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Touro Law Review

Volume 37 | Number 2

Article 16

2021

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Recommended Citation

Gao, Ziyi (2021) "The Sword of Damocles: How the Fair Use Defense Application Affects the Computer Programming Area," *Touro Law Review*: Vol. 37: No. 2, Article 16.

Available at: <https://digitalcommons.tourolaw.edu/lawreview/vol37/iss2/16>

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THE SWORD OF DAMOCLES: HOW THE FAIR USE DEFENSE APPLICATION AFFECTS THE COMPUTER PROGRAMMING AREA

Ziyi Gao*

I. INTRODUCTION

The invention and popularity of electronic devices and computer programming has rapidly changed our lives. The software on computers and phones brings human life to a new era, makes people's lives more convenient, and encourages people to express their brilliant ideas. Software developers express their ideas through writing lines of code, weave the code into software that can achieve certain functions, which in turn makes people's lives more colorful and convenient when they use electronic devices. Copyright law is dedicated to protecting creators' rights while maintaining creativity. However, technology companies should be aware of a Sword of Damocles¹ hanging above their heads: copyright infringement.²

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¹ Evan Andrews, *What was the Sword of Damocles?* HISTORY (Feb. 17, 2016), <https://www.history.com/news/what-was-the-sword-of-damocles>. "The sword of Damocles is now commonly used as a catchall term to describe a looming danger."

² Will Kenton, *Copyright Infringement*, INVESTOPEDIA (Jun. 12, 2020), <https://www.investopedia.com/terms/c/copyright-infringement.asp>. "Copyright infringement is the use or production of copyright-protected material without the permission of the copyright holder." *Id.*

Fair use, as an affirmative defense, excuses unauthorized uses from copyright infringement.³ Its purpose is to “reconcile the respective speech-suppressive and speech-protective positions.”⁴ However, the fair use defense is very confusing, especially when it is applied in the software area, and thus it is hard for tech companies to predict the courts’ decisions.⁵ Although fair use can be analyzed through four statutory factors, courts often struggle to resolve the ambiguities in the statutory language and how to weigh the statutory factors.⁶ Therefore, courts tend to have their own different interpretations and standards, and they often disagree with each other.⁷

This Note analyzes the fair use doctrine in the computer programming area. Part II of the Note discusses the history of copyright protection in the computer programming field and the fair use doctrine. Part II. A i and ii addresses the software development and intellectual property protection and merger doctrine in the computer program area. Part II. A iii and iv reviews the software copyright protection’s legislative history and copyright jurisprudence. Part II. B discusses the background of the fair use doctrine. Part II. C analyzes two representative cases involving fair use doctrine in the software area in depth.

³ Eric J. Schwartz, *Joking Aside: Recent Copyright Infringement Cases Reexamine the Distinction between Satire and Parody in Determining Fair Use*, 30-MAY L.A. LAW 33 at *1 (2007).

⁴ Ned Snow, *The Forgotten Right of Fair Use*, 62 CASE W. RES. L. REV. 135, 138 (2011).

⁵ Matthew Sag, *Predicting Fair Use*, 73 OHIO ST. L.J. 47, 48-49 (2012).

⁶ *Fair Use*, JUSTIA, <https://www.justia.com/intellectual-property/copyright/fair-use/> (last updated Apr. 2018).

⁷ *Id.*; see, e.g., *Cariou v. Prince*, 714 F.3d 694 (2d Cir. 2013) (“[t]o qualify as a fair use under copyright law, a new work generally must alter the original with new expression, meaning, or message”); *Seltzer v. Green Day, Inc.*, 725 F.3d 1170 (9th Cir. 2013) (“an allegedly infringing work is typically viewed as transformative as long as new expressive content or message is apparent, this is so even where—as here—the allegedly infringing work makes few physical changes to the original or fails to comment on the original”); *Kienitz v. Sconnie Nation LLC*, 766 F.3d 756 (7th Cir. 2014) (questioning Second Circuit’s transformative use test set forth in *Cariou* because ask exclusively whether the work is transformative will replace the list in 17 U.S.C. § 107 and it would also override derivative works protection set forth in 17 U.S.C. § 106(2)).

In Part III, the Note comments on the Supreme Court's recent decision in *Google LLC v. Oracle America Inc.*⁸ This Note focuses on Google's fair use applicability issue. The Note argues that the Court correctly incorporated the public benefit consideration into the fair use doctrine yet failed to go further to provide detailed guideline on how to consider the public benefit properly. Additionally, the Note contends that the Supreme Court correctly held that Google's use was transformative, yet the Court should have provided a clear definition of "transformative use." Moreover, the Note states that the Supreme Court correctly held that Google's use did not harm Oracle's actual or potential markets. Finally, the Note calls for the Court to provide a clear standard for weighing the four statutory fair use factors.

II. BACKGROUND

A. Copyright protection in computer programming

The legislative history of the Copyright Act⁹ provides insight into the interaction of copyright protection and the software industry.

i. Software Development

Software is a tool for humans to instruct the computer how to execute tasks.¹⁰ Software consists of data and various programming instructions.¹¹ The instructions are written by lines of code, which is the way that computer programmers express their ideas.¹² The ultimate usage of software is to make computers execute tasks, which makes the software capable not only of expressing ideas but also serves a functional purpose.¹³

⁸ 886 F.3d 1179 (Fed. Cir. 2018).

⁹ Pub. L. No. 94-553, 90 Stat. 2541 (1976) (codified as amended in scattered sections of 17 U.S.C.).

¹⁰ Micah Yost, *A Brief History of Software Development*, MEDIUM (Jan. 25, 2018), <https://medium.com/@micahyost/a-brief-history-of-software-development-f67a6e6ddae0>.

¹¹ *Id.*

¹² *Id.*

¹³ Ralph Oman, *Computer Software As Copyrightable Subject Matter: Oracle v. Google, Legislative Intent, And The Scope Of Rights In Digital Works*, 31 HARV. J.

Software has decades of history. Tom Kilburn wrote the first software in 1948.¹⁴ The software industry has developed quickly since the 1980s when personal computers were invented and then became more accessible to society.¹⁵ In the 1990s, the open-source software entered the mainstream.¹⁶ Open-source software can be inspected, modified, and enhanced.¹⁷ Students can use the open-source software to learn how to improve software, the source code can inspire computer programmers, and even non-programmers can benefit from the software by making changes and customizing it.¹⁸ After mobile devices like smartphones entered the market and became popular, applications used on mobile devices began to explode.¹⁹ Today, almost everybody relies on computers and mobile devices to work and socialize.²⁰ The software industry continues to evolve, producing software and applications that make people's lives more convenient.

ii. *Intellectual Property protection for computer programs and the merger doctrine*

Technology has developed more rapidly than the law. Policymakers struggled to create laws that would effectively protect software work and protect the rights of developers and tech companies.²¹ Intellectual property law protects authors' rights in their creative works that include literature, art, and musical

LAW & TECH. 639, 644 (2018),
<https://jolt.law.harvard.edu/assets/articlePDFs/v31/31HarvJLTech639.pdf>.

¹⁴ Yost, *supra* note 10.

¹⁵ *Id.*

¹⁶ *Id.*

¹⁷ *What is open source?*, OPENSOURCE.COM (Nov. 1, 2012),
<https://opensource.com/resources/what-open-source>.

¹⁸ *Id.*

¹⁹ Yost, *supra* note 10.

²⁰ Kristen Herhold, *How People Use Social Media in 2018*, THE MANIFEST (Oct. 17, 2018), <https://themanifest.com/social-media/how-people-use-social-media-2018>.

²¹ See Peter S. Menell, *Rise of the API Copyright Dead?: An updated epitaph for copyright protection of network and functional features of computer software*, 31 HARV. J. LAW & TECH. 305, 314 (2018).

compositions.²² Software consists of lines of code written by an engineer, making it a literary work. Thus, software easily falls into the intellectual property system.²³

Patent law protects new inventions that are useful.²⁴ The goal for computer programs is to serve a functional purpose; it makes perfect sense to protect computer programs under patent law. However, patent law application is thought to be time-consuming and costly, and the period of protection is short.²⁵

Copyright law has long served as a tool to protect aesthetic creativity.²⁶ Copyright law protects “literary, musical, dramatic, and choreographic works, pantomimes, and pictorial, graphic, or sculptural works.”²⁷ However, the copyright does not protect any “idea, procedure, process, system, method of operation, concept, principle, or discovery.”²⁸ Computer programs consist of a programming “operation, concept, principle, or discovery.”²⁹ Considering the low application price, easy application process, and long period of protection, computer programs are suitable for copyright protection.³⁰

However, fitting software into copyright protection can be hard because of the difficulty of separating the functional from the creative expression. Merger doctrine in the computer software area was born in *Apple Computer, Inc. v. Franklin Computer Corp.*³¹ Under the merger doctrine, the expression of a particular idea is not protected by copyright when there is effectively only one way or a few ways to express that idea.³² It can be used as a complete defense

²² See 17 U.S.C. § 101.

²³ See Menell, *supra* note 21.

²⁴ What is Patent Law?, FINDLAW (June 20, 2016), <https://www.findlaw.com/hirealawyer/choosing-the-right-lawyer/patents.html>.

²⁵ See Peter S. Menell, *Tailoring Legal Protection for Computer Software*, 39 STAN. L. REV. 1329, 1347-51 (1987).

²⁶ See 17 U.S.C. § 102.

²⁷ *Id.*

²⁸ See *id.* § 102 (b).

²⁹ See *id.*

³⁰ Menell, *supra* note 21, at 314.

³¹ 714 F.2d 1240, 1253 (3d Cir. 1983).

³² See Lewis R. Clayton, *COPYRIGHT LAW the Merger Doctrine*, THE NAT’L L.J. (June 6, 2005); Guodong Fu, *GOOGLE V. ORACLE: Weighing Fair Use Factors in Software Copyright Infringement Cases*, 2020 B.C. INTELL. PROP. & TECH. F.1, 4 (2020).

to copyright infringement in computer program cases,³³ or it can be related to the copyrightability issue.³⁴ In the computer program area, the idea/expression merger is not the only type of merger; courts have also dealt with some process/expression mergers.³⁵ Merger doctrine is critical in the case law relating to copyright protection in the computer program area because computer programs have both a literary nature, expressed by written code, and a utilitarian nature, instructing computers to execute certain tasks. The merger doctrine can make computer programs uncopyrightable because it is difficult to distinguish between the expression and the idea or process.

iii. *Copyright legislative history*

Faced with the dilemma of fitting software into copyright law protection, Congress established the National Commission on New Technological Uses of Copyrighted Works (CONTU) in 1974.³⁶ CONTU's purpose is to study issues arising from copyrighted works in the software area and recommend revisions of federal intellectual property law.³⁷ As a temporary solution, Congress included software within the scope of copyright protection in the Copyright Act of 1976 (1976 Act).³⁸ However, the rest of the 1976 Act provisions "maintained traditional exclusions of ideas and functional features."³⁹

³³ Pamela Samuelson, *Reconceptualizing Copyright's Merger Doctrine*, 63 J. COPYRIGHT SOC'Y U.S.A. 417, 428 (2016); see *Lexmark Int'l, Inc. v. Static Control Components, Inc.*, 387 F.3d 522, 540-41 (6th Cir. 2004) (holding that exact copying excused on merger grounds because it was necessary for achieving compatibility).

³⁴ See, e.g., *Kregos v. Assoc. Press*, 937 F.2d 700, 705 (2d Cir. 1991).

³⁵ See, e.g., *Gates Rubber Co. v. Bando Chem. Indus., Ltd.*, 9 F.3d 823, 837-38 (10th Cir. 1993) ("[C]opyright protection is denied to expression that is inseparable from or merged with the ideas, processes, or discoveries underlying the expression."); *Atari Games Corp. v. Nintendo of America, Inc.*, 975 F.2d 832 (Fed. Cir. 1992) ("[I]f the patentable process is embodied inextricably in the line-by-line instructions of the computer program . . . the process merges with the expression and precludes copyright protection.").

³⁶ Jule Sigall, *Copyright Infringement was Never this Easy: RAM Copies and their Impact on the Scope of Copyright Protection for Computer Programs*, 45 CATH. U.L. REV. 181, 187 (1995).

³⁷ *Id.*

³⁸ Pub. L. No. 94-553, 90 Stat. 2541 (1976), (codified as amended in scattered sections of 17 U.S.C.).

³⁹ See Menell, *supra* note 21, at 315.

After careful consideration, CONTU concluded that the computer software work should be protected under copyright law, even though copyright law's essential principle is not to protect any idea.⁴⁰ CONTU recommended two modest changes to the 1976 Act: (1) defining a computer program as "a set of statements or instructions to be used directly or indirectly in a computer in order to bring about a certain result"; and (2) allowing "the rightful possessor of a copy of a computer program" to run the program and to make a backup copy of the program without infringement liability.⁴¹ The CONTU Final Report further indicated that while "one is always free to make a machine perform any conceivable process (in the absence of a patent) . . . one is not free to take another's program," subject to copyright's limiting doctrines, originality, and the idea-expression dichotomy.⁴²

Congress agreed with CONTU and in its 1980 amendments to federal copyright law, incorporated CONTU's recommendation.⁴³ The 1980 amendments defined the term "computer program" as "a set of statements or instructions to be used directly or indirectly in a computer in order to bring about a certain result."⁴⁴ Congress intended that software developers and tech companies could be protected by copyright law for their "programming design and coding choices to the extent that the expression was separable from the underlying ideas while recognizing limitations on copyright protection for computer programs."⁴⁵ In this way, the creative effort in a software developing process gains protection from infringement,

⁴⁰ *Id.*

⁴¹ FINAL REPORT OF THE NAT'L COMM'N ON NEW TECHNOLOGY USES OF COPYRIGHTED WORKS (1979) <http://digital-law-online.info/CONTU/contu6.html> [hereinafter CONTU Final Report].

⁴² *Id.* Courts have treated CONTU's Final Report as legislative history for the 1980 amendments to the 1976 Act. *See* *Apple Comput., Inc. v. Franklin Comput. Corp.*, 714 F.2d 1240, 1252 (3d Cir. 1983); *Vault Corp. v. Quaid Software Ltd.*, 847 F.2d 255, 260-61 (5th Cir. 1988).

⁴³ Act of Dec. 12, 1980, Pub. L. No. 96-517, 94 Stat. 3007, 3028 (1980) (codified as amended in scattered sections of 17 U.S.C.).

⁴⁴ 17 U.S.C. §101.

⁴⁵ *See* Peter S. Menell, *API Copyrightability Bleak House: Unraveling and Repairing the Oracle v. Google Jurisdictional Mess*, 31 BERKELEY TECH. L.J. 1515, 1521 (2016).

whereas the underlying idea and “unoriginal programming choices remain free for others to use.”⁴⁶

iv. Copyright jurisprudence

Courts struggled to identify the line between protected and unprotected computer software. For example, the Ninth Circuit recognized that “[c]omputer programs pose unique problems for the application of the ‘idea/expression distinction’ that determines the extent of copyright protection.”⁴⁷ The court further noted that “[t]here is no settled standard for identifying what constitutes a protected expression and what constitutes an unprotected idea in cases involving copyright infringement issues in computer software because of the hybrid nature of computer programs.”⁴⁸ This Note analyzes some of the important copyright infringement cases in the software area.

1. Whelan Associates, Inc. v. Jaslow Dental Laboratory, Inc.⁴⁹

The owner of a dental laboratory hired a software firm to design a computer program for the laboratory that would organize the bookkeeping and administrative tasks.⁵⁰ Whelan, the principal programmer, customized a computer program that runs on the laboratory’s IBM Series One computer.⁵¹ According to the parties agreement terms, Whelan would retain the copyright in the program, and her company would use its best efforts to improve the program, and the laboratory would use its best efforts to market the program.⁵² Later, one of the officers and shareholders of the laboratory created a version of the program that could run on other computer systems and started marketing the program.⁵³ Whelan sued the laboratory for

⁴⁶ See Menell, *supra* note 21, at 315.

⁴⁷ Sega Enterprises Ltd. v. Accolade, Inc., 977 F.2d 1510, 1524 (9th Cir. 1992).

⁴⁸ *Id.*

⁴⁹ 797 F.2d 1222 (3d Cir. 1986).

⁵⁰ *Id.* at 1225.

⁵¹ *Id.*

⁵² *Id.* at 1226.

⁵³ *Id.*

copyright infringement.⁵⁴ The district court held in favor of Whelan, reasoning that both of the programs' "structure and the overall organization were substantially similar."⁵⁵ The issue on appeal was whether similarity in the overall structure of the programs triggered copyright infringement.⁵⁶

The Third Circuit Court of Appeals used "a single substantial similarity inquiry according to which both lay and expert testimony would be admissible."⁵⁷ The court suggested that:

[T]he purpose or function of a utilitarian work would be the work's idea, and everything that is not necessary to that purpose or function would be part of the expression of the idea. Where there are many means of achieving the desired purpose, then the particular means chosen is not necessary to the purpose; hence, there is expression, not idea.⁵⁸

Using this standard, the Third Circuit held that the functionality of the program was to "aid in the business operations of a dental laboratory."⁵⁹ The structure of the program "was not essential to that task," for there were programs that existed that "perform[ed] the same functions but have different structures."⁶⁰ The structure of the program, therefore, was part of the expression that was copyrightable.⁶¹ The court's single-step substantial similarity test has been criticized by numerous cases for being too simplified and overbroad.⁶²

2. Computer Associates International,

⁵⁴ *Id.* at 1227.

⁵⁵ *Id.* at 1228-29.

⁵⁶ *Id.* at 1234.

⁵⁷ *Id.*

⁵⁸ *Id.* at 1236 (citation omitted).

⁵⁹ *Id.* at 1238.

⁶⁰ *Id.*

⁶¹ *Id.* at 1239.

⁶² *See, e.g.,* CMAX/Cleveland, Inc. v. UCR, Inc., 804 F. Supp. 337, 352 (M.D. Ga. 1992) ("Unfortunately, the simplicity that makes the test so attractive, also makes it 'conceptually overbroad' and 'descriptively inadequate.'"); Comput. Assocs. Int'l., Inc. v. Altai, Inc., 775 F. Supp. 544, 559 (E.D.N.Y. 1991) (criticizing *Whelan* test as inadequate and inaccurate).

Inc. v. Altai, Inc.⁶³

Computer Associates (“CA”) developed and sold a program named SCHEDULER, which was a job scheduling program designed for IBM mainframe computers.⁶⁴ The program was successful partly because it had a sub-program called ADAPTER that enabled SCHEDULER to be compatible with “three operating systems: DOS/VSE, MVS, and CMS.”⁶⁵ The users can use SCHEDULER on any of IBM’s three mainframes without the need to customize their programs.⁶⁶ In 1982, Altai, another computer software company, began marketing its own job scheduling program named ZEKE.⁶⁷ Altai wanted to make an MVS version of ZEKE and decided that the best way to achieve this goal was to introduce a “common system interface” component into ZEKE, and the new component-program was named OSCAR 3.4.⁶⁸ Thirty percent of OSCAR’s code was copied directly from CA’s ADAPTER program.⁶⁹ After CA served the summons and complaint on Altai, it immediately took action to rewrite the program and developed OSCAR 3.5.⁷⁰ Despite Altai’s effort to rewrite OSCAR, CA sued Altai for copyright infringement.⁷¹

At trial, the District Court focused on comparing the similarities between ADAPTER and OSCAR 3.5.⁷² The most important evaluation factor – code, “presents no similarity at all” since Altai rewrote the program.⁷³ The court further found that “only a few of the lists and macros were similar to protected elements in ADAPTER.”⁷⁴ The other similarities were either functional elements or in the public domain, neither of which is protectable under copyright law.⁷⁵ The court ruled in favor of Altai because there was

⁶³ 982 F.2d 693 (2d Cir. 1992).

⁶⁴ *Id.* at 698.

⁶⁵ *Id.*

⁶⁶ *Id.* at 699.

⁶⁷ *Id.*

⁶⁸ *Id.* at 699-700.

⁶⁹ *Id.* at 700.

⁷⁰ *Id.*

⁷¹ *Id.*

⁷² *Comput. Assocs. Int’l., Inc. v. Altai, Inc.*, 775 F. Supp. 544, 560-62 (E.D.N.Y. 1991).

⁷³ *Id.* at 562.

⁷⁴ *Id.*

⁷⁵ *Id.*

no substantial similarity between the two programs.⁷⁶ On appeal, CA argued that the district court erred in ruling the OSCAR 3.5 and the ADAPTER were not substantially similar.⁷⁷

To determine this issue, the Second Circuit Court of Appeals used the abstraction-filtration-comparison test.⁷⁸ The court fleshed out the framework of the three-step test:

In ascertaining substantial similarity under this approach, a court would first break down the allegedly infringed program into its constituent structural parts. Then, by examining each of these parts for such things as incorporated ideas, expression that is necessarily incidental to those ideas, and elements that are taken from the public domain, a court would then be able to sift out all non-protectable material. Left with a kernel, or possible kernels, of creative expression after following this process of elimination, the court's last step would be to compare this material with the structure of an allegedly infringing program.⁷⁹

The Second Circuit affirmed the district court's decision that the two systems were not substantially similar by using Judge Pratt's three-step analysis.⁸⁰ Both courts agreed that after OSCAR was rewritten, there was no substantial similarity between the two programs' parameter lists and macros.⁸¹ The Second Circuit also agreed with the district court's holding that the "overlap exhibited between the list of services required"⁸² for two programs did not count as substantial similarity because that was "dictated by the nature of other programs with which it was designed to interact and, thus, is not protected by copyright."⁸³ The Second Circuit's three-step test is a useful method to deal

⁷⁶ *Id.*

⁷⁷ *Comput. Assocs. Int'l., Inc. v. Altai, Inc.*, 982 F.2d 693, 701 (2d Cir. 1992).

⁷⁸ *Id.* at 706. The three-step test originated from Judge Learned Hand's "abstractions test" in *Nichols v. Univ. Pictures*, 45 F.2d 119, 121 (2d Cir. 1930).

⁷⁹ *Comput. Assocs.*, 982 F.2d at 706.

⁸⁰ *Id.* at 715; see *Comput. Assocs. Int'l., Inc.*, 775 F. Supp. 544.

⁸¹ *Comput. Assocs.*, 982 F.2d at 714.

⁸² *Id.* at 715.

⁸³ *Id.*

with nonliteral expression copying and to separate the unprotectable parts from the protectable ones, which is necessary since it is meaningless and incorrect to compare unprotectable parts to see whether the two software are substantially similar.

3. **Apple Computer, Inc. v. Microsoft Corp.**⁸⁴

On March 17, 1988, Apple Computer, Inc. (Apple) filed claim against Microsoft Corp. (Microsoft) for copyright infringement.⁸⁵ After Microsoft released Windows 1.0, Apple complained that it had a similar graphical user interface (GUI) with Apple's programs.⁸⁶ The two companies then "agreed to a license, which gave Microsoft the right to use and sublicense derivative works generated by Windows 1.0 in current and future products."⁸⁷ Subsequently, Microsoft released Windows 2.0 and Windows 3.0; its licensee, Hewlett-Packard Company ("HP"), introduced NewWave 1.0 and NewWave 3.0 that "run in conjunction with Windows to make IBM-compatible computers easier to use."⁸⁸ Apple sued Microsoft because it believed that new versions exceeded the license scope and thus infringed its copyright.⁸⁹ The license agreement Apple and Microsoft signed in 1985 stated that Microsoft had the right to use the "visual displays" generated by Apples' GUI programs, which appeared as derivative works in Windows 1.0.⁹⁰

At trial, the District Court analyzed the license visual displays that were in the Windows interface.⁹¹ The court "dissected the Macintosh, Windows, and NewWave interfaces" to decide whether they are copyrightable and found a handful of elements in NewWave that were protectable.⁹² Finally, the court stated that it would

⁸⁴ 35 F.3d 1435 (9th Cir. 1994).

⁸⁵ *Apple Comput., Inc. v. Microsoft Corp.*, 759 F. Supp. 1444, 1447 (N.D. Ca. 1991).

⁸⁶ *Apple v. Microsoft*, 35 F.3d at 1438.

⁸⁷ *Id.*

⁸⁸ *Id.*

⁸⁹ *Id.*

⁹⁰ *Id.* at 1440.

⁹¹ *Id.* at 1438.

⁹² *Id.*

compare those protectable elements in NewWave with Apple elements to find whether they are substantially similar, and it would compare NewWave and Windows 2.0 and 3.0 as a whole with Apple's works for virtual identity.⁹³ The court held in favor of Microsoft and HP.⁹⁴

Apple contended that "visual display" was ambiguous, and the license did not authorize Microsoft to make later Windows versions look more like Apple's programs than Windows 1.0 looked.⁹⁵ Apple further contended that the district court erred by using its dissection method, which was to "dissect the unlicensed elements in order to determine whether remaining similarities lack originality."⁹⁶ The Ninth Circuit Court of Appeals rejected Apple's argument based on the fact that Apple licensed the right to "copy almost all of its visual displays" and "the limited number of ways that the basic ideas of the Apple GUI can be expressed differently."⁹⁷ The court noted that the GUI were partly artistic and partly functional, which helped enhance the user's communication with the computer.⁹⁸ Since the creativity of the GUI was restrained by the power and speed of the computer, design alternatives would limit the GUI's function and make it harder to use.⁹⁹

GUI audiovisual works can be analytically dissected using the same process as used in other works.¹⁰⁰ The court proposed a three-step test, similar to the Second Circuit's test in *Altai*.¹⁰¹ After using this dissection method, the district court held, and the Ninth Circuit affirmed, that no copyright infringement had occurred.¹⁰² The three-step test is a useful method to separate the expressive and functional

⁹³ *Id.*

⁹⁴ *Id.*

⁹⁵ *Id.* at 1440.

⁹⁶ *Id.* at 1439.

⁹⁷ *Id.* at 1442.

⁹⁸ *Id.* at 1444.

⁹⁹ *Id.*

¹⁰⁰ *Id.* at 1445; *see also* Data East USA, Inc. v. EPYX, Inc., 862 F.2d 204 (9th Cir. 1988) (using analytical dissection to determine whether the similarities of the audio-visual works embodied in video games resulted from unprotectable expression).

¹⁰¹ *Apple v. Microsoft*, 35 F.3d at 1445; *see* Comput. Assocs. Int'l., Inc. v. *Altai*, Inc., 982 F.2d 693, 706-11 (2d Cir. 1992).

¹⁰² *Apple v. Microsoft*, 35 F.3d at 1439-40.

elements, thus providing expanded use in the area of software copyright.

4. **Lotus Development Corp. v. Borland International, Inc.**¹⁰³

In *Lotus*, Lotus Development Corp. (Lotus) had copyrighted Lotus 1-2-3, a spreadsheet program.¹⁰⁴ It enabled users to perform accounting functions on computers.¹⁰⁵ Lotus 1-2-3 also allowed users to write “macros,” which enabled users to designate a series of command choices without the need to type the whole series every time the users tried to run certain commands.¹⁰⁶ Borland International Inc. (Borland) released the Quattro program, which included the Lotus menu command hierarchy to make the Quattro compatible with Lotus 1-2-3.¹⁰⁷ Borland copied the “words and structure of Lotus’s menu command hierarchy” but did not copy any of Lotus’s computer codes, even though the Quattro and its later versions looked virtually identical to the Lotus 1-2-3 menu tree.¹⁰⁸ Borland offered users the “Lotus Emulation Interface,” which allowed users to choose either Borland’s menu commands or Lotus’s command structure.¹⁰⁹

The District Court held that Lotus’s menu command hierarchy was copyrightable expression because there were so many possible alternate command words for the ten commands that appear in Lotus’s main menu.¹¹⁰ After the District Court’s ruling, Borland removed the Lotus Emulation Interface.¹¹¹ However, Borland’s programs were still partially compatible with Lotus 1-2-3.¹¹² After a lengthy process, the district court ordered a permanent injunction against Borland.¹¹³ Borland appealed and conceded it copied the

¹⁰³ 49 F.3d 807 (1st Cir. 1995).

¹⁰⁴ *Id.* at 809.

¹⁰⁵ *Id.*

¹⁰⁶ *Id.*

¹⁰⁷ *Id.* at 810.

¹⁰⁸ *Id.*

¹⁰⁹ *Id.*

¹¹⁰ *Id.* at 810-11.

¹¹¹ *Id.*

¹¹² *Id.*

¹¹³ *Id.*

Lotus menu command hierarchy but argued that Lotus's 1-2-3 menu command hierarchy was not protected under copyright law because "it is a system, method of operation, process, or procedure" that is covered by 17 U.S.C. § 102 (b).¹¹⁴

The First Circuit noted it was a "matter of first impression" when deciding whether the Lotus command hierarchy was copyrightable.¹¹⁵ This case was different from *Altai* and the three-step test was not applicable since the test was only useful when dealing with nonliteral copying, but the case here involved Borland's literal copying of the Lotus menu command hierarchy.¹¹⁶ The First Circuit held that the expression of Lotus was not copyrightable because "it is part of Lotus 1-2-3's 'method of operation.'" ¹¹⁷ The court explained:

We think that "method of operation," as that term is used in §102(b), refers to the means by which a person operates somethings, whether it be a car, a food processor, or a computer. Thus, a text describing how to operate something would not extend copyright protection to the method of operation itself; other people would be free to employ that method and to describe it in their own words. Similarly, if a new method of operation is used rather than described, other people would still be free to employ or describe that method.¹¹⁸

The court compared the Lotus menu command hierarchy to the video cassette recorder (VCR), reasoning that the Lotus command terms were equivalent to the buttons that control the VCR instead of the label on the VCR buttons.¹¹⁹ The First Circuit's reasoning made more sense than the district court's decision, for although there could be different ways to achieve the same goal (here, to execute

¹¹⁴ *Id.* at 812.

¹¹⁵ *Id.* at 813.

¹¹⁶ *Id.* at 814-15; *see* *Comput. Assocs. Int'l., Inc. v. Altai, Inc.*, 982 F.2d 693, 706-11 (2d Cir. 1992).

¹¹⁷ *Id.* at 816.

¹¹⁸ *Id.* at 815.

¹¹⁹ *Id.*

commands), that does not necessarily mean that the way to achieve this goal is expression. Using the First Circuit's VCR example, the buttons on the VCR could have different shapes, but fundamentally, the buttons themselves are just the tool to "operate" the VCR.

There is no settled standard to determine the copyright infringement issue in the computer programming area. When dealing with nonliteral copying expression between programs, the three-step test is very helpful, for it dissects the programs to separate copyrightable parts from ones that are not. This makes it easier for courts to compare the similarities between original and infringing programs. When dealing with a literal copying issue, the three-step test may not be so useful; courts should determine whether the original program is copyrightable by deciding whether part or all of the original program falls into subject matters that are not copyrightable under section 102 (a). If so, there can be no copyright infringement, even if literal copying occurred.

B. The Fair Use Doctrine

Fair use is an affirmative defense that excuses unauthorized users from copyright infringement. It was an English common law doctrine that was carried over to the United States.¹²⁰ There was no legislative guidance for courts to apply the fair use defense. From the very beginning of copyright protection, some of the fair use of copyrighted materials had been considered necessary to fulfill copyright's purpose, "to promote the Progress of Science and useful Arts."¹²¹ As Justice Story explained,

[I]n truth, in literature, in science and in art, there are, and can be, few if any, things, which in an abstract sense, are strictly new and original throughout. Every book in literature, science and art, borrows, and must necessarily borrow, and use much which was well known and used before.¹²²

¹²⁰ See WILLIAM F. PATRY, *THE FAIR USE PRIVILEGE IN COPYRIGHT LAW* 3-26 (2d ed. 1995) (tracing the English common law roots of the fair use doctrine).

¹²¹ *Campbell v. Acuff-Rose Music, Inc.*, 510 U.S. 569, 575 (1994) (quoting U.S. CONST. Art. I, § 8, cl. 8).

¹²² *Emerson v. Davies*, 8 F. Cas. 615, 619 (C.C.D. Mass. 1845) (No. 4, 436).

Lord Ellenborough expressed the necessity to protect copyright material and to allow others to build upon it when he wrote, “while I shall think myself bound to secure every man in the enjoyment of this copy-right, one must not put manacles upon science.”¹²³ The Supreme Court looked at history and noted that “[E]nglish courts held in some cases that in some instances ‘fair abridgment’ would not infringe an author’s rights.”¹²⁴ Although the First Congress enacted the initial copyright statute without explicitly referring to “fair use,” the doctrine was recognized by the American courts nonetheless.¹²⁵

In *Folsom v. Marsh*,¹²⁶ Justice Story examined earlier cases and distilled the methodology of applying fair use defense, noting that the courts should “look to the nature and objects of the selections made, the quantity and value of the materials used, and the degree in which the use may prejudice the sale, or diminish the profits, or supersede the objects, of the original work.”¹²⁷ The fair use defense remained a common law issue until Congress passed the 1976 Copyright Act, which states:

Notwithstanding the provisions of sections 106 and 106A, 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;

¹²³ *Campbell*, 510 U.S. at 575.

¹²⁴ *Id.* at 576; see Leval, *Toward a Fair Use Standard*, 103 HARV. L. REV. 1105 (1990).

¹²⁵ *Campbell*, 510 U.S. at 576.

¹²⁶ 9 F. Cas. 342 (C.C.D. Mass. 1841) (No.4, 901).

¹²⁷ *Campbell*, 510 U.S. at 576 (quoting *Folsom v. Marsh*, 9 F. Cas. 342, 348 (C.C.D. Mass. 1841) (No. 4, 901)).

- (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.¹²⁸

Congress intended 17 U.S.C. § 107 “to restate the present judicial doctrine of fair use, not to change, narrow, or enlarge it in any way” and intended that courts continue the common-law tradition of fair use adjudication.¹²⁹ The fair use doctrine thus requires courts to be more flexible when applying the fair use statute and avoid rigid application when doing so would stifle the creativity the law is trying to encourage.¹³⁰ However, this is not to simplify the fair use doctrine with bright-line rules, for the fair use doctrine calls for case-by-case analysis.¹³¹ The statute’s use of terms “including” and “such as,” is not meant to exclude other uses; it provides only general guidance about the sorts of copyright that courts most commonly had found to be fair uses.¹³² Also, when applying the fair use doctrine, courts will not treat the four statutory factors in isolation.¹³³ The courts explore all the factors and weigh the results together.¹³⁴

In a fair use analysis, courts first consider “the purpose and character of the use, including whether such use is of a commercial nature or is for nonprofit educational purposes.”¹³⁵ The central purpose of the inquiry is for courts to see whether the new work merely “supersedes the objects’ of the original creation,”¹³⁶ or instead “adds something new, with a further purpose or different character, altering the first with new expression, meaning, or

¹²⁸ 17 U.S.C. § 107. In 1992, Congress amended § 107 of the Copyright Act to make clear that “[t]he fact that a work is unpublished shall not itself bar a finding of fair use if such finding is made upon consideration of all the above factors.” See Fair Use of Copyrights Works, Pub. L. No. 102-492, 106 Stat. 3145 (1992) (codified as amended at 17 U.S.C. § 107).

¹²⁹ H.R. REP. NO. 94-1476, at 66 (1976).

¹³⁰ *Stewart v. Abend*, 495 U.S. 207, 236 (1990).

¹³¹ *Harper & Row Publishers, Inc. v. Nation Enter.*, 471 U.S. 539, 560 (1985); *Sony Corp. of Am. v. Universal City Studios, Inc.*, 464 U.S. 417, 448 (1984).

¹³² *Campbell v. Acuff-Rose Music, Inc.*, 510 U.S. 569, 577-78 (1994).

¹³³ *Id.* at 578.

¹³⁴ *Id.*

¹³⁵ 17 U.S.C. § 107(1).

¹³⁶ *Folsom v. Marsh*, 9 F. Cas. 342, 348 (C.C.D. Mass. 1841) (No.4, 901).

message.”¹³⁷ In other words, courts ask whether the new work is “transformative.”¹³⁸ Generally speaking, the transformative nature of the work is the most important consideration: the more transformative the new work, the less significant the other factors will be, which may weigh against a finding of fair use.¹³⁹ Even though the courts do not have to necessarily find the work transformative to hold it as fair use, transformative use will generally further the copyright goal, which is to “promote science and the arts.”¹⁴⁰

The second factor courts consider is “the nature of the copyrighted work.”¹⁴¹ This factor requires courts to recognize that “some works are closer to the core of intended copyright protection than others, and thus fair use is more difficult to establish when the former works are copied.”¹⁴² Generally speaking, the courts evaluate the “value of the materials used.”¹⁴³ The more factual a plaintiff’s original work is, the more likely the courts will find fair use. However, this factor is not as important as other factors, for unauthorized users almost always copy publicly known, expressive works.¹⁴⁴

The next factor is for courts to evaluate whether “the amount and substantiality of the portion used in relation to the copyrighted work as a whole are reasonable in relation to the purpose of the copying.”¹⁴⁵ Courts inquire whether the alleged infringer’s justification for the particular use is persuasive, and then the inquiry relates back to the first statutory factor, since courts recognize that the extent of permissible copying varies with the purpose and character of the use.¹⁴⁶ In *Campbell*, the Court emphasized that “this factor calls for thought not only about the quantity of the materials used, but about their quality and importance, too.”¹⁴⁷

¹³⁷ *Campbell*, 510 U.S. at 579.

¹³⁸ *Id.*

¹³⁹ *Id.*

¹⁴⁰ *Id.*

¹⁴¹ 17 U.S.C. § 107(2).

¹⁴² *Campbell*, 510 U.S. at 586 (quoting *Folsom v. Marsh*, 9 F. Cas at 348).

¹⁴³ *Id.*

¹⁴⁴ *Id.* The Court referred particularly to parodies in *Campbell*.

¹⁴⁵ *Id.* (quoting 17 U.S.C. § 107(3)).

¹⁴⁶ *Id.* at 586-87.

¹⁴⁷ *Campbell*, 510 U.S. at 587.

The final factor courts evaluate is “the effect of the use upon the potential market for or value of the copyrighted work.”¹⁴⁸ *Campbell* explained that:

It requires courts to consider not only the extent of market harm caused by the particular actions of the alleged infringer, but also “whether unrestricted and widespread conduct of the sort engaged in by the defendant . . . would result in a substantially adverse impact on the potential market” for the original.¹⁴⁹

If evidence shows substantial harm to the market, courts may weigh against parody work for fair use, since licensing of derivatives is also an important economic incentive to the creation of originals.¹⁵⁰

C. Fair Use Application in Computer Programming Regime

In computer program copyright infringement cases, the courts do not have many chances to deal with the fair use defense. This Part analyzes two representative software cases where the courts analyzed the fair use defense.¹⁵¹

1. *Sega Enterprises Ltd. v. Accolade, Inc.*¹⁵²

Sega Enterprises Ltd. (“Sega”) is a Japanese corporation that developed and marketed video entertainment systems, including the “Genesis console” and video game cartridges.¹⁵³ Sega licensed its copyrighted computer code to independent computer game software

¹⁴⁸ *Id.* at 590 (quoting 17 U.S.C. § 107(4)).

¹⁴⁹ *Campbell*, 510 U.S. at 590 (quoting 3 M. Nimmer & D. Nimmer, Nimmer on Copyright § 13.05 [A][4], p. 13-103.61 (1993)).

¹⁵⁰ *Id.* at 593; see 17 U.S.C. § 106(2) (copyright owner has rights to derivative works).

¹⁵¹ See, e.g., *Sony Comput. Ent., Inc. v. Connectix Corp.*, 203 F.3d 596 (9th Cir. 2000); *Atari Games Corp. v. Nintendo of Am. Inc.*, 975 F.2d 832 (Fed. Cir. 1992).

¹⁵² 977 F.2d 1510 (9th Cir. 1992).

¹⁵³ *Id.* at 1514.

developers.¹⁵⁴ The licensees developed and sold Genesis-compatible video games to compete with Sega.¹⁵⁵ Accolade, Inc. (“Accolade”) was an independent developer, manufacturer, and computer entertainment software marketer.¹⁵⁶ Although Accolade considered entering into a licensing agreement with Sega, it eventually abandoned the effort.¹⁵⁷

To make its video games compatible with the Genesis console, Accolade used a two-step process.¹⁵⁸ First, it “reverse engineered”¹⁵⁹ Sega’s video game programs in order to learn the requirements for compatibility with the Genesis console, and it created a development manual, which contained the information it had discovered in the reverse engineering process.¹⁶⁰ Second, Accolade created its own games for Genesis relying on the development manual.¹⁶¹ In the second round of reverse engineering, Accolade added the code from Sega to its development manual as a “standard header file to be used in all games.”¹⁶² The file contained approximately twenty to twenty-five bytes of data.¹⁶³ But Accolade’s games contained a total of 500,000 to 1,500,000 bytes.¹⁶⁴

In 1991, Sega sued Accolade claiming copyright infringement.¹⁶⁵ The district court held in favor of Sega and rejected Accolade’s fair use defense.¹⁶⁶ On appeal, the Court of Appeals for

¹⁵⁴ *Id.*

¹⁵⁵ *Id.*

¹⁵⁶ *Id.*

¹⁵⁷ *Id.*

¹⁵⁸ *Id.*

¹⁵⁹ Brian Hess, *What is Reverse Engineering and How Does it Work?* ASTRO MACHINES WORKS (Sept. 9, 2019), <https://astromachineworks.com/what-is-reverse-engineering/>. Reverse engineering, also called backwards engineering or back engineering, is the process by which an artificial object is deconstructed to reveal its designs, architecture, code or to extract knowledge from the object. *Id.*

¹⁶⁰ *Sega v. Accolade*, 977 F.2d at 1514-15.

¹⁶¹ *Id.* at 1515.

¹⁶² *Id.* at 1516.

¹⁶³ *Id.*

¹⁶⁴ *Id.*

¹⁶⁵ *Id.* at 1517.

¹⁶⁶ *Id.*

the Ninth Circuit considered whether Accolade's use constituted fair use.¹⁶⁷

The Ninth Circuit weighed four factors of the fair use defense to determine whether Accolade had infringed Sega's copyright.¹⁶⁸ Copying for commercial use creates a presumption of unfairness, which can be rebutted by the particular commercial use.¹⁶⁹ The court rejected Sega's argument that Accolade copied the code to produce a competing product, and thus, was precluded from finding fair use, holding that the court needed to consider other aspects of "the purpose and character of the use" as well.¹⁷⁰ The court further reasoned that although Accolade's ultimate goal was to market Genesis-compatible video games, it copied the code solely for discovering the functional requirements to make the video games compatible with the Genesis console.¹⁷¹ This aspect of Sega's programs was not protected by copyright.¹⁷² Since it is necessary for Accolade to deconstruct the Sega's video game programs to learn the compatibility requirement and to make changes to its own games to make them compatible with Genesis console, Accolade could use no other methods to achieve this purpose since Accolade had never entered into a licensing agreement with Sega.¹⁷³

Further, the court recognized that particular use could bring public benefit, which is what the Copyright Act intended to promote.¹⁷⁴ Accolade's identification of "the functional requirements for Genesis compatibility has led to an increase in the number of independently designed video game programs offered for use with the Genesis console."¹⁷⁵ Independent developers could thus develop video games that can be used on Genesis's console.¹⁷⁶ As a result, more video games would be compatible with the Genesis console and

¹⁶⁷ *Id.*

¹⁶⁸ *Id.* at 1520-27.

¹⁶⁹ *Id.*; *Hustler Mag., Inc. v. Moral Majority, Inc.*, 796 F.2d 1148, 1152 (9th Cir. 1986).

¹⁷⁰ *Sega v. Accolade*, 977 F.2d at 1520-27.

¹⁷¹ *Id.*

¹⁷² *Id.*

¹⁷³ *Id.*

¹⁷⁴ *Id.* at 1523.

¹⁷⁵ *Id.*

¹⁷⁶ *Id.*

known by consumers. Even if the Genesis-compatible games were not scholarly works that did not alter the court's judgment.¹⁷⁷

As to the second factor, the court recognized that there was no settled standard for identifying what is protected expression and what is an unprotected idea in computer software copyright infringement cases because of computer programs' hybrid nature.¹⁷⁸ The court did not agree with the Third Circuit test in *Whelan* that the idea or function of a computer program is the idea of the program as a whole, and everything that is not necessary to that purpose or function is part of the expression of that idea, as this test was overbroad and too simplistic.¹⁷⁹ Instead, the court agreed with the Second Circuit's test set forth in *Altai*¹⁸⁰ that breaks down a computer program into component subroutine and then identifies each part's core functional element.¹⁸¹

The court agreed with Sega that Accolade "copied protected expression."¹⁸² However, the court also recognized that computer programs are special, for people cannot gain access to the unprotected ideas and functional concepts without disassembling the code, and there is no viable alternative way to achieve this goal.¹⁸³ Thus, for the second factor, the court held in favor of Accolade, because disassembling is necessary to learn the functional requirements of the Genesis console compatibility.¹⁸⁴

As to the third factor, since Accolade disassembled entire programs written by Sega, the court held against Accolade.¹⁸⁵ However, the court also noted that this factor alone does not preclude a finding of fair use. Since the ultimate use was limited, the court did

¹⁷⁷ *Id.*

¹⁷⁸ *Id.* at 1524.

¹⁷⁹ *Id.* at 1525; see, e.g., Peter Menell, *An Analysis of the Scope of Copyright Protection for Application Programs*, 41 STAN. L. REV. 1045, 1074 (1989); John Englund, *Idea, Process, or Protected Expression?: Determining the Scope of Copyright Protection of the Structure of Computer Programs*, 88 MICH. L. REV. 866, 881 (1990).

¹⁸⁰ See *Comput. Assocs. Int'l., Inc. v. Altai, Inc.*, 982 F.2d 693, 706-11 (2d Cir. 1992).

¹⁸¹ *Sega v. Accolade*, 977 F.2d at 1525.

¹⁸² *Id.*

¹⁸³ *Id.*

¹⁸⁴ *Id.* at 1526.

¹⁸⁵ *Id.*

not weigh this factor too significantly in the whole fair use analysis.¹⁸⁶

As to the fourth factor, the court acknowledged that Accolade's use affected the market for Genesis-compatible games in an indirect fashion.¹⁸⁷ However, video game users typically purchase more than one game, and therefore there is no basis to assume that Accolade's games have a significant impact on Sega's games, since customers may purchase both.¹⁸⁸ An attempt to monopolize this market by making it impossible for others to compete is against the statutory purpose to promote creative expression.¹⁸⁹ Thus, the court ruled in favor of Accolade on this factor.¹⁹⁰

After weighing the four factors, the Ninth Circuit reversed the district court's decision in favor of Accolade.¹⁹¹ The court's analysis was correct and ensured that the fair use defense would not be overly rigid. It did not simply apply the statutory text but considered various facts such as the ultimate goal of Accolade's copying; the public benefit resulting from Accolade's copying; and the fact that Accolade's copying would not have too much impact on Sega because the consumers would buy more than one game.¹⁹²

2. *Oracle America, Inc. v. Google LLC*¹⁹³

In the 1990s, Sun Microsystems, Inc. (Sun) developed the Java platform, a software that can be used to "write and run programs in Java programming language," for computer programming.¹⁹⁴ With Java, programmers did not have to rewrite programs when they want to use the program on different computer hardware.¹⁹⁵ The Java 2 Standard Edition (Java SE) of the platform included the Java Application Programming Interface (API), which contained pre-written Java source code that allowed programmers to build certain

¹⁸⁶ *Id.*

¹⁸⁷ *Id.* at 1523.

¹⁸⁸ *Id.*

¹⁸⁹ *Id.* at 1523-24.

¹⁹⁰ *Id.* at 1527-28.

¹⁹¹ *Id.*

¹⁹² *Id.* at 1523-24.

¹⁹³ 886 F.3d 1179 (Fed. Cir. 2018).

¹⁹⁴ *Id.* at 1186.

¹⁹⁵ *Id.*

functions without writing code from scratch.¹⁹⁶ By 2008, Java SE included 166 API packages.¹⁹⁷ Although the Java programming languages were free, some content spread across three packages within Java API library must be used; otherwise, the language would fail.¹⁹⁸ In 2010, Oracle purchased Sun.¹⁹⁹ Oracle made the Java platform freely available to programmers, but to attract programmers, Java was licensed with a fee to programmers who wanted to use the APIs in competing platforms, including mobile devices.²⁰⁰

In 2005, Google acquired Android, Inc. to explore the mobile devices market.²⁰¹ That same year, Google tried to negotiate with Sun to acquire a license, but the attempt failed.²⁰² At the same time, the Android team attempted to create its own APIs but also failed.²⁰³ In 2007, Google debuted its Android software platform for mobile devices, in which Google copied the code of “37 Java API packages – 11,500 lines of Oracle’s copyrighted code.”²⁰⁴

Oracle sued Google for copyright and patent infringement in 2010, and the Northern District of California ruled in favor of Google.²⁰⁵ Oracle appealed to the Federal Circuit, which reversed the case in part and remanded it to the district court in 2014.²⁰⁶ The Federal Circuit held that the Java API packages were copyrightable, and it remanded to the district court on the issue of whether Google’s use was acceptable under the fair use doctrine.²⁰⁷ Google appealed the Federal Circuit’s decision to the Supreme Court, but the writ of certiorari was denied in 2015.²⁰⁸ After a new trial in 2016, the jury found Google did not infringe Oracle’s copyrighted Java API

¹⁹⁶ *Id.*

¹⁹⁷ *Id.*

¹⁹⁸ *Id.* at 1187.

¹⁹⁹ *Id.* at 1186.

²⁰⁰ *Id.*

²⁰¹ *Id.*

²⁰² *Id.*

²⁰³ *Id.*

²⁰⁴ *Id.*

²⁰⁵ *Id.* at 1188.

²⁰⁶ *Id.*; *see also* Oracle Am., Inc. v. Google Inc., 750 F.3d 1339, 1381 (Fed Cir. 2014).

²⁰⁷ *Oracle*, 886 F.3d at 1188; *see* Oracle Am., Inc. v. Google Inc., 750 F.3d 1339, 1376 (Fed Cir. 2014).

²⁰⁸ *Oracle*, 886 F.3d at 1185.

packages because of the fair use defense.²⁰⁹ Oracle appealed to the Federal Circuit in 2018, and the court reversed and remanded the case to the district court.²¹⁰ This time, the Federal Circuit held that Google's use was not fair use, and the court remanded the case to the district court to decide the amount of money that Google should pay Oracle.²¹¹ Google petitioned for certiorari, which the Supreme Court granted in 2019.²¹²

Two substantive issues were presented to the Supreme Court: (1) whether copyright protection extends to a software interface; and (2) whether, as the jury found, Google's use of a software interface in the context of creating a new computer program constitutes fair use.²¹³ In the Federal Circuit court's ruling in 2018, the court weighed the four factors of fair use, holding that Google's use of Java API packages was not fair use.²¹⁴

For the purpose and character of the use factor, the Federal Circuit recognized that the factor had two main components: (1) whether the use was commercial in nature; and (2) whether the new work was transformative.²¹⁵ Oracle also pointed out that courts have included bad faith in the purpose and character analysis.²¹⁶

Courts tend to find that a copyrighted use for commercial purposes is typically not fair use.²¹⁷ The Federal Circuit nonetheless recognized that "the commercial use subfactor should not be unduly emphasized for it would lead to an overly restrictive view of fair use."²¹⁸ Thus, the court reasoned that "the degree to which the new user exploits the copyright for commercial gain . . . affects the weight

²⁰⁹ *Id.* at 1189.

²¹⁰ *Id.* at 1186.

²¹¹ *Id.*

²¹² See Andrew Hamm, *Google LLC v. Oracle America Inc.*, SCOTUSBLOG (Apr. 29, 2019), <https://www.scotusblog.com/case-files/cases/google-llc-v-oracle-america-inc/>.

²¹³ Petition for Writ of Certiorari, *Google LLC v. Oracle Am., Inc.*, 140 S. Ct. 520 (2019) (No. 18-956).

²¹⁴ *Oracle*, 886 F.3d at 1186.

²¹⁵ *Id.* at 1196.

²¹⁶ *Id.*

²¹⁷ *Id.*

²¹⁸ *Id.* at 1196-97 (quoting *Am. Geophysical Union v. Texaco, Inc.*, 60 F.3d 913, 921 (2d Cir. 1994)).

we afford commercial nature as a factor.”²¹⁹ The Federal Circuit disagreed with Google’s argument that its use was not commercial because Android was available open-source.²²⁰ The court explained that the fact that Android was free to the consumers did not make Google’s use non-commercial, and Google’s other potential non-commercial motive did not matter here as a matter of law.²²¹ The court also disagreed with Google’s argument that it did not gain profit directly but through advertisements,²²² reasoning that “direct economic benefit was not required to demonstrate commercial use.”²²³ The Federal Circuit thus ruled in favor of Oracle on commercial use.²²⁴

Google argued that its use was transformative because it used small parts of the Java API packages to create a new smartphone platform, a different market from Oracle’s computer field.²²⁵ However, the Federal Circuit court denied this argument and reasoned that Google’s use did not fit within the statutory categories that are “looking to whether the use is for criticism, or comment, or news reporting, and the like.”²²⁶ Also, the API packages “served the same function in both works,”²²⁷ Google used the API packages for the benefit of developers because the developers were “familiar with the Java programming language.”²²⁸ Additionally, Google argued that it used only thirty-seven out of 166 API packages to write its own implementing code.²²⁹ However, the court rejected Google’s argument because the court reasoned that not only the quantity matters, so did the quality of the copied material.²³⁰ It did not matter whether Google had its own original code in the Android platform; the fact that Google failed to “alter[] the expressive content or

²¹⁹ *Id.* at 1197 (quoting *Elvis Presley Enters., Inc. v. Passport Video*, 349 F.3d 622, 627 (9th Cir. 2003)).

²²⁰ *Oracle*, 886 F.3d at 1197.

²²¹ *Id.*

²²² *Id.*

²²³ *Id.* (quoting *A&M Records, Inc. v. Napster, Inc.*, 239 F.3d 1004, 1015 (9th Cir. 2001)).

²²⁴ *Id.* at 1198.

²²⁵ *Id.* at 1199.

²²⁶ *Id.* (quoting *Campbell v. Acuff-Rose Music, Inc.*, 510 U.S. 569, 578-79 (1994)).

²²⁷ Order Denying JMOL, 2016 WL 3181206, at *8.

²²⁸ *Oracle Am., Inc. v. Google LLC*, 886 F.3d 1179, 1200 (Fed. Cir. 2018).

²²⁹ *Id.*

²³⁰ *Id.*

message of the original work” was enough for the court to rule against Google on this subfactor.²³¹ Finally, the court reasoned that Google did not alter the original work by incorporating the API packages because Java SE APIs were in smartphones before Android entered the market.²³² Thus, the court ruled in favor of Oracle on this subfactor.²³³

The Federal Circuit used the Ninth Circuit’s ruling that “one who acts in bad faith should be barred from invoking the equitable defense of fair use.”²³⁴ Oracle argued that Google intentionally used the API packages and knew that it needed to have a license.²³⁵ Google argued good faith based on industry custom.²³⁶ The court recognized that although bad faith may weigh against fair use, good faith was not a defense.²³⁷ Even if the jury found that Google’s use was based on good faith, the court ruled in favor of Oracle on this factor based on “the highly commercial and non-transformative nature of the use.”²³⁸

For the nature of the copyrighted work factor, the court evaluated “whether the work was informational or creative.”²³⁹ As a rule mentioned in *Campbell*, “[c]reative expression falls within the core of the copyright’s protective purposes.”²⁴⁰ The Federal Circuit ruled in favor of Google on this factor because the evidence showed only that the API packages had met the “minimal degree of creativity”²⁴¹ to be copyrightable; however, “the functional aspect of the packages” was also an important consideration.²⁴² The evidence had shown that the API packages were functional, and Oracle failed to provide evidence explaining to the jury how to differentiate the functionality and creativity.²⁴³ However, the court also agreed with

²³¹ *Id.* at 1201.

²³² *Id.*

²³³ *Id.* at 1202.

²³⁴ *Id.* (quoting *Fisher v. Dees*, 794 F.2d 432, 436 (9th Cir. 1986)).

²³⁵ *Id.* at 1203.

²³⁶ *Id.*

²³⁷ *Id.*

²³⁸ *Id.* at 1204.

²³⁹ *Id.* (quoting *Worldwide Church of God v. Phila. Church of God, Inc.*, 227 F.3d 1110, 1118 (9th Cir. 2000)).

²⁴⁰ *Campbell v. Acuff-Rose Music, Inc.*, 510 U.S. 569, 586 (1994).

²⁴¹ *Oracle*, 886 F.3d at 1204.

²⁴² *Id.*

²⁴³ *Id.* at 1205.

the Ninth Circuit that this factor would not be very significant in the whole fair use analysis.²⁴⁴

For the amount and substantiality of the portion used factor, the Federal Circuit agreed with the Ninth Circuit to evaluate both “the quantitative amount and qualitative value of the original work used in relation to the justification for its use.”²⁴⁵ The quantitative amount was not dispositive when the copied portion was significant qualitatively.²⁴⁶ The court found that Google copied 11,330 more lines than necessary to write in Java.²⁴⁷ Google argued that it did so to “avoid confusion among Java programmers as between the Java system and the Android system.”²⁴⁸ The court reasoned that use for purposes of “capitalizing on the popularity of the copyrighted work or to meet the expectations of intended customers” was not fair use.²⁴⁹ The Federal Circuit explained that even if the quantity that Google copied from Oracle’s copyrighted work was insignificant, no reasonable jury could find that it was also qualitatively insignificant.²⁵⁰ Google conceded it could have written the API differently to achieve the same functions.²⁵¹ Thus, the court held that this factor was at most neutral in the fair use inquiry.²⁵²

For the effect upon the potential market factor, the Federal Circuit evaluated the alleged infringer’s work’s potential market impact.²⁵³ The Ninth Circuit ruled that market harm “can be presumed where a use is ‘commercial and not transformative.’”²⁵⁴ The Supreme Court explained that this factor may be weighed

²⁴⁴ *Id.* (quoting *Dr. Seuss Enters., L.P. v. Penguin Books USA, Inc.*, 109 F.3d 1394, 1402 (9th Cir. 1997)).

²⁴⁵ *Id.* (quoting *Seltzer v. Green Day, Inc.*, 725 F.3d 1170, 1178 (9th Cir. 2013)).

²⁴⁶ *Id.*

²⁴⁷ *Id.* at 1206.

²⁴⁸ Order Denying JMOL, 2016 WL 3181206, at *10-11.

²⁴⁹ *Oracle*, 886 F.3d at 1206-07.

²⁵⁰ *Id.* at 1207.

²⁵¹ *Id.*

²⁵² *Id.*

²⁵³ *Id.*

²⁵⁴ *Id.* (quoting *Disney Enters., Inc. v. VidAngel, Inc.*, 869 F.3d 848, 861(9th Cir. 2017)).

through a “sensitive balancing of interests.”²⁵⁵ The Federal Circuit applied the Supreme Court’s precedent.²⁵⁶

When the court weighed this factor, the court evaluated both impacts on actual or potential market impact and on the “market for potential derivative uses, including those that creators of original works would, in general, develop or license others to develop.”²⁵⁷ The court recognized that “[l]icensing Java SE for smartphones with increased processing capabilities” was one potential new market.²⁵⁸ The fact that Oracle negotiated with Google about licensing also indicated that Oracle intended to license its work.²⁵⁹ Google argued that Java SE and Android did not compete in the same market; the court disagreed, reasoning that the fact that Oracle never entered the smartphone market was irrelevant here because the potential markets included “licensing others to develop derivative works.”²⁶⁰ Even if Google’s use did not have actual market harm, the potential impact alone would suffice for the court to establish the market impact.²⁶¹

The Federal Circuit ruled Google infringed Oracle’s copyright because its use was not fair use.²⁶² The first factor and the fourth factor were heavily against Google.

In Google’s Petition for a Writ of Certiorari, Google made three arguments regarding the Federal Circuit court’s ruling in 2018 on the fair use issue.²⁶³ First, Google pointed out that the Federal Circuit failed to consider the functional nature of software interfaces.²⁶⁴ Software interface, as a functional work, should be easier to prove fair use because “interfaces lie ‘at a distance from the

²⁵⁵ *Id.* at 1208 (quoting *Campbell v. Acuff-Rose Music, Inc.*, 510 U.S. 569, 590 (1994)).

²⁵⁶ *Id.*

²⁵⁷ *Id.* (quoting *Campbell*, 510 U.S. 569, 592).

²⁵⁸ *Id.* at 1209.

²⁵⁹ *Id.*; see *Oracle Am., Inc. v. Google LLC*, 886 F.3d 1179, 1187 (Fed. Cir. 2018). Google and Sun tried to reach an agreement but failed, for Google wanted device manufacturers to be able to use Oracle’s APIs in Android for free and to be able to freely modify the code, which would jeopardize Java platform’s “write once, run anywhere” philosophy. *Id.*

²⁶⁰ *Oracle*, 886 F.3d at 1209-10.

²⁶¹ *Id.* at 1210.

²⁶² *Id.*

²⁶³ Petition for Writ of Certiorari at 11-32, *Google LLC v. Oracle Am., Inc.*, 140 S. Ct. 520 (2019) (No. 18-956).

²⁶⁴ *Id.* at 21.

core’ of copyright protection and are owed ‘a lower degree of protection than more traditional literary works.’”²⁶⁵ Second, Google argued that the Federal Circuit applied “transformative use” too rigidly.²⁶⁶ Google’s use was transformative because its use opened a new market for smartphones.²⁶⁷ Google used Java API declarations but only in a limited way to allow developers “to use the Java language to build applications for Android.”²⁶⁸ Such “interoperability was critical for developers” since they could make progress without having to use “entirely different interfaces in Android.”²⁶⁹ Finally, Google argued that the Federal Circuit erred in reasoning that just because “Oracle could have tried to adapt Java SE for use in smartphones, Google’s use ... caused harm to a potential market.”²⁷⁰

III. ANALYSIS

On April 5, 2021, the Supreme Court issued its opinion in *Google LLC v. Oracle America, Inc.*²⁷¹ and held that Google’s copying was fair use.²⁷² The Supreme Court properly considered the public benefit when applying the fair use doctrine, although it failed to elaborate on its meaning. The Court also correctly held that Google’s use was transformative, although it failed to provide a definition of “transformative use.” The Court correctly and carefully analyzed the market effect factor. The Supreme Court’s decision is correct because it did not apply fair use to stifle creativity and provided some clarification of the fair use application. The decision will have a positive effect on the technology industry.

²⁶⁵ *Id.* at 23-24.

²⁶⁶ *Id.* at 24.

²⁶⁷ *Id.* at 25.

²⁶⁸ *Id.* at 25-26.

²⁶⁹ *Id.* at 26.

²⁷⁰ *Id.* at 29.

²⁷¹ 141 S. Ct. 1183 (2021).

²⁷² *Id.* at 1209.

A. The Supreme Court Correctly Incorporated the Public Benefit into the Fair Use Analysis, but it Failed to Provide A Detailed Analysis or Guideline to the Public Benefit Consideration

In the Supreme Court decision, the Court incorporated the public benefits consideration into the market effects factor, which is the fourth factor.²⁷³ The Court noted that “[w]e do not say that these questions are always relevant to the application of fair use. Nor do we say that these questions are the only questions a court might ask. But we do find them relevant here in helping to determine the likely market effects of Google’s reimplementation.”²⁷⁴ The Court, however, failed to give it a deeper discussion.

The statutory language has provided that unauthorized use is fair use “for the purposes such as criticism, comment, news reporting, teaching, scholarship, or research.”²⁷⁵ Those enumerated uses have one thing in common: the alleged infringer’s use provides societal benefit far beyond the alleged infringer’s personal commercial gain.²⁷⁶ Although it may be difficult for courts to value the external benefit, the Constitution requires copyright to encourage the public benefit.²⁷⁷

Before Google developed the Android system, there was “no open-source, full-stack platform” in the smartphone market.²⁷⁸ Google’s development of the Android system resulted in a “revolutionary, open-source mobile platform, completely different from any other approach.”²⁷⁹ Google then released the Android system to smartphone manufacturers free of charge and published the source code under an open-source license.²⁸⁰ Google’s use had a threefold public benefit: first, it benefitted the smartphone manufacturers so that the manufacturers do not have to buy Android’s system. Second, it tremendously helped application

²⁷³ *Id.* at 1206.

²⁷⁴ *Id.*

²⁷⁵ 17 U.S.C. § 107.

²⁷⁶ See Lydia Pallas Loren, *Redefining the Market Failure Approach to Fair Use in An Era of Copyright Permission Systems*, 5 J. INTELL. PROP. L. 1, 49 (1997).

²⁷⁷ *Id.*

²⁷⁸ Brief of Defendant-Appellee, *Oracle*, 2017 WL 2305681 at *12 (May 22, 2017).

²⁷⁹ *Id.* at 16.

²⁸⁰ *Id.* at 17.

developers so that they do not have to acquire more knowledge (such as languages other than Java) to use Android and can use Android for free. Third, the ease of using Android allowed application developers to express their ideas better, thus, developing more valuable applications that will be convenient for all smartphone users.

The number of Android smartphone users in the United States increased to 120.5 million in 2018, and this figure is forecast to reach more than 130 million in 2021,²⁸¹ not to mention the number of Android smartphone users across the world.²⁸² If Google had developed Android from scratch, Google might have taken longer or even failed to successfully develop Android. If so, the smartphone market, application developers, and Android smartphone users would suffer a tremendous loss.

It is hard, however, to define or measure the public benefit. What is the public benefit? What kind of use can have a public benefit? What is the scope of public benefit? Does the use benefit the public's ability to be educated or enhance their ability to gain commercially? Because we live in a digital world, the scope of accessibility and the monetary value of the individual user is hard for courts to measure. How many people can, have, or will use the alleged copyright infringing software? Do they have to pay for using it? These are the unsolved questions presented in front of the courts.

Courts may be reluctant to consider the public benefit because every use could have some degree of public benefit. In that case, all uses would be fair use, which would render the whole fair use analysis meaningless. Further, if any usage that has some degree of public benefit could be fair use, companies and developers would have fewer incentives to put efforts into developing new software or technology since their products may not be protected by copyright. Moreover, although the statutory factors set forth in 17 U.S.C. § 107 are not exhaustive, courts are unwilling to go beyond the four factors when considering the fair use defense.

²⁸¹ S. O'Dea, *Number of Android smartphone users in the United States from 2014 to 2021*, STATISTA (Mar. 1, 2021), <https://www.statista.com/statistics/232786/forecast-of-andrioid-users-in-the-us/>.

²⁸² Allan Jay, *Number of Smartphone and Mobile Phone Users Worldwide in 2021/2022: Demographics, Statistics, Predictions*, FINANCESONLINE, <https://financesonline.com/number-of-smartphone-users-worldwide/> (last visited Apr. 2, 2021).

Although it may be difficult for courts to measure and apply public benefit in the fair use analysis, this is not an excuse for courts to disregard this consideration. The Supreme Court has previously recognized the importance of the public benefit value when determining the fair use defense. For example, the Court noted in *Twentieth Century Music Corp. v. Aiken*²⁸³ that “[t]he limited scope of the copyright holder’s statutory monopoly ... reflects a balance of competing claims upon the public interest”²⁸⁴ In *Williams & Wilkin Co. v. U.S.*²⁸⁵ the Court noted that “[C]ourts in passing upon particular claims of infringement must occasionally subordinate the copyright holder’s interest in a maximum financial return to the greater public interest in the development of art, science and industry.”²⁸⁶ In *Sony Corp. of America v. Universal City Studios, Inc.*²⁸⁷ the Court held that:

The monopoly privileges that Congress may authorize are neither unlimited nor primarily designed to provide a special private benefit. Rather, the limited grant is a means by which an important public purpose may be achieved. It is intended to motivate the creative activity of authors and inventors by the provisions of a special reward, and to allow the public access to the products of their genius after the limited period of exclusive control has expired.²⁸⁸

Several Federal Circuits have also added the public benefit consideration into the fair use analysis. For example, in *Sega*, the Ninth Circuit considered the public benefit “resulting from a particular use notwithstanding the fact that the alleged infringer may

²⁸³ 422 U.S. 151 (1975).

²⁸⁴ See *Twentieth Century Music Corp. v. Aiken*, 422 U.S. 151, 156 (1975) (noting that the ultimate goal of copyright is to stimulate artistic creativity for general public good).

²⁸⁵ 487 F.2d 1345 (Ct. Cl. 1973)

²⁸⁶ *Id.* at 1352 (quoting *Berlin v. E.C. Publ’n, Inc. v. Random House, Inc.*, 366 F.2d 303, 307 (2d Cir. 1966)).

²⁸⁷ 464 U.S. 417 (1984).

²⁸⁸ *Id.* at 429; see also *Campbell v. Acuff-Rose Music, Inc.*, 510 U.S. 569, 574-76 (1994) (directing courts to consider public benefits).

gain commercially.”²⁸⁹ Additionally, public benefit “need not be direct or tangible, but may arise because the challenged use serves a public interest.”²⁹⁰ In *Wright v. Warner Books, Inc.*²⁹¹ the Second Circuit held that when considering the effect on the market, the court must balance “the benefit the public will derive if the use is permitted and the personal gain the copyright owner will receive if the use is denied.”²⁹² Another good example is the decision in *Authors Guild v. Google, Inc.*,²⁹³ where Google provided a searchable database of books and snippet views so that the user could search for the books but would not have access to the substantial book content.²⁹⁴ At trial, Judge Chin ruled in favor of Google and reasoned that:

In my view, Google Books provides significant public benefits. It advances the progress of the arts and sciences, while maintaining respectful consideration for the rights of authors and other creative individuals, and without adversely impacting the rights of copyright holders. It has become an invaluable research tool that permits students, teachers, librarians, and others to more efficiently identify and locate books. It has given scholars the ability, for the first time, to conduct full-text searches of tens of millions of books. It preserves books, in particular out-of-print and old books that have been forgotten in the bowels of libraries, and it gives them new life. It facilitates access to books for print-disabled and remote or underserved populations. It generates new audiences

²⁸⁹ *Sega Enters. Ltd. v. Accolade, Inc.*, 977 F.2d 1510, 1523 (9th Cir. 1992) (fitting the public benefit consideration into the first fair use factor).

²⁹⁰ *Id.*; see also *Perfect 10, Inc. v. Amazon.com, Inc.*, 508 F.3d 1146, 1165 (“[A] search engine provides social benefit by incorporating an original work into a new work, namely, an electronic reference tool.”); *Kelly v. Arriba Soft Corp.*, 336 F.3d 811, 820 (holding that Arriba’s use of Kelly’s had public benefit by enhancing internet’s information-gathering techniques).

²⁹¹ 953 F.2d 731 (2d Cir. 1991).

²⁹² *Wright v. Warner Books, Inc.*, 953 F.2d 731, 739 (2d Cir. 1991); see also *MCA, Inc. v. Wilson*, 677 F.2d 180, 183 (2d Cir. 1981) (fitting the public benefit consideration into the fourth fair use factor).

²⁹³ 804 F.3d 202 (2d Cir. 2015).

²⁹⁴ *Id.*

and creates new sources of income for authors and publishers. Indeed, all society benefits.²⁹⁵

Although the Supreme Court reasoned that the public benefit consideration was relevant in this case and incorporated the consideration into the fourth factor, the Court failed to explain further how the public benefit should be considered and analyzed. To make it easier for lower courts to consider the public benefits properly, the Supreme Court should have provided a more detailed analysis or guideline to the public benefit consideration, or the Court should have at least given a clear definition of public benefit.

B. The Supreme Court Correctly Held that Google’s Use is Transformative, but it Failed to Provide a Clear Definition of “Transformative Use”

Transformative uses generally “involve the addition of labor to create value, whether that labor is in building an interpretive scaffold around a work, changing the work to send a different message, or putting the work together with numerous other works in order to search across them.”²⁹⁶ After *Campbell*, the lower courts have split transformative use into two contexts: transformative-content and transformative use.²⁹⁷ Transformative use means the alleged infringer “transforms the original work for a new purpose.”²⁹⁸ Transformative content means the alleged infringer “uses part of the original work to create a new meaning.”²⁹⁹

For transformative purpose, changing the content in the alleged infringer’s work is not necessary. Transformative purpose generally

²⁹⁵ Authors Guild, Inc. v. Google Inc., 954 F. Supp. 2d 282, 293 (S.D.N.Y. 2013), *aff’d*, 804 F.3d 202 (2d Cir. 2015); *see also* Leval, *supra* note 124, at 1111 (noting that the secondary use “adds value to the original” is the goal of enrichment of society that the fair use doctrine intends to achieve).

²⁹⁶ Rebecca Tushnet, *Content, Purpose, or Both*, 90 WASH. L. REV. 869, 891-92 (2015).

²⁹⁷ Brief of Eight Intellectual Property Scholars as Amici Curiae supporting Petitioner at 4, Google LLC v. Oracle Am. Inc., 140 S. Ct. 520 (2019) (No. 18-956).

²⁹⁸ *Id.*; *see* Tushnet, *supra* note 296, at 869-90.

²⁹⁹ Brief of Eight Intellectual Property Scholars as Amici Curiae supporting Petitioner at 4, Google LLC v. Oracle Am. Inc., 140 S. Ct. 520 (2019) (No. 18-956); *see* Tushnet, *supra* note 296, at 869-90.

means that the defendant “has a different interpretive or communicative project than the plaintiff did in creating the original work.”³⁰⁰ Courts have held some uses infringe on copyright but are fair use, even if the alleged infringer used the exact copy as originals. For example, courts have held in some cases that using copyrighted work in search engines is an allowable transformative purpose. In *Authors Guild v. Google, Inc.*, the Second Circuit held that Google’s searchable books had a transformative purpose for it “provide[s] otherwise unavailable information about the originals.”³⁰¹ The search function’s purpose was for users to “gain significant information about the books,” and the snippet view “adds importantly to the highly transformative purpose of identifying books of interest to the searcher.”³⁰² In other cases, the courts ruled in favor of the alleged infringer when it selectively copied the original works without changing the content.³⁰³

However, the circuit courts disagreed over what constitutes transformative use. For example, the Second Circuit held that “[t]o qualify as a fair use under copyright law, a new work generally must alter the original with new expression, meaning, or message.”³⁰⁴ In a Ninth Circuit case,³⁰⁵ the court agreed with the Second Circuit’s

³⁰⁰ Tushnet, *supra* note 296, at 878.

³⁰¹ *Authors Guild v. Google, Inc.*, 804 F.3d at 215; *see also* Perfect 10, Inc. v. Amazon.com, Inc., 508 F.3d 1146 (9th Cir. 2007); Kelly v. Arriba Soft Corp., 336 F.3d 811 (9th Cir. 2003).

³⁰² *Authors Guild v. Google, Inc.*, 804 F.3d at 217-18.

³⁰³ Tushnet, *supra* note 296, at 877; *see also* Bill Graham Archives v. Dorling Kindersley Ltd., 448 F.3d 605 (2d Cir. 2006); Am. Inst. of Physics v. Winstead PC No. 3:12-CV-1230-M, 2013 WL 6242843 (N.D. Tex. Dec. 3, 2013) (finding patent-related copying a fair use and transformative); Denison v. Larkin, No. 1:14-CV-01470, 2014 WL 3953637 (N.D. Ill. Aug. 13, 2014) (finding that disciplinary use had a different purpose than blogger’s purpose of exposing alleged courtroom corruption).

³⁰⁴ *Cariou v. Prince*, 714 F.3d 694, 705-08 (2d Cir. 2013); *see* The Andy Warhol Foundation v. Goldsmith, 992 F.3d 99 (2d Cir. 2021) (holding that the artist’s print illustration of musician based on the copyright owner photographer’s photo of the musician was not transformative since it did not significantly alter or add any elements).

³⁰⁵ *Seltzer v. Green Day, Inc.*, 725 F.3d 1170, 1177 (9th Cir. 2013) (“[A]n allegedly infringing work is typically viewed as transformative as long as new expressive content or message is apparent, this is so even where—as here—the allegedly infringing work makes few physical changes to the original or fails to comment on the original.”).

approach and held that the junior work had to be transformative, even though the junior work only minimally modified the original work.³⁰⁶ On the other hand, in a Seventh Circuit case,³⁰⁷ the court criticized the Second Circuit's approach as being too broad and argued that it would result in a conflict with the protection of derivative works under 17 U.S.C. § 106(2).³⁰⁸

The Federal Circuit in *Oracle* took the narrow view of transformative use by only examining the statutory language and held that Google's use did not fall within the categories of "criticism, or comment, or news reporting, and the like"³⁰⁹ mentioned in the statute. However, the precedent cases demonstrated that the factors in § 107 never intended to be exhaustive.³¹⁰ The software code was written by developers to achieve certain functions, which would almost never fall within the categories listed in the statute. If courts apply this narrow test and disregard the utilitarian nature of the software, it would be difficult for software developers to use fair use as a defense. Thus, the Federal Circuit's holding was too narrow and rigid since the court only looked at a few non-exhaustive categories listed in the statute and failed to consider the functional nature of the software.

Further, the Federal Circuit used the transformative content test and held that Google's use was not transformative since it failed to "alter the expressive content or message of the original work."³¹¹ However, this holding "was against many precedent cases, which did not focus on the work of the second creator."³¹² As an *amicus curiae*

³⁰⁶ *Id.* at 1176-78.

³⁰⁷ *Kienitz v. Sconnie Nation LLC*, 766 F.3d 756 (7th Cir. 2014) (questioning the Second Circuit's transformative use test set forth in *Cariou* because the test asks exclusively whether the work is transformative and replaces the list in 17 U.S.C. § 107 and would also override derivative works protection set forth in 17 U.S.C. § 106(2)).

³⁰⁸ *Id.* at 758-59.

³⁰⁹ *Campbell v. Acuff-Rose Music, Inc.*, 510 U.S. 569, 578-89 (1994).

³¹⁰ *Id.* at 577-78.

³¹¹ *Oracle*, 886 F.3d at 1201.

³¹² *See, e.g., Seltzer v. Green Day, Inc.*, 725 F.3d 1170, 1177 (9th Cir. 2013) ("[A work is transformative] as long as new expressive content or message is apparent . . . even where . . . the allegedly infringing work makes few physical changes to the original.").

brief³¹³ pointed out, “software interfaces allow developers to write software that is interoperable and independent of the underlying hardware.”³¹⁴ It also noted that the developer community has its own standard and universal practices to meet the tremendous need of developing new software, such as rely on “libraries common software function written by others” to avoid the need to recode, coordinate with each other and “create interoperable code modules” that can be connected to make the larger programming work, isolate the hardware and software installed on it, and adopt a standardized platform to bridge the gap between the hardware and software.³¹⁵

Thus, under the Federal Circuit’s standard, software developers would have to rewrite the code every time even to achieve the same function. This would slow developers’ progress and thus impede creativity. The Federal Circuit had thus failed to consider the functional nature of the software and customary practices in the software industry.

The Supreme Court reversed and held that Google’s use was transformative.³¹⁶ The Court noted that Google copied the portions of APIs precisely for the purpose of “enabl[ing] programmers to call up implementing programs that would accomplish particular tasks.”³¹⁷ The Court recognized that since it was the software industry’s common practice, stopping the analysis here would “severely limit the scope [of] fair use in the functional context of computer programs.”³¹⁸ Google uses APIs to create new products and it seeks to “expand the use and usefulness of Android-based smartphones.”³¹⁹ The Court reasoned that Google’s use to “create a new platform that could be readily used by programmers was consistent with that creative ‘progress’ that is the basic constitutional objective of copyright itself.”³²⁰ Google’s use is transformative because Google “provided a new collection of tasks operating in a

³¹³ Brief for Developers Alliance as Amicus Curiae supporting Petitioner at 6, *Google LLC v. Oracle Am., Inc.*, 140 S. Ct. 520 (2019) (No. 18-956).

³¹⁴ *Id.* at 5.

³¹⁵ *Id.* at 6.

³¹⁶ *Google LLC v. Oracle America, Inc.*, 141 S. Ct. 1183, 1204 (2021).

³¹⁷ *Id.* at 1203.

³¹⁸ *Id.*

³¹⁹ *Id.*

³²⁰ *Id.*

distinct and different computing environment.”³²¹ The Court also recognized that Google’s reuse of APIs is also common in the software industry as demonstrated by several of the amici briefs.³²²

Although the Court made the correct decision that Google’s use was transformative and rejected the narrow view of transformative use taken by the Federal Circuit, the Court failed to provide a clear standard and definition for what constitutes “transformative use.” The lower courts would use their own definition and standard of “transformative use,” which would cause confusion and encourage judicial forum shopping. The best solution for this dilemma is for the Supreme Court to provide a clearer definition of “transformative use.” Otherwise, this unpredictable issue will impair software developers’ creativity and give copyright holders too much monopoly power, which consequently suppresses expression and goes against copyright law’s purpose.

C. Supreme Court Correctly Decided that Google did not Harm Oracle’s Actual or Potential Market

Courts should not weigh the market impact factor (factor four) too heavily. The software industry grows rapidly, and software companies always want to explore and enter different markets to both make profits and create new devices and processes to make people’s lives more convenient. It is normal for software companies to make efforts to enter new markets regardless of their success. Also, software users are likely to use different types of software; each software may serve various functions. Courts should not hold the alleged infringer liable for copyright infringement merely because the copyright owner attempts to enter the same market as the alleged infringer and thus the alleged infringer impairs the original work’s potential market. Otherwise, software companies may hesitate when they decide to explore new markets. This may also give software copyright holders monopoly power in certain markets, even if they do not ever actually enter the market: they should not have “reserved” a seat in the market.

In the Supreme Court’s decision, the Court held that Google did not harm the markets for Java SE because Oracle failed to enter

³²¹ *Id.*

³²² *Id.* at 1203-04.

the smartphone market.³²³ Sun's (now Oracle's) main market was laptops and desktops, and Sun "was poorly positioned to succeed in the mobile phone market."³²⁴ Google's Android system was "part of a distinct (and more advanced) market than Java software."³²⁵ Sun failed to enter the smartphone market, which is a market that "increasingly demanded a new form of smartphone technology."³²⁶ Finally, considering the difficulties to create similar APIs "with similar appeal to programmers," enforcing Oracle's copyright would actually harm the public.³²⁷ As the Supreme Court recognized, "Oracle alone would hold the key."³²⁸ Although Oracle as a copyright holder could earn enormous profits, the profits "could well flow from creative improvements, new applications, and new uses developed by users who have learned to work with that interface."³²⁹ Enforcing Oracle's copyright would limit creativity, which is inconsistent with Congress's intent.³³⁰

The Supreme Court correctly decided not to grant Oracle monopoly power. Technology grows fast and technology companies use their best efforts to create new software and explore new fields and markets. If a copyright owner holds the only "key," this power will have a negative impact on the technology companies' creativity.

D. Supreme Court Should Have Provided A Clear Standard of Applying the Four Factors of the Fair Use Defense and How to Weigh Them

The 17 U.S.C. § 107 enumerates only four non-exhaustive factors when applying the fair use defense. However, it did not provide guidelines for the relative weight of the four factors. So far, the Supreme Court has adopted two approaches in evaluating the factors. In *Harper & Row*, the Court stated that the fourth factor, which required courts to "consider the effect on potential market,"

³²³ Google LLC v. Oracle America, Inc., 141 S. Ct. 1183, 1206 (2021).

³²⁴ *Id.*

³²⁵ *Id.* at 1207.

³²⁶ *Id.*

³²⁷ *Id.* at 1208.

³²⁸ *Id.*

³²⁹ *Id.*

³³⁰ *Id.*

was “the most important element of fair use.”³³¹ On the other hand, in *Campbell*, the Court introduced “transformative use” and held that this was the key factor when deciding the fair use defense.³³²

Lower courts have struggled to reconcile the two standards. For example, the Third Circuit held that *Campbell* rejected *Harper*, and the correct way to apply fair use was to consider all aspects and weigh the results together.³³³ On the other hand, the Second Circuit weighed the fourth factor as the most important factor.³³⁴ The Seventh Circuit held that the “transformative use” overlapped with the “derivative work” test.³³⁵ In the Ninth Circuit, both standards were presented, and the court has never given a clear solution to resolve this dilemma.³³⁶

As an amicus curiae brief written by eight intellectual property scholars³³⁷ supporting Google said:

This confusion exemplifies the clash between two competing paradigms of fair use – “transformative use” and “market-centered.” This Court’s *Harper* holding stems from a “market-centered” view, which tolerates limiting fair use when it “disrupts the copyright market without a commensurate public benefit.” In adopting the “transformative use” test in *Campbell*, this Court accepted a broader vision for the fair use standard first articulated by Judge Leval. But by not doing so explicitly, the debate unnecessarily

³³¹ *Harper & Row Publishers, Inc. v. Nation Enters.*, 471 U.S. 539, 579 (1994).

³³² *Campbell v. Acuff-Rose Music, Inc.*, 510 U.S. 569, 579 (1994).

³³³ *Murphy v. Millennium Radio Grp. LLC*, 650 F.3d 295, 306 (3d Cir. 2011).

³³⁴ *See, e.g., Fox Broad. Co. v. Dish Network, LLC*, 723 F.3d 1067, 1076 (2d Cir. 2013).

³³⁵ *See Kienitz v. Sconnie Nation LLC*, 766 F.3d 756 (7th Cir. 2014).

³³⁶ *See, e.g., Seltzer v. Green Day, Inc.*, 725 F.3d 1170, 1175 (9th Cir. 2013) (holding that the court should explore all four factors and evaluate the results together); *Monge v. Maya Magazines, Inc.*, 688 F.3d 1164, 1180 (9th Cir. 2012) (holding that the fourth factor is the most important).

³³⁷ The authors are Michael Kasdan, Orly Lobel, Lydia Loren, Mark McKenna, Lateef Mtima, Elizabeth L. Rosenblatt, Christopher B. Seaman, and Rebecca Tushnet.

dragged on for more than twenty years, leaving behind a trial of unpredictable decisions.³³⁸

The Supreme Court should have provided a clear standard of how to apply the four factors of the fair use defense and how to weigh those factors. “An intra-circuit split accompanied by an inter-circuit divide followed by lack of conformity to a Supreme Court decision normally warrants en banc review.”³³⁹

When analyzing the four fair use factors, at least in the cases involving the software industry, courts should consider the functional nature of software and not the transformative content test but the transformative purpose test. After all, computer code is “a set of instructions that performs the same function whenever it is used.”³⁴⁰ If courts focus on whether the alleged infringer altered the original work’s content, the developers would have to develop new software from scratch and cannot use something they already know to speed up the process. The developers may thus lose incentive to create new software, which will be contrary the copyright law’s goal to promote progress.

IV. CONCLUSION

Few cases have addressed the fair use defense issue in the software area. *Oracle v. Google*, as the most important case in the software area, will have a great impact on the technology industry. The Supreme Court’s decision in *Oracle* correctly applied the fair use doctrine because the Court did not apply the fair use doctrine narrowly, and it protected the software developer’s creativity. However, the Supreme Court should have provided a clear standard for the fair use doctrine and discussed the standard in greater detail. The clearer approach would make the result more predictable and not impair software developers’ ability to express their ideas and develop

³³⁸ Brief of Eight Intellectual Property Scholars as Amici Curiae supporting Petitioner at 9, *Google LLC v. Oracle Am., Inc.*, 140 S. Ct. 520 (2019) (No. 18-956).

³³⁹ *Id.* at 9-10 (quoting *Int’l Union v. Kelsey-Hayes Co.*, 872 F.3d 388, 390 (6th Cir. 2017)).

³⁴⁰ Petition for Writ of Certiorari at 27, *Google LLC v. Oracle Am., Inc.*, 140 S. Ct. 520 (2019) (No. 18-956).

more convenient applications that can benefit humanity. It will also make it easier for the lower courts to apply the fair use defense.

This Note does not call for the Supreme Court to provide a bright-line fair use analysis, which would make the fair use defense overly narrow and contrary to the legislative intent. Instead, this Note agrees with the Supreme Court's decision but calls for the Court to go further and clarify ambiguities in the fair use doctrine. In this way, the lower courts can focus more on the facts themselves when applying the fair use defense instead of struggling with the interpretation of the ambiguities.