

EXHIBIT 1

Expert Report of
Douglas Gary Lichtman

Oracle USA, Inc., et al., v. SAP AG, et al.
Case No. 07-CV-01658 PJH (EDL)
Confidential Pursuant to Protective Order

I. Purpose

1. One purpose of this Report is to offer an economic perspective on the public policy justifications of copyright law, with particular emphasis on copyright law's damages regime.

2. A second purpose of this Report is to supplement the expert report filed by Plaintiffs' Oracle USA, Inc., et al. ("Oracle") expert Paul K. Meyer by providing additional expert opinion on the question of how the evidence put forward in this dispute fits within copyright law's multi-faceted damages framework.

3. I should note that I have been retained by Oracle to do the above-described work, and I am being paid an hourly fee of \$665 per hour for my work. My compensation is in no way contingent on the substance of my opinions or conclusions.

II. Credentials of the Expert

4. I am currently a tenured professor of law at the Law School at the University of California, Los Angeles. I was appointed to that position in July 2007.

5. Prior to my appointment at UCLA, I was for nine years on the faculty at the Law School at the University of Chicago. I was an untenured professor from June 1998 until November 2002, and a tenured professor from December 2002 until my departure in 2007.

6. From 2002 until 2007, I served as Editor of the Journal of Law & Economics. The Journal of Law and Economics is widely regarded as the top peer-reviewed law-and-economics journal in the United States.

7. My teaching and research both focus on intellectual property, with particular emphasis on the public policy motivations and economic justifications that animate copyright and patent law. At UCLA, I teach the full range of intellectual property courses, including a survey intellectual property course, an introductory copyright course, an introductory patent course, and several advanced intellectual property seminars including an intensive copyright seminar and an intensive patent seminar. At Chicago, I similarly taught the full range of intellectual property courses, including an introductory copyright course, an introductory patent course, an advanced copyright course, an advanced patent course, and a survey

intellectual property course that was for a time mandatory for all first-year students.

8. I have published extensively on topics related to the economic and public policy justifications for intellectual property protection, including scholarly articles in both peer-reviewed journals and law reviews. My articles have appeared in, among other publications, the Journal of Law & Economics, the Journal of Legal Studies, Yale Law Journal, Stanford Law Journal, the University of Chicago Law Review, the Harvard Journal of Law & Technology, the Journal of Economic Perspectives, Georgetown Law Review and the Duke Law Journal. Most of my articles have been republished internationally, including in legal periodicals in China and India, and many more have been excerpted in domestic periodicals read by practicing lawyers and/or government decision-makers.

9. I regularly am invited to speak on intellectual property topics. I have in recent years spoken at dozens of academic institutions including Yale, Harvard, New York University, the University of Chicago, the University of California at Berkeley, the University of Pennsylvania, and China's Wuhan University. I also have participated in events designed for business and/or political audiences, such as policy workshops put on by the Hamilton Foundation and the Progress & Freedom Foundation, and business events sponsored by Microsoft, the Gerson Lehrman Group, and the publishing entity, Wolters Kluwer.

10. In addition to my purely academic work, I advise a diverse mix of clients on strategy and litigation issues related to intellectual property. From time to time, I am retained to provide expert testimony in litigation. Since December 2007, I have maintained a relationship with the law firm of Loeb & Loeb through which I have the opportunity to help keep their current and potential clients well-informed about cutting-edge legal issues.

11. I on occasion write for the popular press, for instance publishing editorials in the Wall Street Journal and the Los Angeles Times, and writing more comprehensive columns on legal issues for magazines like Regulation Magazine and IP Law & Business. I also frequently work with the media, participating in radio news programs and speaking on televised news broadcasts. Moreover, I myself host a popular monthly online radio program where my guests and I discuss cutting-edge copyright and patent issues.

12. Prior to my career in teaching, I attended Yale Law School where I earned my J.D. and was a Truman Scholar. Prior to that, I attended Duke University where I completed a combined program in electrical engineering and computer science. I graduated from Duke University first in my class. My research at Duke focused on parallel computing and, more specifically, strategies that programmers could use to re-structure traditional software algorithms such that they would run more efficiently in parallel computer architectures.

13. A complete curriculum vitae, which includes among other things a full list of my publications from the last ten years, is attached as Exhibit Lichtman-1. A list of all cases from the preceding four years in which I have testified either at trial, by deposition, or through a written report is attached as Exhibit Lichtman-2.

III. Summary of Opinions

A. As economic analysis makes clear, copyright law is an incentive system designed to encourage the creation and development of original work by limiting the degree to which competitors and even potential customers can copy without permission.

14. Copyright law is, at its heart, an incentive system designed to encourage authors to create, disseminate, publicize, and in other ways nurture original works of authorship.¹ Incentives are needed in this regard because it often takes substantial resources to create and otherwise care for creative work. Firms and individuals therefore need the promise of some sort of a reward before they will be able either to justify making those investments themselves or to lure outside investors, employees, and business partners to join in their creative efforts.²

¹ See United States Constitution, Art I., § 8, Cl. 8 ("The Congress shall have the power . . . To promote the Progress of Science and the useful Arts, by securing for limited Times, to Authors and Inventors, the exclusive Right to their respective Writings and Discoveries"); Sony Corp. of Am. v. Universal City Studios, Inc., 464 U.S. 417, 450 (1984) ("The purpose of copyright is to create incentives for creative effort.").

² Twentieth Century Music Corp. v. Aiken, 422 U.S. 151, 156 (1975) ("The immediate effect of our copyright law is to secure a fair return for an author's creative labor. But the ultimate aim is, by this incentive, to stimulate artistic creativity for the general public good."); Eldred v. Ashcroft, 537 U.S. 186, 212 n.18 (2003) ("[C]opyright law serves public

Without a proper reward system in place, society would see a reduction in the number and quality of creative works produced and (just as bad) a reduction in the number and quality of jobs and businesses related to, supportive of, and dependent on authorship.

15. Copyright law provides the above-described reward by limiting the degree to which competitors and even potential customers can copy protected work without permission.³ Economists refer to this as a constraint on free riding.⁴ Thus, for example, if an author toils away to write and publicize a fictional space adventure, copyright law in return preserves for that author the exclusive right to (say) duplicate the story in book form, present the story as a movie, and market associated products like action figures and collector's cards. The author will still face competition from other authors who have written their own space adventures. And the author will similarly still be fully vulnerable to the extent audiences find the work for some reason unappealing. But copyright law ensures that the author will at least be allowed to reap what he himself has sown. That by definition will be a reward well calibrated to the value he has himself made possible.

16. That said, not all copying is forbidden. After all, the incentive rationale for copyright law does not require that authors be accorded every penny of value that can be derived from the works they create. Thus, for example, thanks to the idea/expression dichotomy, a movie producer is allowed to watch a rival's film, admire its central concepts, and then "copy" the film in the sense of producing a competing film that embraces those same concepts at a high level.⁵ Similarly, thanks to the compulsory license established in section 115 of the Copyright Act, a singer is allowed to hear Madonna's latest song, admire it, and then "copy" it by recording that same

ends by providing individuals with an incentive to pursue private ones.").

³ See 17 U.S.C. § 106.

⁴ William M. Landes & Richard A. Posner, An Economic Analysis of Copyright Law, 18 J. Legal Stud. 325, 346 (1989) ("the economic rationale for copyright protection [is] to prevent free-riding").

⁵ See 17 U.S.C. § 102(b) ("In no case does copyright protection for an original work of authorship extend to any idea, procedure, process, system, method of operation, concept, principle, or discovery, regardless of the form in which it is described, explained, illustrated, or embodied in such work."). See also Baker v. Selden, 101 U.S. 99 (1879) (articulating the idea/expression dichotomy).

song for the singer's own album.⁶ I discuss the economic rationales for some of these exceptions later in this Report. For now, let me say only that exceptions of this sort require a compelling economic, public policy, or political justification. That is, copyright law neither easily nor often deviates from its basic approach of forbidding free riding.

17. The existence of unlawful copying obviously means that courts will from time to time need to calculate damages. That analysis requires a fact-finder to first identify the impermissible acts of copying and then quantify the harm done. Copyright law embraces a variety of theories and evidence toward that end.⁷ And this quantification is enormously important because it is the backstop that makes the incentive regime effective. If an infringer thought that he or she could copy unlawfully and then either avoid detection entirely or at worst pay some below-market price, that infringer would rationally choose to disregard copyright and take his chances on litigation. Were that behavior to become widespread, the result, quite obviously, would be to significantly undermine the incentives copyright law endeavors to create.

⁶ See 17 U.S.C. § 115 (establishing a compulsory license for musical works, with specific requirements of notice, payment, and lack of alteration).

⁷ See Mackie v. Rieser, 296 F.3d 909, 917 (9th Cir. 2002) ("To determine the work's 'market value' at the time of the infringement, we have endorsed a hypothetical approach: 'what a willing buyer would have been reasonably required to pay to a willing seller for [the owner's] work.'") (citing Frank Music Corp. v. Metro-Goldwyn-Mayer, Inc., 772 F.2d 505, 512 (9th Cir. 1985)); On Davis v. The Gap, Inc., 246 F.3d 152, 172 (1st Cir. 2001) ("The hypothesis of a negotiation between a willing buyer and a willing seller simply seeks to determine the fair market value of a valuable right that the infringer has illegally taken from the owner. The usefulness of the test does not depend on whether the copyright infringer was in fact himself willing to negotiate for a license. The honest purchaser is hypothesized solely as a tool for determining the fair market value of what was illegally taken."); Polar Bear Prods., Inc. v. Timex Corp., 384 F.3d 700, 708 (9th Cir. 2004) ("To take away incentives for would-be infringers and 'to prevent the infringer from unfairly benefitting from a wrongful act,' the statute also provides for the recovery of wrongfully obtained profits resulting from the infringement.") (quoting H.R.Rep. No. 94-1476, § 504, at 161 (1976), reprinted in 1976 U.S.C.C.A.N. 5659, 5777).

B. In this litigation, copyright law is being invoked to do exactly what it is supposed to do: reinforce Oracle's incentive to invest in its software products while at the same time leaving SAP free to in various ways compete for the same customers through legitimate means.

18. In the world of enterprise software, copyright law serves the very economic function I describe above: it encourages firms to create, publicize, distribute, and in other ways nurture their competing enterprise software products. The effect has been dramatic. Between 2002 and 2004, Siebel Systems, Inc. (now part of Oracle) invested between \$299 million and \$368 million each year in product development.⁸ PeopleSoft, Inc. (another Oracle acquisition) similarly plowed between \$299 million and \$433 million into product development between 2001 and 2003.⁹ And in fiscal years 2009, 2008 and 2007, Oracle itself shouldered a research and development budget of \$2.8 billion, \$2.7 billion, and \$2.2 billion, respectively.¹⁰

19. The copying at issue in this lawsuit is the type of copying that would, if left uncorrected, substantially undermine the incentive to invest in these ways. Again, copyright law fully embraces the right of SAP AG, SAP America, Inc., and TomorrowNow ("SAP TN"), (collectively with SAP TN, "SAP") to compete, including most importantly by developing and promoting its own alternative enterprise software system. Here, however, SAP has crossed the line. As I discuss later in the Report, its pattern of widespread, deliberate and unnecessary copying substantially threatens Oracle's incentives and yet cannot be justified on any plausible economic or public policy rationale. In short, copying at this scale and in this manner reduces overall market efficiency. It is the very free riding that copyright law for good reason forbids.

⁸ Siebel Systems, Inc., Annual Report (Form 10-K), at 30 (Mar. 11, 2005) (showing Siebel annual product development investments for 2002 through 2004).

⁹ PeopleSoft, Inc., Annual Report (Form 10-K), at 27 (Mar. 4, 2004) (showing PeopleSoft annual product development investments for 2001 through 2003).

¹⁰ Oracle Corp., Annual Report (Form 10-K), at 51 (June 29, 2009) (showing Oracle annual R&D investments for fiscal years 2007 through 2009).

IV. Detailed Opinion

A. Economic analysis makes clear that copyright law is primarily an incentive system designed to encourage the creation and development of original works of authorship.

20. Copyright law at first blush is something of a puzzle in that it purports to cover a wide range of seemingly unrelated works. The copyright system, after all, offers protection to almost any creative work, including novels, movies, statutes, photographs, audio recordings, dramatic performances, video games, and computer software.¹¹ Indeed, the statute has been interpreted to welcome almost any work of authorship so long as it was created by the relevant author and it demonstrates at least a modicum of creativity.¹² Romance novels thus stand as peers to science textbooks. Major motion picture blockbusters are again peers not just to those textbooks but also to low-budget independent films and home-made YouTube videos. Purely functional computer software—say, the computer program that runs the heating and air conditioning in the courtroom—likewise stands shoulder to shoulder with the latest Harry Potter novel and Madonna's most recent musical exploit.

21. There is an economic explanation for why copyright law brings together these seemingly diverse types of creative output. That explanation: to create, disseminate, publicize, and in other ways nurture any of these works, an author must typically invest some substantial combination of time, effort and money. Put differently, the unifying theme to copyright law is that it takes a potentially significant up-front investment to bring any copyright-eligible work into meaningful existence. Copyright law thus sets out to encourage authors to invest in the relevant ways.¹³

22. To see these dynamics, let us focus first on a familiar example like the process of creating a work of

¹¹ See 17 U.S.C. § 102(a) ("Works of authorship include the following categories: (1) literary works; (2) musical works, including any accompanying words; (3) dramatic works, including any accompanying music; (4) pantomimes and choreographic works; (5) pictorial, graphic, and sculptural works; (6) motion pictures and other audiovisual works; (7) sound recordings; and (8) architectural works.").

¹² Feist Publ'ns, Inc. v. Rural Tel. Serv. Co., Inc., 499 U.S. 340, 346 (1991) ("[O]riginality requires independent creation plus a modicum of creativity.") (citing The Trade-Mark Cases, 100 U.S. 82, 94 (1879)).

¹³ See, e.g., supra note 2.

pure fiction. The initial step in the creation of such a work might involve a single author toiling away, crafting dialogue, imagining plot points, and ultimately putting pen to paper over many months or even years. From there, an agent might become involved, offering feedback on the manuscript and perhaps triggering another several months of intense creative effort. At that point, the project might fail to find any further audience and be abandoned to a file cabinet in the author's home. But, if the author is fortunate, the project might instead be identified as promising by a publisher, and from there another round of edits might ensue, with the publisher providing corrections, the publisher researching potential problems, and the publisher further guiding the manuscript toward its final form.

23. With the book thus created, the process continues. In the hands of the publisher, there is hard work to do in terms of promoting the book to audiences, because without careful promotion a book can easily be overlooked among the tens of thousands of fiction books published every year. There is in addition effort required to attract the attention of book clubs and book reviewers, again as a necessary step toward ensuring that the book is not lost in the sea of peer volumes. And often there is an exhausting book tour to champion, where the author must read chapters of his book aloud in small bookshops, on local radio, and in the homes of an organized fan base.¹⁴

24. If the book is successful, the process continues yet further. The author might go back to the drawing board and work to develop a follow-on story that takes the characters through a second adventure. Or the author might himself or alongside a partner develop a motion picture script that translates the written word into dialogue, stage directions, and ultimately images and sounds. The publisher might in parallel embark on a new type of promotion, this time working to attract attention from retail and manufacturing partners who can produce and market action figures, collector's cards, and other story-inspired merchandise.

¹⁴ My example in the text has obvious parallels to the real-world experience of Oracle's founder, Larry Ellison. See Oracle Celebrates Thirty Years of Innovation, Oracle Magazine, July/August 2007 ed., available at http://www.oracle.com/oramag/profit/07-may/p27anniv_timeline.pdf.

25. All that is just a thumbnail sketch. But the above-described steps and the many steps I have left out all happen only if someone is willing to invest some substantial combination of time, effort and money. Moreover, that investment must be made with the knowledge that every moment, every penny, and every ounce of exertion can well turn out to be for naught because the work for any number of reasons might never find a receptive audience.

26. Copyright law is built on a recognition that authors and their supporters will be more likely to make those investments and shoulder those risks the more they believe that they will ultimately have a chance to earn some reward back. That economic analysis applies no matter whether the work in question is a book, a movie, a statue, a computer program, a photograph, or a musical performance. It similarly applies no matter whether the laboring oar is held by an author alone or managed by a group of authors whose efforts are backed by some enormous and complicated corporate entity.¹⁵ In each instance, an investment must be made to bring quality work forward. In each instance, copyright law encourages that investment by promising the possibility of an economic reward upon successful introduction of the work into the market.

27. Economic analysis celebrates all of this because, through these investments, society is the big winner. Society wins in part because more and better creative works are available to readers, listeners, and other consumers of copyright-eligible content. Society benefits in part because there are more jobs for people who aspire to be authors or aspire to work in support of quality authorship. And society benefits in part because most creative work has beneficial downstream ripple effects. A particularly moving memoir might inspire a young person to persevere through his own life challenges. A particularly efficient software package might help a small business focus on its core competencies while still getting the bills paid.

28. Economics tells us that the size of the rewards under copyright law ought to be calibrated in light of three inputs. First, and most obviously, the reward must at a minimum cover the costs of creation, promotion and the like.¹⁶ Bluntly, if an author expects to spend a thousand

¹⁵ See 17 U.S.C. § 101 (separately defining "work made for hire" and "joint work"); 17 U.S.C. § 201 (recognizing as authors not only joint authors but also employers).

¹⁶ Landes & Posner, supra note 4, at 327.

dollars creating his work but can hope to earn only one hundred dollars upon success, the author will be unlikely to make the initial investment. Second, the reward must account for the possibility of failure.¹⁷ A firm that backs twelve movies knows full-well that three of them will likely be flops. As a result, copyright cannot just pay the costs associated with the successful entries. If it did, that hypothesized firm would always suffer a net loss and for that reason would be discouraged from making movies in the first place.

29. Third, the reward must at least partially be responsive to the value the work brings to society.¹⁸ If fantastic works of authorship and mediocre works of authorship both simply allow their authors to break even, there would be little incentive for authors to aim for fantastic work. If copyright rewards grow as quality grows, by contrast, appropriate incentives are restored, and authors will have more reason to aim for the stars.¹⁹

B. Copyright law accomplishes its incentive goals through a particularly efficient mechanism: it limits the degree to which competitors and even potential customers can copy an author's work without permission.

30. Copyright protection accomplishes its economic and public policy goals by limiting the degree to which competitors and even potential customers can copy an author's work without permission.²⁰ The idea is to preserve for the author the ability to market his own wares.

31. A programmer, for instance, would be reluctant to invest time and money developing an innovative new software

¹⁷ Id. at 328 ("[T]he difference between the price and marginal cost of the successful work must not only cover the cost of expression but also compensate for the risk of failure.").

¹⁸ See, e.g., Fitzgerald Pub. Co. v. Baylor Pub. Co., 807 F.2d 1110, 1118 (2d Cir. 1986) ("Although the Act itself does not define what constitutes actual damages, the primary measure of recovery is the extent to which the market value of the copyrighted work at the time of the infringement has been injured or destroyed by the infringement."); Cream Records, Inc. v. Jos. Schlitz Brewing Co., 754 F.2d 826, 828 (9th Cir. 1985) (holding that where "defendants' unauthorized use destroyed the value of the copyrighted work for [a particular] purpose, plaintiff was entitled to recover that value as damages").

¹⁹ For the economics here, see Sherwin Rosen, The Economics of Superstars, 71 Am. Econ. Rev. 845 (1981).

²⁰ See 17 U.S.C. § 106 (enumerating the prohibitions).

program if he knew that potential customers would ultimately be allowed to take the finished product without paying. A software company would similarly be reluctant to hire programmers or build out substantial marketing and customer service capabilities if rival firms could simply sell the firm's software as if it were their own. Bluntly, a limitation on copying allows authors to reap what they themselves have sown. That is attractive on economic grounds because it increases the incentive to develop, disseminate, and in other ways care for creative work.

32. Economists use the term "free riding" to describe the types of copying that copyright law discourages.²¹ To "free ride" is to enjoy the benefit of a good or service without paying any of the costs. Free riding is problematic because it can lead to the inefficient under-production of the good or service in question.²² A classic example involves public transportation. Many passengers take a "free ride" by sneaking onto public transportation without paying. If a tiny number of passengers do so, no problem. Legitimate passengers would still pay enough to fund the system, and the missing money would be unlikely to much alter the scope or scale of the service. At some point, however, the balance tips, and the existence of those free riders begins to threaten the scale, scope, and indeed very existence of the public transportation project. That result is inefficient because even the free riders likely would prefer to pay for (and thus have access to) the service rather than live in a world without public transportation. Thus public transportation systems today endeavor to discourage free rides, for example by installing turnstiles at the entrance to the subway or asking a bus driver to collect payments at the door.

33. As the above makes clear, free riding can take many forms. One way to free ride on a published novel is to copy the novel in its entirety, perhaps by photocopying the book cover to cover. Another way is to read the novel, identify the major characters, and then produce a follow-up novel, an unauthorized movie, or an unlicensed action figure. Yet

²¹ See Robert Cooter & Thomas Ulen, Law and Economics 40-41 (2d ed. 1995); Landes & Posner, supra note 4, at 346.

²² See generally Mancur Olson, Jr., The Logic of Collective Action: Public Goods and the Theory of Groups (Harvard University Press 1965) (providing an economic explanation of this collective action problem posed by public goods). See also Richard H. McAdams, Relative Preferences, 102 Yale L.J. 1, 60-61 (1992) (describing the free rider problem associated with the market for intellectual property).

another way to free ride on a published novel is to transform the novel into a public dramatic performance like a Broadway play. These and other types of free riding are explicitly identified in the law as impermissible forms of copying. Specifically, in section 106, the Copyright Act in no uncertain terms reserves to authors the exclusive rights "to reproduce the copyrighted work," "to prepare derivative work based upon the copyrighted work," "to distribute copies" of the copyrighted work, "to perform the copyrighted work publicly," and "to display the copyrighted work publicly."²³

34. This strategy of encouraging creative work by limiting free riding is, from an economist's perspective, a particularly efficient means toward that end.²⁴ Sure, there are other ways that copyright law could have encouraged the creation and distribution of original work. For example, copyright could have been structured as a system of government-administered grants under which some government agency would decide which projects to fund and how generously to fund them.²⁵ That approach, however, would have focused enormous discretion on government officials, introducing both the risk that the government might make a mistake when it came to deciding how much to value one work versus another, and the risk that the government would play

²³ 17 U.S.C. § 106.

²⁴ Mazer v. Stein, 347 U.S. 201, 219 (1954) ("The economic philosophy behind the clause empowering Congress to grant patents and copyrights is the conviction that encouragement of individual effort by personal gain is the best way to advance public welfare through the talents of authors and inventors in 'Science and useful Arts.'). See Nancy Gallini & Suzanne Scotchmer, Intellectual Property: When Is It the Best Incentive System?, 2 Innovation Policy and the Economy 51, 70 (Adam Jaffe, Joshua Lerner & Scott Stern eds., 2002) ("IP is probably the best mechanism for screening projects when value and cost are not observable by the sponsor, since the private value of IP reflects the social value, and firms automatically compare some measure of value with the cost of innovation.").

²⁵ See, e.g., Stephen Breyer, The Uneasy Case for Copyright: A study of Copyright in Books, Photocopies, and Computer Programs, 84 Harv. L. Rev. 281, 306-308 (1970) (suggesting that the government could subsidize the creation of important books where widespread copying is likely); Michael Kremer, Patent Buyouts: A Mechanism for Encouraging Innovation, Q. J. Econ. 1137 (November 1998) (proposing a system of auctioning patents to the highest bidder so that the inventor receives a prize equal to social value and no more).

favorites based on an author's political message or affiliation.²⁶

35. Restrictions on free riding avoid these problems because they allow an author's reward to be determined directly by economic forces in the market. There is no cash prize for finishing a novel. The only reward an author receives is the right to himself bring his work forward. Whether that is a valuable right depends entirely on what the relevant audience thinks. If readers, listeners, viewers, and other consumers of copyright-eligible content think well of the work, the author's exclusive rights can turn out to be enormously valuable. If readers, listeners, viewers, and other audience members are uninterested, by contrast, those exclusive rights can turn out to be completely worthless. The government's only role is to ensure that an author is allowed to take his shot.

36. Restrictions on free riding have other efficiency charms as well. Most importantly, restrictions on free riding still leave tremendous room for competition.²⁷ Remember, copyright law forbids various forms of unauthorized copying. What that means is that competing products can be brought to market so long as they were developed independently. Consider in this light the motion picture industry. In 1998, the major motion picture studios released dozens of competitive family offerings, including Antz, A Bug's Life, Mulan, The Parent Trap, The Rugrats Movie, Doctor Dolittle, and Babe: Pig in the City.²⁸ Importantly, two of those movies were enormously similar: Antz and A Bug's Life were both animated features about communities of talking bugs. Yet, because there was no impermissible copying – the characters and storylines presented in those two films differ significantly –

²⁶ See, e.g., Barry W. Tyerman, The Economic Rationale for Copyright Protection for Published Books: A Reply to Professor Breyer, 18 U.C.L.A. L. Rev. 1100, 1117 (1971) (asserting that heavy reliance on government "might lead to a loss of literary independence or even outright censorship").

²⁷ This is in contrast to patent rights, which intentionally and more seriously restrict certain forms of competition. See Eldred v. Ashcroft, 537 U.S. 186, 217 (2003) ("[C]opyright gives the holder no monopoly on any knowledge. A reader of an author's writing may make full use of any fact or idea she acquires from her reading. The grant of a patent, on the other hand, does prevent full use by others of the inventor's knowledge.").

²⁸ See The Internet Movie Data Base (IMDB), <http://www.imdb.com> (last visited Nov. 13, 2009).

competition was allowed to be particularly pointed. The team behind each of these movies pushed the other team to make an even better animated bug-inspired movie. Prohibitions on copying leave competition intact.

37. Another efficiency advantage associated with copyright law's anti-copying approach is that it empowers authors to set their own strategy for how best to bring their works to the public. If copyright law were structured as a system of government grants, authors would likely have no choice but to cash out immediately after creation. The work would be produced; the government would pay its prize; and the author would at that point lose any control over the work. A government system of compulsory licenses would similarly limit author flexibility because again the government would be determining the structure of any deal.²⁹

38. Copyright's limitations on copying, however, let a thousand flowers to bloom. Motion picture studios, for example, play with a mixture of strategies. They release a new film in theaters first, then they layer in later releases to video-on-demand, cable television, broadcast television, the home DVD market, the home rental market, and now increasingly digital services like Apple TV, Amazon Unbox and Netflix's online streaming.³⁰ Book publishers similarly make use of the law's flexibility. A book publisher might first release a new book in hard cover and then later release paperback versions, e-books, and abridgements. Importantly, copyright law leaves these choices to authors and their business partners. Copyright does not tell an author how a particular work should be brought into public enjoyment; it simply assures authors that the choice will be their own, rather than being usurped by some rival in support of the rival's own timing, pricing and strategy goals.

39. That said, not all copying is forbidden, because the incentive rationale for copyright law does not require that authors be accorded every penny of value that can be derived from the works they create. Thus, in specific settings where a compelling economic, public policy, or

²⁹ See, e.g., 17 U.S.C. § 115 (establishing a compulsory license for musical work and thus limiting the possibility for alternative business models in that context).

³⁰ See, e.g., David Carr, A Red Carpet That Leads To All Homes, N.Y. Times, Mar. 15, 2009, at B1 (describing a new trend of film premieres via digital media offerings such as Apple's iTunes and Amazon's Unbox).

political justification champions the cause, copyright law does allow a bit of efficient copying.³¹

40. Most important in this category of doctrines is copyright law's idea/expression dichotomy. Codified in the statute at section 102(b), the idea/expression dichotomy excuses copying in instances where the copying constitutes the taking of an idea but does not in addition involve the taking of expression.³² As an example, an author is allowed to watch the original Star Wars movie and then copy the basic concept of a space adventure that features a swash-buckling Han-Solo-type rogue hero. That second author cannot name his hero Han Solo, nor can that second author hue too closely to the original story's plot points, character mix, or choice of words and images. But the basic idea of a space adventure is free for the taking, because copyright's idea/expression dichotomy leaves room for this limited form of unauthorized copying.³³

41. There are many rationales for the idea/expression dichotomy. One is that it is required by the First Amendment, because otherwise copyright law would substantially interfere with the free exchange of ideas.³⁴ Another is that the idea/expression dichotomy directs

³¹ Because new works of authorship frequently build on material from earlier works, increasing copyright protection beyond a certain threshold tends to increase the cost of creating new works. Landes & Posner, supra note 4, at 332-333 ("If copyright protection effectively prevented all unauthorized copying . . . , [t]he effect would be to raise the cost of creating new works . . . , and thus, paradoxically, perhaps lower the number of works created."). A similar point can be made with respect to new technologies. See Sony Corp. of Am. v. Universal City Studios, Inc., 464 U.S. 417 (1984) (allowing certain types of copying in order to subsidize the production of a then-new technology, the video tape recorder).

³² "In no case does copyright protection for an original work of authorship extend to any idea, procedure, process, system, method of operation, concept, principle, or discovery, regardless of the form in which it is described, explained, illustrated, or embodied in such work." 17 U.S.C. § 102(b) (1976).

³³ Obviously, in certain instances, the line-drawing here is difficult. Learned Hand famously struggled with that problem in Nichols v. Universal Pictures Corp., 45 F.2d 119 (2d Cir. 1930), cert. denied, 282 U.S. 902 (1931).

³⁴ See Harper & Row, Publr. v. Nation Enters., 471 U.S. 539, 557 (1985) ("[C]opyright's idea/expression dichotomy '[strikes] a definitional balance between the First Amendment and the Copyright Act by permitting free communication of facts while still protecting an author's expression.'") (quoting Second Circuit decision below, 723 F.2d 195, 203 (2d Cir. 1983)).

traffic between copyright law and patent law.³⁵ Patent law, after all, does allow an inventor to stop others from copying his ideas, but it does so only under limited circumstances. For instance, patent law requires that the idea in question be significantly unique as compared to ideas already known in the relevant field,³⁶ and patent law further requires that a patent applicant disclose in significant detail exactly how the relevant invention works.³⁷ The idea/expression dichotomy is thus perhaps best explained on the ground that it stops inventors from ducking those requirements by using copyright law to protect what patent law is meant to protect.

42. Another category of exceptions to the prohibition on copying involves exceptions where authorship incentives are not plausibly at stake. Consider, for example, the rule that prohibits unauthorized performances. The statutory provision that forbids this form of copying does so only with respect to public performances. Private performances are thus by definition permissible.³⁸ The economic rationale is that private performances do not much matter when it comes to copyright law's incentive purpose.³⁹ While a playwright can plausibly detect public performances of his work and request sometimes substantial payments for them, a playwright cannot plausibly detect private performances (like a dramatic reading by a father to his son) nor would

³⁵ Mazer v. Stein, 347 U.S. 201, 218 (1954) ("Unlike a patent, a copyright gives no exclusive right to the art disclosed; protection is given only to the expression of the idea—not the idea itself."); Lexmark Int'l, Inc. v. Static Control Components, Inc., 387 F.3d 522, 535 (6th Cir. 2004) (section 102(b) "embodies the common-law idea-expression dichotomy that distinguishes the spheres of copyright and patent law").

³⁶ See 35 U.S.C. §§ 102 & 103 (judging asserted inventions on grounds of obviousness and novelty).

³⁷ See 35 U.S.C. § 112 (requiring a disclosure sufficient to inform someone skilled in the relevant art).

³⁸ See 17 U.S.C. § 101 (defining what it means to perform a work "publicly"); § 106(4) (forbidding unauthorized public, but not private, performance).

³⁹ "[A] use that has no demonstrable effect upon the potential market for, or the value of, the copyrighted work need not be prohibited in order to protect the author's incentive to create. The prohibition of such noncommercial uses would merely inhibit access to ideas without any countervailing benefit." Sony Corp. of Am. v. Universal City Studios, Inc., 464 U.S. 417, 451 (1984). See also Twentieth Century Music Corp. v. Aiken, 422 U.S. 151, 155 (1975) ("No license is required by the Copyright Act, for example, to sing a copyrighted lyric in the shower.").

such performances generate substantial revenue above and beyond the purchase price of the play itself. Knowing this, there is no reason to forbid private performance. An author cannot capitalize on private performances in any event.⁴⁰

43. There are still other exceptions to the general rule against copying. Section 115 of the statute, for example, allows musicians to copy for their own albums songs that were written by unaffiliated composers and previously released to the public in record, CD, or comparable form.⁴¹ Section 110 similarly allows, under certain conditions, bars and restaurants to use conventional television equipment to "rebroadcast" live television for the enjoyment of their patrons.⁴²

44. But these and other exceptions do not swallow the more general rule. Copyright law rewards authors by limiting the degree to which competitors and even potential customers are allowed to copy protected work without permission. Authors must still face competition from rivals who have themselves independently developed comparable works. And authors are at the same time fully vulnerable to the sometimes fickle reactions of their target audiences. But copyright law at a minimum ensures that an author will be allowed to bring his own work forward, rather than seeing his competitors and customers copy it without permission.

C. Damages analysis requires a fact-finder to identify any impermissible copying and then quantify the harm done.

45. The existence of unlawful copying obviously means that judges and juries will from time to time need to calculate damages. That analysis requires a fact-finder to first identify the impermissible acts of copying and then quantify the harm done. The first step there turns on the legal, economic and public policy considerations I articulate above. The second step, meanwhile, leans on a wide range of evidence, with particular emphasis on information that might help the court determine the fair market value of the work the copyist misappropriated and (relatedly) the amount the copyist would be required to

⁴⁰ This particular example has other virtues as well. On privacy grounds, for instance, few of us would want authors to know when and whether we read their work aloud, and even fewer of us would want composers to know how poorly we might sing their works in the shower.

⁴¹ See 17 U.S.C. § 115.

⁴² See 17 U.S.C. § 110.

pay had the copyist chosen to negotiate instead of simply copying without permission.⁴³

46. The economic logic here ties directly to the very structure of copyright law. As I mentioned above, copyright law could have been structured as a system of government-administered grants under which some government agency would have decided what projects to support and how generously to support them. The Constitution rejected this view, however, recognizing that actual readers, listeners, and other market actors can more reliably determine precisely what an author's reward should be and indeed whether an author ought to be rewarded at all.⁴⁴

47. Damages calculations therefore represent the very type of interaction that copyright law means to avoid: interactions where the government determines the value of a copyrighted work. The law embraces damage calculations, however, because there is no other choice. When an infringer disregards copyright, the law must attempt some sort of quantification, or else infringers would be even more tempted to infringe (it's free!) and authors would as a result be less motivated to write and disseminate. Damages are thus rightly understood as a necessary backstop to the copyright regime. The system works best when infringers resist the urge to take work that they did not themselves originate; but where infringers succumb, juries are empowered, within limits, to estimate the harm done.

D. In this litigation, copyright law is being invoked to do exactly what copyright law is supposed to do: reinforce Oracle's incentive to invest in its software products.

48. Economic analysis emphasizes the need for copyright protection in instances where an author must invest substantial resources in order to create, disseminate, and in other ways nurture a creative work. Here, that need and those investments are both readily apparent.

49. Oracle spent a veritable fortune building, acquiring, and in other ways developing the works at issue in this case. Indeed, Oracle's acquisition costs alone represent investments of staggering consequence. Oracle spent over 11 billion dollars in December 2004 to acquire PeopleSoft⁴⁵ and

⁴³ See supra note 7.

⁴⁴ See supra note 1.

⁴⁵ Oracle Corp., Annual Report (Form 10-K), at 72-76 (July 1, 2005).

then another 6.1 billion dollars in January 2006 to acquire Siebel.⁴⁶ Both of those deals were complicated exchanges that led to the transfer of software, manuals, employees, customer relationships and more. But a substantial chunk of each investment was and is rightly attributed to the value of the copyrighted work.⁴⁷

50. After acquisition, Oracle's pattern of investment continued. As of May 2009, for example, Oracle employed approximately 86,000 full-time employees, including approximately 22,000 whose job it was to research and develop new software and products; approximately 20,000 who worked in sales and marketing; approximately 8,000 who worked on product support; and yet another approximately 8,000 who worked in general and administrative positions.⁴⁸ Organizational charts produced in this litigation show that nearly 70,000 people report to Larry Ellison, Oracle's CEO.⁴⁹

51. In the absence of copyright protection, there is substantial reason to worry that Oracle would never have made those investments nor employed those many individuals. The result would not have been measured in just the loss of worthwhile copyrighted materials, nor just the loss of those many jobs and authorship opportunities. The loss would in addition have been measured in terms of the downstream impact on Oracle's customer base. Enterprise software, after all, enables firms to focus on their core competencies while the software takes care of necessary but more mundane administrative work. Without it, the mundane work would still need to be done, but now it would be

⁴⁶ Oracle Corp., Annual Report (Form 10-K), at 75-78 (July 21, 2006).

⁴⁷ See, e.g., ORCL00313160-253 & ORCL00312747-819 (Standard & Poor's Reports entitled "Oracle Corporation: Estimation of the Fair Value of Certain Assets and Liabilities of PeopleSoft, Inc. as of December 28, 2004" and "Oracle Corporation: Estimation of the Fair Market Value of Certain Assets and Liabilities of Siebel Systems, Inc. as of January 31, 2006,"). Allocating value here is actually a complicated analysis. After all, most of the assets transferred in the PeopleSoft and Siebel deals would be in some way related to the copyrighted material. Those customer relationships, for instance, were fully tied to the copyrighted software. It is thus awkward to think separately about the value of the customer relationships on the one hand and the value of the software standing alone on the other.

⁴⁸ Oracle Corp., Annual Report (Form 10-K), at 12 (June 29, 2009).

⁴⁹ See, e.g., Deposition Exhibit 505A from the June 29, 2009 of Edward Abbo; Deposition Exhibit 651 from the September 17, 2009 Deposition of Keith Block.

Oracle's clients doing that work directly, rather than pursuing their other, typically more noble endeavors.

52. I say all this just to make clear that the economic analysis I articulated above is not just some abstract theory. It is this case. It is these facts. It is this industry.

E. The copying at issue in this litigation is the type of copying that would undermine the incentive system copyright law is designed to create.

53. As I discussed previously, and fully consistent with copyright law's incentive purpose, copyright law allows for a wide range of legitimate competition. In this market, for example, SAP TN was free to develop its own enterprise software and compete with Oracle on that level; and SAP TN was even allowed to work directly with each specific customer to improve and update that customer's licensed software installation.⁵⁰ But SAP TN chose to go far beyond these legitimate approaches and instead to copy in ways that involve substantial and unjustified free riding.

54. To properly characterize that free riding, it is necessary first to more precisely describe the software and support materials⁵¹ that are in dispute. With that goal in mind, prior to writing this Report, I participated in two interactive demonstrations run by Oracle developers Julie O'Shea, Norm Ackermann, and Linda Fowler. I also spoke several times with Oracle's forensic computer expert, Kevin Mandia. Throughout all of those interactions, I in addition relied on my own computer science background.

⁵⁰ See May 5, 2009 Deposition of Lawrence J. Ellison at 38:12-39:14 (noting that third party support is appropriate where it respects Oracle's intellectual property and is within contractual rights); Oracle's Responses and Objections to Interrogatory No. 10 from TomorrowNow's First Set of Interrogatories (the appropriate parameters for third party support are found in a customer's license agreements, any support renewal notices sent to the customer or renewals made by the customer, and the various contracts and policies associated with access to Customer Connection).

⁵¹ I understand "software and support materials" to mean software or related support material copyrighted by Oracle, including program updates, software updates, bug fixes, patches, custom solutions, instructional documents, knowledge management solutions, FAQs, Tech Notes, Alerts and similar customer support materials related to Oracle software products, including the PeopleSoft, J.D. Edwards, Siebel, and Oracle Database families of software products.

55. Based on all of that, I want to now define two terms that will then help me speak clearly about what SAP TN did and why it matters.

56. I use the term "**Enterprise Application Software**" to refer to the computer code and associated data that, taken together, constitute a software application in Oracle's PeopleSoft, J.D. Edwards, or Siebel branded software product families. I assume that Enterprise Application Software was written by one or more employees or independent contractors who in turn worked for Oracle or for a company since acquired by Oracle. Enterprise Application Software is creative.⁵² That is, when it came time to write the code that instructs the computer in how to accomplish its tasks; and when it came time to populate the data files that store information relevant to those tasks; and when it came time to design the overall structure and many substructures of this complicated system, each of those activities presented to the relevant authors a wide range of choices in terms of what words to use, what organizational schemes to adopt, and how ultimately to achieve the relevant functional and/or expressive goals. Upon completion, each result also embodied a bit of the personality of the author or authors involved. Lastly, Enterprise Application Software is stored on at least one type of non-transient memory, for example a hard drive or tape backup.⁵³

⁵² During the aforementioned technical demonstrations, I asked Julie O'Shea, Norm Ackermann, and Linda Fowler whether Enterprise Application Software is creative. I also asked more specifically whether the creation of Enterprise Application Software is the type of activity where an author is presented with a wide range of choices in terms of what words to use, what organizational schemes to adopt, and how ultimately to achieve the relevant functional and/or expressive goals. Further, I asked specifically whether, upon completion, the various code segments, data files, and organizational schemes that make up Enterprise Application Software turn out to embody a bit of the personality of the author or authors involved. All three developers answered these questions affirmatively. This is consistent with my own understanding based on the code excerpts I have seen, my conversations with Kevin Mandia, and my own background and training in computer science.

⁵³ I confirmed this fact with Julie O'Shea, Norm Ackermann, and Linda Fowler, and I also confirmed this fact with Kevin Mandia. Moreover, this fact is consistent with my own understanding of computer science. When the various components of Enterprise Application Software were written, they were by necessity stored in some computer memory prior to be distributed more broadly. Moreover, when those components were delivered to customers, again they were by necessity stored in some form of non-transient memory.

57. I use the term "Oracle Fix" to refer to any computer code currently owned by Oracle where the code is ultimately meant to be sent to a customer in order to solve a problem, correct an error, or improve some aspect of the Enterprise Application Software's appearance or performance. An Oracle Fix can take a variety of forms, including that of a COBOL source code file, an SQR file, an SQC file, a DAT file, a DMS file, a project file, or simply new human-readable documentation.⁵⁴ I assume that each Oracle Fix at issue in this dispute was written by one or more employees or independent contractors who in turn worked for Oracle or for a company since acquired by Oracle. Lastly, many if not all Oracle Fixes at issue in this dispute are creative in the sense explained above.⁵⁵ Lastly, each Oracle Fix at issue in this dispute was stored on at least one type of non-transient memory, for example on a centralized Oracle server.⁵⁶

58. With that terminology in hand, the first step in my analysis is to identify what out of the material at issue is eligible for copyright protection. Given what I have said above, that turns out to be straightforward. Copyright law embraces a work of authorship if (a) it is "original" in the sense of having been created by the relevant author;⁵⁷ (b) it further demonstrates at least a modicum of

⁵⁴ Each of the acronyms in that sentence refers to a type of computer file used by Oracle to update customer code, data and/or documentation. For the purposes of this Report, the detailed distinctions are unimportant. What is important is that, no matter their structure or the language in which they were written, all of these file types fit the descriptions I give in the text. For example, they were all authored by individual human authors, and they were all ultimately stored in some form of permanent or semi-permanent memory.

⁵⁵ Again, I confirmed this explicitly with Julie O'Shea, Norm Ackermann, and Linda Fowler. This is also consistent with my own understanding based on the code excerpts I have seen, my conversations with Kevin Mandia, and my own background and training in computer science.

⁵⁶ I confirmed this fact explicitly with Kevin Mandia, Julie O'Shea, Norm Ackermann, and Linda Fowler. This is also consistent with my own understanding of computer science, in that the Oracle Fixes must have been stored in non-transient memory before they were tested, distributed and ultimately installed.

⁵⁷ See 17 U.S.C. § 102(a) ("Copyright protection subsists . . . in original works of authorship fixed in any tangible medium of expression."); Feist Publ'ns, Inc., 499 U.S. at 346 (explaining the proper interpretation of "original").

creativity;⁵⁸ and (c) it has been fixed in a tangible medium of expression such that it can be perceived, reproduced, or otherwise communicated for a period of more than transitory duration.⁵⁹

59. As defined and discussed above, Enterprise Application Software meets these threshold requirements easily. Enterprise Application Software is original in that it was written by one or more employees or independent contractors who in turn worked for Oracle or a company since acquired by Oracle. Most or all of its many components are creative and thus clearly demonstrate the required modicum of creativity. Lastly, Enterprise Application Software as a whole has been fixed in one or another permanent or semi-permanent medium like a hard drive or tape backup.

60. Most of what I describe as an Oracle Fix also meets these threshold requirements easily. Oracle Fixes are original in that they were written by one or more employees or independent contractors who in turn worked for Oracle or a company since acquired by Oracle. Most are also creative in the familiar two senses: their creation presented to the relevant author or authors a wide range of choices in terms of what words to use, what organizational schemes to adopt, and how ultimately to achieve the relevant functional and/or expressive goal; and, as created, their code, data, and overall organization ultimately embodied at least a bit of the personality of each of the relevant authors. Lastly, each Oracle Fix at issue in this dispute has quite clearly been fixed in one or another permanent or semi-permanent medium.

61. The second step in analyzing the copying alleged in this dispute is to precisely characterize the copying with reference to the prohibitions listed in section 106 of the Copyright Act. Below, I therefore catalogue the types of

⁵⁸ Id. (articulating the "modicum of creativity" standard); accord Bleistein v Donaldson Lithographing Co., 188 U.S. 239, 251 (1903) ("It would be a dangerous undertaking for persons trained only to the law to constitute themselves final judges of the worth of pictorial illustrations, outside of the narrowest and most obvious limits."). See also Douglas Lichtman, Copyright as a Rule of Evidence, 52 Duke L. J. 683, 683-717 (2003) (also arguing that a low bar for creativity is appropriate).

⁵⁹ 17 U.S.C. § 102(a) (stating that, to be eligible for protection, works must be "fixed in any tangible medium of expression, now known or later developed, from which they can be perceived, reproduced, or otherwise communicated, either directly or with the aid of a machine or device").

copying of which I am aware, explaining each with precision and then identifying the implicated economic, incentive, and public policy issues.

62. **Unauthorized Reproduction.** Section 106(1) prohibits the unauthorized reproduction of copyrighted material. Two types of unauthorized reproduction are alleged in this case. SAP TN allegedly copied Oracle Enterprise Application Software in order to make test, development, and backup copies for use internally.⁶⁰ SAP TN also allegedly copied many Oracle Fixes, including a large number of copyright-eligible Oracle Fixes, in order both to maintain copies internally and to share copies in whole or in part with SAP TN's various clients.⁶¹

63. **Unauthorized Derivative Work.** Section 106(2) prohibits the unauthorized use of copyrighted material to create a derivative work. Section 101 clarifies that a derivative work is either (a) a work that "recast[s], transform[s], or adapt[s]" some copyrighted work; or (b) a work consisting of modifications which, taken as a whole, represent an original work of authorship.⁶² In the Ninth Circuit, a derivative work must also be fixed⁶³ and must substantially incorporate protected material from the preexisting work.⁶⁴ Two types of alleged copying fit this description. SAP TN allegedly created unauthorized derivative work when it used copyrighted Oracle Fixes and/or copyrighted Oracle Enterprise Application Software to create code or data for its customers.⁶⁵ SAP TN also allegedly created unauthorized derivative work when it applied either Oracle Fixes or other code changes to its internal copies of Oracle Enterprise Application Software.⁶⁶

⁶⁰ See, e.g., Fourth Amended Complaint for Damages and Injunctive Relief ("Compl.") at ¶ 19.

⁶¹ See id. at ¶ 18.

⁶² See 17 U.S.C. § 101 (definition of derivative work).

⁶³ Formgen v. Micro Star, 154 F.3d 1107, 1110 (9th Cir. 1998) (stating that a derivative work must exist in a "concrete or permanent form") (quoting Lewis Galoob Toys, Inc. v. Nintendo of Am., Inc., 964 F.2d 964, 967 (1992)).

⁶⁴ Id. (stating that a derivative work must "substantially incorporate protected material from the preexisting work") (citing Litchfield v. Spielberg, 736 F.2d 1352, 1357 (9th Cir. 1984)).

⁶⁵ See, e.g., Compl. at ¶ 19.

⁶⁶ See id. at ¶ 121.

64. **Unauthorized Distribution.** Section 106(3) prohibits the unauthorized distribution of copyrighted material to the public by sale, lease, or lending. Two types of unauthorized distribution are alleged in this case. SAP TN allegedly distributed to its customers Oracle Fixes without permission.⁶⁷ SAP TN also allegedly distributed to its customers unlawful derivative work based on Oracle Fixes and/or Oracle Enterprise Application Software.⁶⁸

65. **Contributory Infringement.** Under the doctrine of contributory infringement, a party can be held liable for knowingly encouraging another party to infringe any of the rights listed in section 106.⁶⁹ Three types of contributory infringement are alleged in this case. SAP TN allegedly induced its customers to copy Oracle Fixes onto their machines without Oracle's permission.⁷⁰ SAP TN allegedly induced its customers to copy derivative work based on Oracle's copyrighted material onto their machines without Oracle's permission.⁷¹ And SAP TN allegedly induced its customers to create unlawful derivative work by applying various code and data updates to their Enterprise Software Applications.⁷²

66. The acts of copying enumerated above represent more than a series of mere technical violations of the Copyright Act. They are technical violations to be sure; but they are also and more importantly the types of free riding that copyright law for good reason forbids.

67. After all, widespread copying of the sort described above would have an enormous impact on Oracle's incentives. Indeed, Oracle would not rationally maintain its level of investment in this code if it knew that SAP was going to be allowed to benefit in these ways without paying any of the associated costs. SAP would simply enjoy too sharp of a competitive advantage. Oracle would alone carry the burden of its investment, but SAP nevertheless would find itself on similar footing when it came to using the copied materials to help attract and maintain customers.

⁶⁷ See *id.* at ¶ 18.

⁶⁸ See *id.* at ¶¶ 19, 122.

⁶⁹ See *MGM Studios, Inc. v. Grokster, Ltd.*, 545 U.S. 913, 930 (2005) ("[o]ne infringes contributorily by intentionally inducing or encouraging direct infringement").

⁷⁰ See, e.g., *Compl.* at ¶ 18.

⁷¹ See *id.* at ¶ 19.

⁷² See *id.* at ¶¶ 18-19.

68. That harm to Oracle's incentives cannot be justified on any efficiency or public policy rationale. Unlike more attractive forms of copying, the copying here is not destined to result in some new product meaningfully different from the copied work. Quite the opposite, SAP TN allegedly engaged in redundant, near-slavish copying, undertaken (it is alleged) with the express purpose of producing an output that would almost perfectly mirror Oracle's original work.⁷³

69. Moreover, copying of this sort was not necessary as a means to promote competition. Even without this copying, SAP TN was allowed to develop its own enterprise software and compete with Oracle on that level; and SAP TN was even allowed to work directly with each specific customer to improve and update that customer's software installation.⁷⁴

70. SAP TN, however, went beyond those legitimate means and instead pursued a shortcut that reduced costs for SAP TN while eroding the incentives copyright law intended to create for Oracle. That was understandably attractive to SAP, but it was at the same time drastically inconsistent with copyright law's incentive rationale. Copying is always cheaper than creating, and copying is also always cheaper than competing legitimately. A copyist needs much more of an efficiency justification or a public policy rationale before copyright law will sacrifice its own incentive purpose and countenance a blatant free ride.

F. Damages appropriately awarded as a result of SAP TN's copying can be adequately estimated in this litigation by reference to Oracle's expenditures, SAP TN's next-best alternatives, and other standard damages measures.

71. As set forth in the simultaneously submitted reports of Oracle's damages and technical experts, there is in this case substantial evidence available to help the jury determine the fair market value of the head-start SAP enjoyed by first acquiring Tomorrow Now and then continuing to allow Tomorrow Now to infringe copyright in the ways discussed above.

72. In particular, I have reviewed the Declaration of Paul Meyer in Support of Plaintiffs' Opposition to Defendants' Motion for Partial Summary Judgment Regarding Plaintiffs' Hypothetical License Damages Claim as well as relevant

⁷³ See, e.g., Compl. at ¶¶ 16-20.

⁷⁴ See supra note 50.

portions of the expert report filed by Paul K. Meyer, and both catalog and evaluate various types of evidence relevant to damages here. I have also reviewed the expert report filed by Paul C. Pinto, and it estimates the significant savings SAP enjoyed by copying instead of competing legitimately. That is a highly relevant measure of the fair market value of the material SAP infringed.

IV. Conclusion

73. The analysis contained herein is based on the materials that have been made available to me in the case, several discussions with Oracle's technical staff, several discussions with Oracle's legal counsel, and my own knowledge of copyright law, copyright policy, copyright economics, and computer science. To the extent new information comes to light, I reserve the right to augment and/or revise my opinion as appropriate. A list of materials I considered in developing this Report is attached as Exhibit Lichtman-3.

74. The analysis here is also not in any way meant to imply that the above are the only considerations relevant to SAP's damages liability. There could well be additional factors that are properly considered, for example factors that might be discussed in expert reports filed by SAP's one or several damages experts. I would be happy to further address any of those considerations in a revised report as well.

I confirm that the opinions contained herein represent a fair and unbiased analysis of the facts presented to me.

Date: November 16, 2009



Douglas Gary Lichtman