.
65. *Id.*
66. *Id.*
67. *Sega*, 977 F.2d at 1523.

actions will not significantly affect the market for Sega's products because a person could easily purchase both Sega and Accolade video games.[68] The Court reasoned that, "an attempt to monopolize the market by making it impossible for others to compete runs counter to the statutory purpose of promoting creative expression and cannot constitute an equitable basis for invoking the fair use doctrine."[69] Thus, the court held this fourth factor weighs in Accolade's favor, notwithstanding the minor loss Sega may suffer.[70]

Therefore, the Ninth Circuit concluded that Accolade has a far better case on the issue of fair use than Sega since three out of the four statutory factors weigh in its favor. Consequently, the Ninth Circuit held that where disassembly is the only way to gain access to the ideas and functional elements embodied in a copyright program and where there is a legitimate reason for seeking such access, disassembly is a fair use of the copyrighted work. [71]

With respect to the trademark issue, the Ninth Circuit concluded that because Sega's trademark security system has the effect of regulating access to the Genesis console, and because there is no indication in the record of any public or industry awareness of any alternate method of gaining access to the Genesis console, Sega was primarily responsible for any resultant confusion from its use.[72] Thus, Sega did not show a likelihood of success on the merits of its Lanham Act claims.[73]

V. CONCLUSION

The Ninth Circuit's holding in Accolade is a substantial step toward setting a standard of applying copyright protection to computer programs. Although the court did not decide all the issues currently being debated in the computer industry regarding software copying, it did decide that reverse engineering, the major process for obtaining compatibility, does not violate copy-

68. *Id.*
69. *Id.*
70. *Sega*, 977 F.2d at 1524.
71. *Id.* at 1527.
72. *Id.* at 1528.
73. *Sega*, 977 F.2d at 1528.

right laws in certain circumstances.

Also, the court held that disassembly of a computer program will constitute a fair use of that program when it is the only way to gain access to the functional elements embodied in the program, and when there is a legitimate reason for seeking such access. According to the court, seeking information to develop competitive products constitutes a legitimate reason. Thus, the Ninth Circuit's holding opens up the computer software market to more competition, and creates an incentive for software developers to develop competitive products.

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