

## Addressing Copyright and Patent as Software's Legal Aegis: A Review of Software and Intellectual Property Protection

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ADDRESSING COPYRIGHT AND PATENT  
AS SOFTWARE'S LEGAL AEGIS:  
A REVIEW OF *SOFTWARE AND INTELLECTUAL  
PROPERTY PROTECTION*

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SOFTWARE AND INTELLECTUAL PROPERTY PROTECTION. *By Bernard A. Galler.*<sup>††</sup> Quorum Books. 1995. pp. X, 205, index. ISBN: 0-89930-974-7.

I. INTRODUCTION

Computer software permeates daily life in modern American society. In addition to its many obvious uses, such as the operation of the world's financial institutions and the control of air traffic, software also pervades the most ubiquitous consumer products, including the automobile (30,000 lines of software), television (500 kilobytes of software), and even the electric shaver (two kilobytes of software).<sup>1</sup> Accordingly, rules and regulations addressing the creation, distribution, and use of software impact everyone.<sup>2</sup>

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<sup>1</sup> See W. Wayt Gibbs, *Software's Chronic Crisis*, SCI. AM., Sept. 1994, at 86, 88. The reach of the software octopus will continue to grow—the amount of software in consumer products doubles every two years. *Id.* (citing Remi H. Bourgonjon, Director of Research, Phillips Research Laboratory in Eindhoven).

See generally MAX LERNER, AMERICA AS A CIVILIZATION 964 (30th Anniversary ed. 1987) (“In the decades ahead [computers and telecommunications] are likely to prove a watershed in defining the American and his conduct.”). Policy makers and elected officials are also keenly aware of the importance of software to society. See generally NEWT GINGRICH, TO RENEW AMERICA 7-8 (1995) (“We must accelerate America's entry into the Third Wave Information Age. . . . If we can grasp the true significance of these [scientific and technologic] changes, we can lead the world into the Information Age and leave our children a country unmatched in wealth, power, and opportunity.”); Albert Gore, Jr., *Infrastructure for the Global Village*, SCI. AM., Sept. 1991, at 150 (“There is no longer any doubt that [computers] will reshape human civilization even more quickly and more thoroughly than did the printing press.”).

<sup>2</sup> One commentator recently referred to software as “foremost among the valuable and technologically sophisticated information-based products that bear the hallmarks of an intellectual good.” Dan L. Burk, *Patents in Cyberspace: Territoriality and Infringement on Global Computer Networks*, 68 TUL. L. REV. 1, 28 (1993). Another commentator recently dubbed software as the “crown jewels of the information economy.” ANN WELLS BRANSCOMB,

In this light, Professor Bernard A. Galler's recent book *Software and Intellectual Property Protection*<sup>3</sup> warrants review.

As a professor of computer science, not law, Galler gives voice to a unique perspective of software intellectual property protection. With this book, Galler places himself in a small cadre of scientists and engineers, which sans formal legal training, engage in legal scholarship regarding intellectual property protection and software.<sup>4</sup> Although not an attorney, Galler is no tenderfoot in the field he explores; he founded and currently serves as president and trustee of the Software Patent Institute, an organization dedicated to improving Patent Office examination of software-related inventions.<sup>5</sup> Further, Galler brings to the discussion his observations as an expert witness in some landmark software copyright cases,<sup>6</sup> including *Apple v. Microsoft*,<sup>7</sup> *Lotus Development v. Paperback Software International*,<sup>8</sup> and *NEC v. Intel*.<sup>9</sup>

While Galler describes *Software and Intellectual Property Protection* as a guide to complex legal issues for both attorneys and computer

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WHO OWNS INFORMATION? FROM PRIVACY TO PUBLIC ACCESS 157 (1994) (hereinafter BRANSCOMB).

<sup>3</sup> BERNARD A. GALLER, *SOFTWARE AND INTELLECTUAL PROPERTY PROTECTION* (1995) (hereinafter GALLER).

<sup>4</sup> See, e.g., Randall Davis, *The Nature of Software and Its Consequences for Establishing and Evaluating Similarity*, 5 SOFTWARE L.J. 299 (1992); James R. Goodman et al., *Toward a Fact-Based Standard for Determining Whether Programmed Computers are Patentable Subject Matter: The Scientific Wisdom of Alappat and Ignorance of Trovato*, 77 J. PAT. & TRADEMARK OFF. SOC'Y 353 (1995); Allen Newell, *Response: The Models are Broken, the Models are Broken!*, 47 U. PITT. L. REV. 1923 (1986); Pamela Samuelson et al., *A Manifesto Concerning the Legal Protection of Computer Programs*, 94 COLUM. L. REV. 2308 (1994) (hereinafter Samuelson, *Manifesto*) (co-authors include Randall Davis and Mitchell D. Kapur).

<sup>5</sup> The objectives of the Software Patent Institute (SPI) include compiling a software technology prior art database and providing software technology lectures for Patent Examiners. *Activity Reports for Spring and Summer 1994*, THE SPI REP., Summer/Fall 1994, at 4. In his capacity as SPI president, Galler testified at a 1994 hearing held by the Patent Office regarding software based inventions. *U.S. Patent & Trademark Office Public Hearings on Patent Protection for Software-Related Inventions*, Feb. 10-11, 1994, at 58, reprinted in 1157 OFFICIAL GAZ. PAT. OFF. 99, and in 58 Fed. Reg. 22,152 (1994).

<sup>6</sup> In addition to the cases cited in the text, Professor Galler participated in many suits involving software and intellectual property. See, e.g., *Lotus Dev. Corp. v. Borland Int'l, Inc.*, 788 F. Supp. 78, 96 (D. Mass. 1992) (brief in the book found at page 100); *Allen-Myland, Inc. v. IBM*, 770 F. Supp. 1004, 1009 (E.D. Pa. 1991) (brief in the book found at page 57). Professor Galler is not alone as an expert witness in intellectual property law cases who has written a book about the collective experience. See, e.g., MARK ROSE, *AUTHORS AND OWNERS: THE INVENTION OF COPYRIGHT* (1993).

<sup>7</sup> 35 F.3d 1435 (9th Cir. 1994).

<sup>8</sup> 740 F. Supp. 37 (D. Mass. 1990).

<sup>9</sup> WL 67434 (N.D. Cal. 1989).

scientists,<sup>10</sup> this review is written from a legal perspective. The book's more than 200 pages consist of an introduction, ten legal instructional chapters, a chapter eleven conclusion, four appendices, a recommended reading list, and an index. Apart from the introduction and Chapter 11 conclusion, the remaining chapters each address individual copyright or patent law topics.

## II. EN TOTO ANALYSIS

Before delving into the specifics of the ten instructional chapters, this review first examines the book from a broad perspective. Section III of this review provides a detailed analysis of chapters 1 through 10.

### A. THE BOOK'S NARROWED SCOPE

In the introduction chapter,<sup>11</sup> Galler announces that the book will focus exclusively on copyright law<sup>12</sup> and patent law.<sup>13</sup> He then explains that the decision to narrow the book's scope from the totality of intellectual property law,<sup>14</sup> as the title promises,<sup>15</sup> rests in his assessment that software "fits rather

<sup>10</sup> GALLER, *supra* note 3, at X.

<sup>11</sup> *Id.* at 1-4.

<sup>12</sup> In broad terms, a copyright protects original expression. The basis of the United States copyright system is Article I, section 8, clause 8 of the Constitution which grants Congress the authority to enact legislation: "[t]o promote the [p]rogress of [s]cience . . . , by securing for limited [t]imes to [a]uthors . . . the exclusive [r]ight to their . . . [w]ritings." The statutory core of the copyright system is found at 17 U.S.C. §§ 101-810 (1994), *amended by* Uruguay Round Agreements Act, Pub. L. No. 103-465, § 514(c), 108 Stat. 4809 (1994) (amending sections 104A and 109, and adding section 1101). The executive agency administering the system is the Librarian of Congress. 17 U.S.C. § 701 (1994). Regulations are found at 37 C.F.R. §§ 201-204 (1995). Judicial administration of the system is through the federal courts, where cases of infringement begin in the district court, are appealed to the geographically appropriate circuit court, and are ultimately appealed to the Supreme Court. *See* 28 U.S.C. § 1338 (1994).

<sup>13</sup> In broad terms, a utility patent protects new, useful, and non-obvious ideas. The basis of the United States patent system is Article I, section 8, clause 8 of the Constitution which grants Congress the authority to enact legislation: "[t]o promote the progress of . . . useful arts, by securing for limited [t]imes to . . . [i]nventors the exclusive [r]ight to their . . . [d]iscoveries . . ."). The statutory core of the patent regime is found at 35 U.S.C. §§ 1-376 (1994), *amended by* Uruguay Round Agreements Act, Pub. L. No. 103-465, § 531, 108 Stat. 4809 (1994) (amending scattered sections of 35 U.S.C.). The executive agency administering the system is the Patent and Trademark Office. *See* 35 U.S.C. §§ 1-14 (1994). The bulk of regulations are found at 37 C.F.R. §§ 1-15a (1995). Judicial administration generally begins at the federal district court, and ultimately ends with the Supreme Court, as with copyright. The first appellate level, however, is unusual. The United States Court of Appeals for the Federal Circuit hears all appeals resulting from patent law infringement cases, regardless of the geographic location of the initial district court case. *See* 28 U.S.C. § 1295(a)(1),(4),(8) (1994).

<sup>14</sup> The forms of intellectual property protection include: patent, copyright, trademark, trade secret, the Semiconductor Chip Protection Act of 1984, the right of publicity, and

well under existing law” of these two regimes.<sup>16</sup> The book acknowledges trade secret law’s applicability to software, but declines to expand on this point, finding “little in that area that is peculiar to the computer.”<sup>17</sup> Notwithstanding this assertion, the sub-set of federal<sup>18</sup> trademark law devoted to protecting trade dress,<sup>19</sup> deserves attention.<sup>20</sup>

Federal trade dress protection, based on Section 43(a) of the Lanham (Federal Trademark) Act,<sup>21</sup> guards “the total image of a product and may include features such as size, shape, color or color combinations, texture, graphics, or even a particular sales technique.”<sup>22</sup> Trade dress law has applied outside the context of software since its inception,<sup>23</sup> and serves an important public protection role by reducing confusion regarding a good’s origin. Commentators have recently addressed the expansion of trade dress jurisprudence to software displays.<sup>24</sup> This further application of trade dress theory

contracts for the protection of ideas. See PETER A. ALCES & HAROLD F. SEE, *THE COMMERCIAL LAW OF INTELLECTUAL PROPERTY* 17 (1994) (hereinafter ALCES & SEE).

<sup>15</sup> The book’s dust jacket softens the impact by stating “copyright and patent issues.”

<sup>16</sup> GALLER, *supra* note 3, at 2.

<sup>17</sup> *Id.* at X. Galler’s view is not universally held. See, e.g., PAUL GOLDSTEIN, *COPYRIGHT, PATENT, TRADEMARK, AND RELATED STATE DOCTRINES* 867 (rev. 3d ed. 1993) (“Computer programs present special problems for trade secret protection.”).

<sup>18</sup> Some states also provide for trademark protection. See ALCES & SEE, *supra* note 14, at 18. Such state based protection, however, falls outside the domain of this discussion.

<sup>19</sup> 15 U.S.C. § 1125(a) (1994) (Section 43(a) of the Lanham Act as amended).

<sup>20</sup> The design patent (also termed an ornamental patent) represents yet another area of intellectual property law recently employed to protect computer software. A design patent differs from the more commonly recognized utility patent in a number of factors. Further discussion of design patent protection extends beyond the scope of Galler’s book because the value of its protection remains speculative in relation to the expense in obtaining the patent, and it is not generally perceived as a primary means to protect software. For a cogent discussion of the software-related design patent, see Daniel J. Kluth & Steven W. Lundberg, *Design Patents: A New Form of Intellectual Property for Computer Software*, *COMPUTER LAW.*, Aug. 1988, at 1. See generally U.S. PAT. & TRADEMARK OFFICE, *GUIDELINES FOR EXAMINATION OF DESIGN PATENT APPLICATIONS FOR COMPUTER-GENERATED ICONS*, 61 Fed. Reg. 11380-11382 (Mar. 20, 1996) (effective Apr. 19, 1996).

<sup>21</sup> 15 U.S.C. §§ 1051-1127 (1994), amended by Uruguay Round Agreements Act, Pub. L. No. 103-465, § 531, 108 Stat. 4809 (1994) (amending sections 1052 and 1127).

<sup>22</sup> *John H. Harland Co. v. Clarke Checks, Inc.*, 711 F.2d 966, 980 (11th Cir. 1983).

<sup>23</sup> “Although historically trade dress infringement consisted of copying a product’s packaging, . . . ‘trade dress’ in its more modern sense [could also] refer to the appearance of the [product] itself . . . .” *Ideal Toy Corp. v. Plawner Toy Mfg. Corp.*, 685 F.2d 78, 80 n.2 (3d Cir. 1982).

<sup>24</sup> For a sampling of the scholarship addressing the intersection of software with trademark law, see Richard Armstrong Beutel, *Trade Dress Protection for the “Look and Feel” of Software: The Lanham Act as an Emerging Source of Property Rights Protection for Software Developers*, 71 J.PAT. & TRADEMARK OFF. SOC’Y 974 (1989); Carl Caslowitz, “Trade Dress”

results from the belief that software screens are "highly visible, identifiable features of a product," and therefore worthy of trade dress protection.<sup>25</sup> Because Galler's legal experience remains confined to copyright and patent law, it is understandable that he declines to address this area. For completeness, however, his book should discuss the expansion of trade dress law to software displays, its rationale, the value of such protection, and the test for infringement with respect to software—a most controversial area of law.<sup>26</sup>

Galler further narrows his venture by concentrating strictly on domestic regimes, thereby excluding foreign and international protection systems.<sup>27</sup> Such a limitation remains agreeable given the dominance of the United States as both a consumer and supplier of software. Readers should also find this exclusively domestic focus acceptable to the extent that the publisher's spatial constraints would have precluded anything more than a cursory discussion of international environments.

## B. THE BOOK'S CONCLUSION

After Galler narrows the book's scope in the introductory chapter, the next ten chapters survey the intersection of software with copyright or patent law. These teachings possess a traditional and unpretentious quality; Section III of this review addresses the specifics of chapters 1 through 10 in greater detail. Chapter 11,<sup>28</sup> *Where Are We Now?*, serves as the book's closing reflection.

To provide a foundation for his conclusion in Chapter 11, Galler reviews the copyright system and presents some recent patent law developments.<sup>29</sup> He ultimately contends that despite the inherent weaknesses in these systems,

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*and Section 43(a) of the Lanham Act: Protection for Total Image of the Visual Display of Software Application*, 33 IDEA 187 (1993); George Likourezos, *Trademark Law in the Computer Age: Applying Trademark Principles to the "Look and Feel" of Software*, 77 J. PAT. & TRADEMARK OFF. SOC'Y 451 (1995); Rhoda L. Rudnick, *Window Dressing: Trademark Protection for Computer Screen Displays and Software*, 80 TRADEMARK REP. 382 (1990) (hereinafter Rudnick); Matthew E. Watson, *Trade Dress Theory and the Software Graphic User Interface: Sorting Through the Goopy Mess*, 34 JURIMETRICS J. 251 (1994); Gregory J. Wrenn, Comment, *Federal Intellectual Property Protection for Computer Software Audiovisual Look and Feel: The Lanham, Copyright, and Patent Acts*, 4 HIGH TECH. L.J. 279 (1989) (hereinafter Wrenn); Steven Shortgen, Note, *"Dressing Up" Software Interface Protection: The Application of Two Pesos to "Look and Feel,"* 90 CORNELL L. REV. 172 (1994).

<sup>25</sup> Rudnick, *supra* note 24, at 398.

<sup>26</sup> The dispute surrounds the preclusion of trade dress protection for functional elements, and the level of functionality in software displays. See, e.g., Wrenn, *supra* note 24, at 288-91.

<sup>27</sup> GALLER, *supra* note 3, at 136.

<sup>28</sup> *Id.* at 133-37.

<sup>29</sup> *Id.* at 133-35.

copyright and patent law will eventually mature into a regime superior to any other one available,<sup>30</sup> and, therefore, the tandem should continue as the primary regulatory vehicle of software protection. Regrettably, this chapter does not explore Galler's conclusion, nor does it sufficiently consider competing proposals of commentators suggesting alternative forms of software protection.<sup>31</sup>

To buttress his conclusion advising continued adherence to a regime requiring additional maturation and evolution, the book should have addressed essential public policy concerns. Principally, Galler must reconcile his view with leading commercial enterprise theories such as Max Weber's assertion that developing an effective commercial venture requires deterministic laws to encompass its activities.<sup>32</sup> Acceptance of Weber's notion implies that Galler's desire to remain with the existing immature regime potentially endangers an industry essential to the nation;<sup>33</sup> for this reason alone, Galler should detail his position. In the absence of such a discussion, the author's conclusion fails to persuade.

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<sup>30</sup> *Id.* at 133, 136.

<sup>31</sup> For an example of works that could have been used to further address the subject, see BRANSCOMB, *supra* note 2 at 154-58 (suggesting that software may warrant "its own system of legal protection"); Rochelle Cooper Dreyfuss, *Information Products: A Challenge to Intellectual Property Theory*, 20 N.Y.U. J. INT'L L. & POL. 897 (1988); Elmer Galbi, *Proposal for New Legislation to Protect Computer Programming* 17 BULL. COPYRIGHT SOC'Y 280 (1969); Irwin R. Gross, *A New Framework for Software Protection: Distinguishing Between Interactive and Non-Interactive Aspects of Computer Programs*, 20 RUTGERS COMPUTER & TECH. L.J. 107 (1994); Peter Menell, *Tailoring Legal Protection for Computer Software*, 39 STAN. L. REV. 2308 (1987); A. Samuel Oddi, *An Uneasier Case for Copyright Than for Patent Protection of Computer Programs*, 72 NEB. L. REV. 351 (1993); Samuelson, *Manifesto*, *supra* note 4; Richard H. Stern, *Solving the Algorithm Conundrum: After 1994 in the Federal Circuit Patent Law Needs a Radical Algorithmectomy*, 22 AIPLA Q.J. 167, 213-33 (1994) (hereinafter Stern). See generally Dennis Karjala, *Lessons from the Computer Software Protection Debate in Japan*, 1984 ARIZ. ST. L.J. 53; Roland Liesegang, *German Utility Models After the 1990 Reform Act*, 20 AIPLA Q.J. 1 (1992) (presenting aspects of the German short-term duration, registration regime for the protection of invention); Glynn S. Lunney, Jr., Comment, *Copyright Protection for ASIC Configurations: PLDs, Custom and Semicustom Chips*, 42 STAN. L. REV. 163 (1989) (suggesting that hardware and software should have similar protection, thereby allowing the marketplace to better balance the level of investment in each).

<sup>32</sup> See MAX WEBER, *ECONOMY AND SOCIETY* 883 (Guenther Roth & Claus Wittich eds., 1968).

<sup>33</sup> See Kenneth I. Catalanotto, *Computer Software: Federal Policy for a Critical Technology*, IEEE TECH. & SOC'Y MAG., Winter 1993, at 7, 8 ("Software is one of America's most lucrative industries, [and] a key supporting technology within several other industries that have both economic and military importance to the U.S."). See also *Europe's Software Debacle*, THE ECONOMIST, Nov. 12, 1994, at 77 (stating that European software companies are hindered by the absence of legal uniformity).

With regard to Galler's secondary conclusion, rejecting the creation of a regime designed specifically for software protection (the *sui generis* solution), the book's analysis disappoints. The author proffers no explanation of his rationale for rejecting promulgation of an entirely new legal regime addressing software, apart from the personal opinion that it "does not appear to be useful."<sup>34</sup> In addition to the ample scholarship on the subject,<sup>35</sup> one ready source for Galler's analysis rests in the Semiconductor Chip Protection Act of 1984.<sup>36</sup> This Act is a recent example of a congressionally-crafted protection regime for a single technology.<sup>37</sup> The book overlooks the opportunity to attempt to analogize a software-specific protection regime with recent condemnations of the semiconductor-specific legislation as obsolete and valueless.<sup>38</sup>

Some commentators may dismiss as moot the criticism of the absent detailed analysis of a *sui generis* solution. Such commentators would assert that, given the unlikelihood that Congress will undertake the formidable task of establishing an appropriate protection regime for computer software,<sup>39</sup> the

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<sup>34</sup> GALLER, *supra* note 3, at 136.

<sup>35</sup> See *supra* note 31.

<sup>36</sup> Pub. L. No. 98-120 (codified at 17 U.S.C. §§ 901-14); See also H.R. REP. No. 98-181, 1984 U.S.C.C.A.N. 5750.

Galler would not be the first, however, to explore the *sui generis* protection of computer software in light of the *sui generis* protection for semiconductor masks. See, e.g., Pamela Samuelson, *Creating a New Kind of Intellectual Property: Applying the Lessons of the Chip Law to Programs*, 70 MINN. L. REV. 471 (1985).

<sup>37</sup> An example of another *sui generis* solution addressing plants, see The Plant Protection Act of 1930, 46 Stat. 376, amended by 68 Stat. 1190 (codified as amended at 35 U.S.C. §§ 161-64; The Plant Variety Protection Act of 1970, Pub. L. No. 91-577, 82 Stat. 1542 (codified as amended at 7 U.S.C. § 2321 *et seq.*), amended by Plant Variety Protection Act Amendments of 1994, Pub. L. No. 103-349, 103 Stat. 3143; See also PETER D. ROSENBERG, PATENT LAW FUNDAMENTALS § 601 (2d ed. 1994).

<sup>38</sup> See, e.g., Steven P. Kasch, *The Semiconductor Chip Protection Act: Past, Present, and Future*, 7 HIGH TECH. L.J. 71 (1992); John G. Rauch, *The Realities of Our Times: The Semiconductor Chip Protection Act of 1984 and the Evolution of the Semiconductor Industry*, 75 J. PAT. & TRADEMARK OFF. SOC'Y 93 (1993).

<sup>39</sup> See, e.g., DAVID SCHOENBROD, POWER WITHOUT RESPONSIBILITY: HOW CONGRESS ABUSES THE PEOPLE THROUGH DELEGATION 102-05 (1994) (finding that Congress fails to undertake the difficult and complex decisions necessary to guide society, rather Congress abdicates its authority by delegating the work to executive agencies and the Judicial Branch). *cf.* Stephen Breyer, *Reforming Regulation*, 59 TUL. L. REV. 4, 4 (1984) ("At the outset, let me limit my skepticism to regulatory reform of a certain kind: reform that radically changes the substantive nature of a regulatory program by embodying its changes in a new statute.").

The goal of establishing the optimally appropriate level of protection remains impossible given the myriad of unquantifiable factors in the equation. For Congress, the goal of finding an appropriate level of protection resides in addressing: "the dilemma . . . that without a legal monopoly not enough information will be produced but with the monopoly too little information will be used." ROBERT COOTER & THOMAS ULEN, LAW AND ECONOMICS 135 (1988). See also



book's practical nature does not require it to engage in the academic pursuit of addressing improbable congressional action. This position, however, does not obviate the need to justify a position with fact and reason, not simply conjecture. In the aggregate, it would have been preferable to avoid the *sui generis* discussion entirely, rather than having Galler present his perspective without an accompanying analysis.

### C. THE BOOK AS A WHOLE

As a whole, *Software and Intellectual Property Protection* provides a conventional teaching of the application of copyright and patent law fundamentals to software. Each chapter succinctly chronicles the history of the law it covers. Throughout the text, Galler freely offers his opinion of the current jurisprudence, but he carefully distinguishes the idyllic state of law from the actual state of the law. This differentiation provides greater weight to his criticisms. Additionally, Galler avoids making any significant legal misstatements, a potential pitfall for all scholars, especially those without formal legal training.<sup>40</sup>

Two aspects of Galler's work deserve special recognition: the thirty-two case briefs, and the computer science primer in Appendix A. Galler provides the reader with a brief of each major case cited. Although visually distinct from their accompanying textual discussion, Galler appropriately places the thirty-two briefs within the surrounding analysis. The briefs mirror the diligent first-year law student's reading notes; they include the parties, the citation, the court of jurisdiction, the decision date, a relevant factual summary, and the holding. These briefs, averaging only two-thirds of a page in length, are an outstanding budgeting of the book's limited space and should become a treasured resource for practitioners requiring a quick summary of key cases in the field. For this task, the briefs' omission of the procedural and secondary substantive issues make them preferable to the synopses and headnotes found in case reporters.

As for the 36-page teaching of computer science basics in Appendix A,<sup>41</sup> it comes as no surprise that Galler demonstrates a mastery of the field. The examples and illustrations allow readers to glean sufficient knowledge to

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THOMAS BABINGTON MACAULAY, PROSE AND POETRY 731, 733-37 (G. Young ed. 1967); William Landes & Richard Posner, *An Economic Analysis of Copyright Law*, 18 J. L. STUD. 325 (1989).

<sup>40</sup> See, e.g., John E. Nowak, *Attacking the Judicial Protection of Minority Rights: The History Ploy*, 84 MICH. L. REV. 608, 621 (1986) (book review) (commenting on the legal scholarship of a professor of history, the reviewer opined that "Professor Morgan [the book's author] might have saved himself from making some embarrassing statements about Supreme Court decisions if he had received a lawyer's advice . . .").

<sup>41</sup> GALLER, *supra* note 3, at 141-77.

understand many of the inherent complexities software brings to intellectual property law. An asset for beginning and intermediate students of the technology, Appendix A minimizes the need for readers to consult a separate computer science text while using this book.

For *Software and Intellectual Property Protection* to reach its full potential as a valuable resource, however, three modifications should be implemented in future additions: (1) provide a more thorough introduction to the basic attributes of the copyright and patent systems; (2) update and expand the patent law discussion; and (3) improve the citation to authority.

Within the book's early chapters, the copyright and patent systems should provide a broader introduction to the remaining discussions and comport with the book's goal of presenting accessible teachings.<sup>42</sup> Because the practice of patent law requires specific scientific or technical background (as well as passage of an examination to practice before the Patent and Trademark Office),<sup>43</sup> the intersection of copyright and patent practitioners is smaller than their union. Accordingly, a discussion of the regimes' basic attributes would have been appropriate for practitioners less versed in either area, as well as the intellectual property law novitiate.

The introduction should discuss, at a minimum, each system's legal infrastructure, the notion of copyright registration versus patent examination, and the duration of each form of protection. Galler could have developed many of the systems' other characteristics in later chapters, but lacking the prefatory teaching, the book risks losing much of its intended legal audience. Finally, a basic table or chart illustrating the similarities and distinctions of the two systems would prove valuable.<sup>44</sup>

The second recommended modification is expanding the treatment of patent law. Although the details of the patent law discussion are presented below, at this stage it is sufficient to suggest that, given the complexity and diversity of the issues addressed, a less austere treatment of patent law fundamentals would improve future editions. Although the author does present the existing 15-page discussion of the subject with minimal padding, its coverage ultimately proves too thin. A more systematic approach, similar to the multi-chapter treatment of copyright law, would enable the reader to grasp the dimensions of this jurisprudence. Ultimately, the goal of these added chapters should be to probe the substantive contours of patent law that affect software.

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<sup>42</sup> See *id.* at X.

<sup>43</sup> 37 C.F.R. § 10.5-10.8. See also Michelle J. Burke & Thomas G. Field, Jr., *Promulgating Requirements for Admission to Prosecute Patent Applications*, 77 J. PAT. & TRADEMARK OFF. SOC'Y 369 (1995).

<sup>44</sup> For an example of this type of chart, see MARSHALL A. LEAFFER, *UNDERSTANDING COPYRIGHT LAW* 26 (2d ed. 1995) (hereinafter LEAFFER); 1 MICHAEL D. SCOTT, *SCOTT ON COMPUTER LAW*, table 2.1 (2d ed. Supp. 1993).

The third recommended modification is improving the citations to authority. From a substantive perspective, the cited authority should be expanded to clarify secondary ideas and to include sources of additional research for interested readers.<sup>45</sup> When discussing the basic concept of patenting software, for example, the book could have listed writings highlighting the rift in the legal community on this subject.<sup>46</sup> Although legal scholarship represents secondary authority, it performs an important role as a conduit for enhancing thought, insight, and explanation.<sup>47</sup>

The form of Galler's citation to authority exacerbates the substance problem. First, the book should not mix in-line text citations and notes.<sup>48</sup> Second, the book's publisher chose to employ endnotes instead of footnotes, even though most legal scholarship uses footnotes. Footnotes eliminate the unnecessary shuffling of pages between text and notes that endnotes introduce.<sup>49</sup> Although the issues of form do not affect the substantive value of the citations, they distract sufficiently enough to require correction in future editions.

Suggested modifications aside, one general concern on the decision to publish a work addressing this tenaciously dynamic area of law in bound book form. More appropriate forms include loose leaf volumes or books with pocket parts or bound supplements. Although Galler's teachings regarding the substantive law are thorough, the text has already fallen victim to what President Lincoln might have referred to as the law seeking to "follow, and

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<sup>45</sup> Some scholars, of course, would find such modifications repugnant. See, e.g., Abner J. Mikva, *Goodbye to Footnotes*, 56 U. COLO. L. REV. 647, 647 (1985) (terming footnotes, "wherever they may be found," an "abomination."); Fred Rodell, *Goodbye to Law Reviews*, 23 VA. L. REV. 38, 41 (1936) ("[T]he footnote foible breeds nothing but sloppy thinking, clumsy writing, and bad eyes.").

<sup>46</sup> See, e.g., Pamela Samuelson, *Survey on the Patent/Copyright Interface for Computer Programs*, 17 AIPLA Q.J. 256, 259-61 (1989) (discussing a survey of 26 attorneys and highlighting the division of opinion among attorneys regarding patent protection for software. Although Samuelson concedes that the survey sample is small, she believes that the results "are at least one useful data point (and, at present, probably the best data point we have)."). *Id.* at 259. John P. Sumnar & Steven W. Lundberg, *Software Patents: Are They Here to Stay?*, THE COMPUTER LAW., Oct. 1991, at 8 (presenting the opinions of one group of attorneys strongly favoring patent protection for software).

<sup>47</sup> See generally *Symposium on Legal Education*, 91 MICH. L. REV., No. 8 (1993); *Symposium on Legal Scholarship: Its Nature and Purposes*, 90 YALE L.J., No. 5 (1981). But see Harry T. Edwards, *The Growing Disjunction Between Legal Education and the Legal Profession*, 91 MICH. L. REV. 34 (1992) (commenting that legal scholarship provides minimal value to practitioners, judges, or legislators).

<sup>48</sup> See, e.g., GALLER, *supra* note 3, at 2-3, 12, 30-31, 38, 49, 105, 107.

<sup>49</sup> This book review is not the first to criticize the use of endnotes. See, e.g., Mark Tushnet, *The Culture(s) of Free Expression*, 76 CORNELL L. REV. 1106, 1106 n.1 (1991) (book review) ("Endnotes deter readers from reading them. . . .").

conform to, the progress of society."<sup>50</sup> For example, since this book's recent publication, the Patent Office has issued new guidelines for the examination of software related inventions,<sup>51</sup> the United States Court of Appeals for the Federal Circuit has ruled on many significant software patent cases,<sup>52</sup> and the Supreme Court has created un-certainty regarding user interface protection of software with respect to copyright.<sup>53</sup> Of course, a timeliness concern exists with nearly every published work, but, as evident from the quantum of activity since this book's publication, it is especially pronounced in this area of law.<sup>54</sup>

### III. CHAPTER SPECIFIC ANALYSIS

The book's teaching chapters are comprised of two different discussions: chapters 1 through 2, and 4 through 10 discuss copyright law and chapter 3 examines patent law. Each chapter of the copyright discussion represents a

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<sup>50</sup>Abraham Lincoln, Notes of Argument in Law Case (June 15, 1858), in 2 THE COLLECTED WORKS OF ABRAHAM LINCOLN 459 (Roy P. Basler ed., 1953). Although he did not issue this statement in the context of intellectual property law, Lincoln keenly appreciated the importance of copyrights and patents; he remains the only President to have earned a patent on an invention (Patent No. 6,469, issued on May 22, 1849). TRAVIS BROWN, HISTORICAL FIRST PATENTS: THE FIRST UNITED STATES PATENT FOR MANY EVERYDAY THINGS 148-49 (1994) "Although Lincoln's invention never enjoyed any commercial success, his ability to appreciate and evaluate new inventions did much to determine the future of this country". *Id.* at 149.

<sup>51</sup>U.S. PAT. & TRADEMARK OFF., EXAMINATION GUIDELINES FOR COMPUTER-RELATED INVENTIONS, 61 Fed. Reg. 7478 (1996).

<sup>52</sup>One commentator applied the moniker "the Year of the Algorithm" to 1994 as a result of the abundance of cases addressing such issues in patent law. Stern, *supra* note 31, at 169. The cases of significance include: In re *Schrader*, 22 F.3d 290 (Fed. Cir. 1994) (holding that there is lack of statutory subject matter for patent claims in which a mathematical algorithm is implicit); In re *Warmerdam*, 33 F.3d 1354 (Fed. Cir. 1994) (holding that the "bubble hierarchies" creation represents nothing more than a manipulation of ideas, falling outside the domain of statutory subject matter); In re *Lowry*, 32 F.3d 1579 (Fed. Cir. 1994) (holding that the system of computer memory storage is not analogous to printed matter), and; In re *Trovato*, 42 F.3d 1376 (Fed. Cir. 1994) (holding that the use of data structure to find the best route between two locations represents only a mathematical calculation and is therefore nonstatutory), *vacated per curiam*, 60 F.3d 807 (Fed. Cir. 1995). For further discussions about these cases, see Judson D. Cary, *Not So Fast There Mr. Alappat: The Federal Circuit Retreats from the Alappat Decision*, NEW MATTER, Winter 1994, at 28-31; James R. Goodman et al., *Toward a Fact-Based Standard for Determining Whether Programmed Computers are Patentable Subject Matter: The Scientific Wisdom of Alappat and Ignorance of Trovato*, 77 J. PAT. & TRADEMARK OFF. SOC'Y 353, 354-65 (1995); Robert C. Laurenson, *Computer Software "Article of Manufacture" Patents*, 21 COMP. L. REP. 965 (1995); Stern, *supra* note 31, at 187-94.

For a description of the role of the Federal Circuit, see *supra* note 13.

<sup>53</sup> See *infra* notes 79-83 and accompanying text.

<sup>54</sup> Readers requiring a timely source of patent and copyright information should consult the PATENT, TRADEMARK & COPYRIGHT JOURNAL which The Bureau of National Affairs, Inc. publishes weekly.

self-contained lesson, and, appropriately this review will examine each chapter as such.<sup>55</sup> This review also examines the patent law chapter in its own light.

#### A. COPYRIGHT LAW CHAPTERS ANALYSIS

In Chapter 1,<sup>56</sup> *Legal Issues*, Galler begins the instruction by identifying six applications of traditional copyright jurisprudence to software which he asserts yield unpredictable or undesirable results. Although not mentioned in this chapter, these consequences result primarily from the application of copyright law, a law initially designed to protect literary and artistic works, to a new technology.<sup>57</sup> To the extent that the author employs this brief chapter to promote continued reading by arousing the reader's curiosity, concern, or consternation, he aptly succeeds.

Chapters 2 and 4 each present a threshold issue of copyright law: the idea-expression dichotomy and fixation. Chapter 2,<sup>58</sup> *Idea or Expression?*, addresses the idea-expression dichotomy, a concept that demands a copyright exists only on the expression of an idea, not the idea itself.<sup>59</sup> Galler accurately

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<sup>55</sup> In addition, found after the textual discussions of chapters 1 through 11 are four appendices and a recommended reading list. Appendix A explores basic computer science concepts, a valuable set of teachings for non-technical readers. GALLER, *supra* note 3, at 141-77. Appendix B reproduces a patent used for illustration purposes in Chapter 3. *Id.* at 179-90. Appendix C reprints the *In re Alappat* concurrence. *Id.* at 191-94. Appendix D lists the citations to the thirty-two case briefs that appear throughout the chapters. *Id.* at 195-97. The final entry of the book, not including the able index, presents a recommended reading list of ten additional sources. *Id.* at 199. The list demonstrates consideration of readers possessing an interest in the subject beyond the provided teachings, but should be expanded to provide a more panoramic range of scholarship.

<sup>56</sup> *Id.* at 7-9.

<sup>57</sup> See Dennis S. Karjala, *Copyright, Computer Software, and the New Protectionism*, 28 JURIMETRICS J. 33, 41-43 (1987). See also Samuelson, *Manifesto*, *supra* note 4, at 2350 ("Copyright law is mismatched to software, in part, because it does not focus on the principal source of value in a program (its useful behavior)."). It is ironic that this new technology possess such a challenge to copyright law. "Copyright was technology's child from the start [because] [t]here was no need for copyright before the printing press." PAUL GOLDSTEIN, *COPYRIGHT'S HIGHWAY* 27 (1994).

<sup>58</sup> GALLER, *supra* note 3, at 11-28.

<sup>59</sup> The general teaching of the idea-expression dichotomy is found in section 102(b) of the Copyright Act, which states: "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. . . ." 17 U.S.C. § 102(b) (1994). The generally accepted basis of the codification of the dichotomy is an amalgamation of two historic copyright cases: *Baker v. Selden*, 101 U.S. (11 Otto) 99 (1879) and *Mazer v. Stein*, 347 U.S. 201 (1954). MELVILLE B. NIMMER & DAVID NIMMER, 1 NIMMER ON COPYRIGHT § 2.18[c], n.30 (1994).

For a detailed discussion of the idea-expression dichotomy, see Leslie A. Kurtz, *Speaking to the Ghost: Idea and Expression in Copyright*, 47 U. MIAMI L. REV. 1221 (1993). For a

describes this construct as “[o]ne of the most fundamental issues in copyright law.”<sup>60</sup> To circumscribe the bounds of the idea-expression dichotomy and the concomitant merger doctrine<sup>61</sup> with respect to software, Chapter 2 details a wealth of thoughtfully selected cases. As one copyright law scholar comments: “The idea-expression dichotomy . . . is easy to state but is more difficult and elusive to apply in practice . . . [and, therefore,] is best examined in a specific context.”<sup>62</sup> Accordingly, Galler’s teachings in this chapter are valuable in light of the confusion over the application of the maxim to software.

Chapter 4,<sup>63</sup> *The Tangible Medium*, considers the threshold issue of fixation. The fixation requirement dictates that the law extend copyright protection only to permanent or stable works, not transitory works such as oral statements or unwritten and unrecorded music.<sup>64</sup> This chapter focuses on three seminal software cases, each decided between 1982 and 1984: *Williams Elecs., Inc. v. Artic Int’l, Inc.*,<sup>65</sup> which found object code meets the fixation requirement; *Apple Computer, Inc. v. Franklin Computer Corp.*,<sup>66</sup> which found that source code meets the fixation requirement; *Apple Computer, Inc. v. Formula Int’l, Inc.*,<sup>67</sup> which found that software fixed in read only memory (ROM) does not constitute an idea, procedure, system, or method of opera-

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discussion of the idea-expression dichotomy applied specifically to software, see John H. Pilarski, *User Interfaces and the Idea-Expression Dichotomy, or, Are the Copyright Laws Friendly?*, 15 AIPLA Q.J. 325 (1987); Peter G. Spivack, Comment, *Does Form Follow Function? The Idea/Expression Dichotomy in Copyright Protection of Computer Software*, 35 UCLA L. REV. 723 (1988).

<sup>60</sup> GALLER, *supra* note 3, at 11.

<sup>61</sup> “The merger doctrine represents a variation of the idea/expression dichotomy. . . . [W]hen the idea and the expression of the idea coincide, the expression will not be protected. . . . [A]n expression will be found to be merged into the idea when ‘there are no or few other ways of expressing a particular idea.’” *Educational Testing Services v. Katzman*, 793 F.2d 533 (3d Cir. 1986) (quoting *Apple Computer, Inc. v. Franklin Computer Corp.*, 787 F.2d 1240, 1253, (8th Cir. 1983), *cert. dismissed*, 464 U.S. 1033 (1984)). The primary public policy rationale behind the merger doctrine is preventing monopolization of an idea by copyrighting one of the few methods of expressing it. *Toro Company v. R&R Products Co.*, 787 F.2d 1208, 1212 (8th Cir. 1986).

<sup>62</sup> LEAFFER, *supra* note 44, at 58.

<sup>63</sup> GALLER, *supra* note 3, at 47-53.

<sup>64</sup> The fixation requirement, rooted in the constitutional grant for “writings” exclusively, has been codified by Congress in the Copyright Act of 1976, and states that “[a] work is ‘fixed’ in a tangible medium of expression when its embodiment in a copy . . . is sufficiently permanent or stable to permit it to be perceived, reproduced, or otherwise communicated for a period of more than transitory duration.” 17 U.S.C. § 101 (1994).

<sup>65</sup> 685 F.2d 870 (3d Cir. 1982).

<sup>66</sup> 714 F.2d 1240 (3d Cir. 1983).

<sup>67</sup> 725 F.2d 521 (9th Cir. 1984).

tion, and therefore remains eligible to receive copyright protection. As a result of tracing the history of software and fixation, this chapter teaches a legal point uncontested since the early 1980's: software meets the threshold fixation requirement.

Chapter 5,<sup>68</sup> *Validity and Scope*, addresses three potential generic defenses to rebut a charge of copyright infringement.<sup>69</sup> The three defenses are whether the work in question: (1) bears the appropriate copyright notification markings; (2) falls outside the scope of copyright law; and (3) lacks originality. Any concerns pertaining to the appropriateness of teaching defenses prior to teaching infringement are misplaced, as the book's organization follows the classic four step intellectual property law analysis: (1) Does an enforceable intellectual property right exist? (2) Who owns the intellectual property right? (3) Has infringement occurred? and (4) What are the available remedies?<sup>70</sup> Within this methodology, chapter 5 speaks to the step 1 analysis, as do chapters 2 and 4; specifically, whether there exists an enforceable intellectual property right.

Chapters 6, 7, and 8, in various incarnations, present copyright infringement. Chapter 6,<sup>71</sup> *Infringement*, begins with a lay dictionary definition of infringement, an inappropriate source given that copyright law supplies a statutory definition.<sup>72</sup> This peccadillo aside, chapter 6 provides a rounded

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<sup>68</sup> GALLER, *supra* note 3, at 55-66.

<sup>69</sup> This chapter understates the frequency at which an alleged infringing party will raise the validity issue to "just clear cases of infringement." *Id.* at 57. Other observers, however, find that most defendants routinely proffer such an argument, not simply the obvious infringers. *See, e.g., Burlington Indus., Inc. v. Dayco Corp.*, 849 F.2d 1418, 1422 (Fed. Cir. 1988) ("[T]he habit of charging inequitable conduct [,which if found to exist would render the obtained patent unenforceable,] in almost every major patent case has become an absolute plague.").

<sup>70</sup> The book focuses strictly on the areas of copyright and patent law that are unique in application to software. GALLER, *supra* note 3, at X, 2. Because issues of ownership and available remedies are not unique in application to software, the text does not present them. The book's domain justifies such omissions.

<sup>71</sup> *Id.* at 67-76.

<sup>72</sup> Violating any of a copyright holder's exclusive rights constitutes copyright infringement. 17 U.S.C. § 501(a) (1994). Subject to §§ 107-120 of title 17, a copyright owner has "the exclusive rights to do and to authorize any of the following:

- (1) to reproduce the copyrighted work in copies or phonorecords;
- (2) to prepare derivative works based upon the copyrighted work;
- (3) to distribute copies or phonorecords of the copyrighted work to the public by sale or other transfer of ownership, or by rental, lease, or lending;
- (4) in the case of literary, musical, dramatic, and choreographic works, pantomimes, and motion pictures and other audiovisual works, to perform the copyrighted work publicly; and
- (5) in the case of literary, musical, dramatic, and choreographic works, pantomimes, and . . . a motion picture or other audiovisual work, to display the copyrighted work publicly."

survey of copyright infringement fundamentals. Chapter 7,<sup>73</sup> *Substantial Similarity*, highlights one of the tests of copyright infringement as applied to software.<sup>74</sup> Here, Galler adroitly blends instruction with concrete examples in order to teach the essentials of an inquiry which the author rightfully states may rapidly become "complicated."<sup>75</sup>

Chapter 8,<sup>76</sup> *Look and Feel*, dissects the protection, and subsequent infringement, of non-literal elements of software—a model known as "look and feel." The look and feel concept presumes that software is akin to a play, movie, or novel, in that there exists protectable themes and structures.<sup>77</sup> This chapter devotes most of its breath to canvassing *Lotus Development Corp. v. Paperback Software Int'l.*, a case which planted the seeds for the Second Circuit's interpretation of look and feel.<sup>78</sup> Although Galler participated in this trial as an expert witness, cynics should not dismiss the abundant teaching as indulgent self-promotion. In counterdistinction, *Lotus v. Paperback* illustrates the Second Circuit's three-prong test for assessing which non-literal aspects of a software item should be afforded copyright protection.<sup>79</sup> This chapter, which includes diagrams, furnishes readers with an understanding of the test's development and application. Currently, however, a split exists among the circuit courts regarding the propriety of the three-prong test. In 1995, the United States Court of Appeals for the First Circuit, in *Lotus Development Corp. v. Borland Int'l Inc.*,<sup>80</sup> rejected the Second Circuit's test.

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17 U.S.C. § 106 (1994).

<sup>73</sup> GALLER, *supra* note 3, at 77-89.

<sup>74</sup> For a detailed discussion of the methods available to prove substantial similarity, see Donald F. McGahn II, *Copyright Infringement of Protected Computer Software: An Analytical Method to Determine Substantial Similarity*, 21 RUTGERS COMPUTER & TECH. L.J. 88, 113-31 (1995).

<sup>75</sup> GALLER, *supra* note 3, at 77.

<sup>76</sup> *Id.* at 91-104.

<sup>77</sup> See Peter S. Menell, *An Analysis of the Scope of Copyright Protection for Application Programs*, 41 STAN. L. REV. 1045 (1989). This form of copyright protection has been termed the "second generation" of software copyright cases. *Id.* at 1048.

<sup>78</sup> 740 F. Supp. 37 (D. Mass. 1990).

<sup>79</sup> *Id.* 59-62. In essence, the three-prong test requires: (1) abstraction; (2) filtration; and (3) comparison. *Id.* This three-prong test was formally adopted by the Second Circuit in a later-amended opinion which left the test itself unchanged. *Computer Assoc. Int'l, Inc. v. Altai, Inc.*, Nos. 762, 91-7893, 91-79351992, WL 139364, at \*12-18 (2d Cir. June, 22, 1992), *withdrawn and superseded on reh'g by* 982 F.2d 693, 706-711 (2d Cir. 1992). In a subsequent trial following *Paperback*, with the same plaintiff, the same court, and same judge as *Paperback*, and prior to the release of the amended opinion in *Altai*, Judge Keeton attempted to adopt this three-prong test in the Massachusetts' district court but was reversed on appeal. See *Lotus Dev. Corp. v. Borland Int'l, Inc.*, 799 F. Supp. 203, 211-212, 216-219 (D. Mass. 1992), *rev'd*, 49 F.3d 807 (1st Cir. 1995).

<sup>80</sup> 49 F.3d 807 (1st Cir. 1995). Academics also have quibbled with the Second Circuit's



The court found the disputed user-interface to be highly utilitarian and, consequently, outside the scope of copyright law.<sup>81</sup> The First Circuit's appellate decision apparently postdates the book's editorial deadline, thus explaining the absent analysis of the ideological divide.<sup>82</sup> The Supreme Court's recent decision<sup>83</sup> fell in a 4-4 split, offering little guidance on the issue.<sup>84</sup>

Chapter 9,<sup>85</sup> *Reverse Engineering*, addresses the activity of "starting with the known product and working backwards to divine the process which aided in its development or manufacture."<sup>86</sup> Reverse engineering represents an especially weighty issue for competing companies that seek to conform with specialized and secretive interface specifications, a concept known as interoperability.<sup>87</sup> Chapter 9 remains an acceptable, albeit laconic, discussion of the existing law in this congested intersection of software and intellectual property protection.

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interpretation of copyright law. See, e.g., Pamela Samuelson, *Computer Programs, User Interfaces, and Section 102(b) of the Copyright Act of 1976: A Critique of Lotus v. Paperback*, 6 HIGH TECH. L.J. 209 (1991).

<sup>81</sup> See *supra* note 12. The court also acknowledged that its holding directly conflicts with the recent Tenth Circuit decision in *Autoskill, Inc. v. National Educ. Support Sys., Inc.*, 994 F.2d 1476 (10th Cir. 1993), *cert. denied*, 114 S. Ct. 307 (1993) by essentially declaring the holding dicta. *Lotus Dev. Corp. v. Borland Int'l, Inc.*, 49 F.3d 807, 818-819 (1st Cir. 1995).

<sup>82</sup> For commentary on the First Circuit's decision, see Jonathan Band, *Lotus v. Borland Through the Lens of Interoperability*, THE COMPUTER LAW., June 1995, at 1; Anthony L. Clapes & Jennifer M. Daniels, *Lotus v. Borland: Nightmare on Milk Street?*, THE COMPUTER LAW., May 1995, at 16.

<sup>83</sup> *Lotus Dev. Corp. v. Borland Int'l, Inc.*, 116 S.Ct. 804 (1996) (per curiam) ("The judgment of the United States Court of Appeals for the First Circuit is affirmed by an equally divided Court. JUSTICE STEVENS took no part in the consideration or decision of this case.") This was the entire opinion of the Court.

<sup>84</sup> A 4-4 decision applies only to the decided case, and has no precedential value. See JOHN E. NOWAK & RONALD D. ROTUNDA, CONSTITUTIONAL LAW 30 (5th ed. 1995) (citing *Neil v. Biggers*, 409 U.S. 188, 192 (1972); *Etting v. Bank of the United States*, 24 U.S. (11 Wheat.) 59, 78 (1826); *The Antelope*, 23 U.S. (10 Wheat.) 66, 126 (1825); *Durant v. Essex Co.*, 74 U.S. (7 Wall.) 107, 112 (1868)).

<sup>85</sup> GALLER, *supra* note 3, at 105-23.

<sup>86</sup> *Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470, 476 (1974) (providing a definition of reverse engineering).

<sup>87</sup> For a recent discussion about the interoperability debate, see JONATHAN BAND & MASANOBU KATO, INTERFACES ON TRIAL (1995) (hereinafter BAND & KATO); John T. Soma et al., *Software Interoperability and Reverse Engineering*, 20 RUTGERS COMPUTER & TECH. L.J. 189 (1994); Glynn S. Lunney, Jr., Comment, *Atari Games v. Nintendo: Does a Closed System Violate the Antitrust Laws?*, 5 HIGH TECH L.J. 29 (1990). For purposes of comparison, see two recent articles exploring the international experience: Sunny Handa, *Reverse Engineering Computer Programs Under Canadian Copyright Law*, 40 MCGILL L.J. 621. (1995); Charles R. McManis, *Intellectual Property Protection and Reverse Engineering in the United States and the European Community*, 8 HIGH TECH L.J. 25 (1993).

Chapter 10,<sup>88</sup> *The Clean Room Approach*, offers one potential method of reverse engineering which Galler asserts should not vest infringement liability. This chapter suggests a procedure for undertaking reverse engineering by isolating specific members of the development team from either examining the competitor's product or working on the company's own development effort. Galler ends his presentation with high expectations for the concept: "While the clean room concept has not been tested in court, I expect it to be an effective device in the computer field."<sup>89</sup> Another set of authors presenting the same clean room approach, however, warn that it may "fail to shelter" the group engaged in the activity because "the reverse engineering necessary to derive the interface specification may involve copying," and that such copying, in specific circumstances, could infringe the "competitor's copyright before any information even reached the clean room."<sup>90</sup> Further, parties recommending or implementing the clean room approach should recall that its creators fashioned it to address copyright concerns, and the approach would fail to immunize against patent infringement liability. This distinction, which the book does not clearly articulate, rests on the premium that copyright law places on originality,<sup>91</sup> and patent law's highly distinct importance of originality, where even unintentional making, using, or selling, of another's patented invention provides a *prima facie* case for patent infringement.<sup>92</sup>

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<sup>88</sup> GALLER, *supra* note 3, at 125-31.

<sup>89</sup> *Id.* at 130.

<sup>90</sup> BAND & KATOH, *supra* note 87, at 69.

<sup>91</sup> See 17 U.S.C. § 102(a), (1994). Originality is comprised of two elements: (1) independent creation; and (2) "some minimal degree of creativity." Feist Publications, Inc. v. Rural Telephone Service, 499 U.S. 340, 345 (1992) (citation omitted). Independent creation "means little more than a prohibition on actual copying." Hoague-Sprague Corp. v. Frank C. Meyer, Inc., 31 F.2d 538, 586 (D.C.N.Y. 1929). For additional treatment of the originality requirement, see DONALD S. CHISUM & MICHAEL A. JACOBS, UNDERSTANDING INTELLECTUAL PROPERTY LAW § 4C[5] (1992); 1 MELVILLE B. NIMMER & DAVID NIMMER, NIMMER ON COPYRIGHT §§ 1.08[C], 2.01[A]-[B] (1994).

<sup>92</sup> Compare Sheldon v. Metro-Goldwyn Pictures Corp., 81 F.2d 49 (2d Cir. 1936), *aff'd*, 309 U.S. 390 (1940) (Hand, J.) (citations omitted) ("[A]nticipation as such cannot invalidate a copyright. . . . [I]f by some magic a man who had never known it were to compose anew Keats's Ode on a Grecian Urn, he would be an 'author,' and, if he copyrighted it, others might not copy that poem, though they might of course copy Keats's. . . .") with Van Kannell Resolving Door Co. v. Revolving Door & Fixture Co., 293 F. 261, 262 (S.D.N.Y. 1920) (Hand, J.) (citations omitted) ("[A patentee] may prevent any one from making, selling, or using a structure embodying the invention, but the monopoly goes no further than that. It restrains every one from the conduct so described. . . .").

## B. PATENT LAW CHAPTER ANALYSIS

Chapter 3,<sup>93</sup> *Software Patents*, contains the book's major patent law discussion. This chapter interrupts chapter 2's and 4's study of threshold copyright issues with a survey of patent law as applied to software—a counterintuitive location. The chapter begins with *Diamond v. Diehr*,<sup>94</sup> a pivotal 1981 Supreme Court decision that indicated software could qualify for patent protection.<sup>95</sup> The decision, however, was narrowly tailored such that the software must remain tied to a physical process.<sup>96</sup> Chapter 3 then addresses other consequential software cases, yet it overlooks possibly the most significant case decided in the fifteen years since *Diehr*, *In re Alappat*.<sup>97</sup>

In the 1994 decision of *Alappat*, the United States Court of Appeals for the Federal Circuit, sitting *en banc*, stated that software running a general purpose computer embodies a patentable subject matter regardless of ties to a physical process.<sup>98</sup> This broader notion of patentable subject matter results from the court finding that a general purpose computer in effect becomes a special purpose computer once it is programmed to perform a particular function pursuant to instructions from program software.<sup>99</sup> Regrettably,

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<sup>93</sup> GALLER, *supra* note 3, at 29-45.

<sup>94</sup> *Diamond v. Diehr*, 450 U.S. 175 (1981) (5-4 decision).

<sup>95</sup> The Supreme Court stated that "courts 'should not read into the patent laws limitations and conditions which a legislature has not expressed'. . . . Congress intended statutory subject matter to 'include anything under the sun that is man made.'" *Id.* at 182 (citations omitted).

<sup>96</sup> In *Diehr*, the software monitored the processing of molded synthetic rubber, which included the non-computer steps of: pre-heating molds, loading synthetic rubber into the molds, monitoring the mold temperature, and based on the software's algorithm opening the mold. *Diehr*, 450 U.S. at 180 n.5. See also James Allan Stuckey, Note, *Patent Law—Process Claim Involving Computer Program Meets Statutory Subject Matter Requirements*, 56 TUL. L. REV. 785 (1982).

<sup>97</sup> 33 F.3d 1526 (Fed. Cir. 1994) (en banc) (writing for six of the eleven presiding members of the court, Judge Rich expressed the plurality view. Two members dissented on the merits and three judges declined to address the merits, finding the court lacked proper jurisdiction to hear the case). See also James R. Goodman et al., *The Alappat Standard for Determining that Programmed Computers are Patentable Subject Matter*, 76 J. PAT. & TRADEMARK OFF. SOC'Y 771 (1994).

One could make a legitimate argument that the most important software/patent case since *Diehr* is *In re Beauregard*, 53 F.3d 1583 (1995).

<sup>98</sup> Patentable subject matter is the term given to the area of science and technology for which a patent is available. Patent law permits one to patent a process, machine, manufacture, or composition of matter. 35 U.S.C. § 101 (1994). Patents on additional items are available. See, e.g., *id.* §§ 161-64 (plant patent provisions).

<sup>99</sup> *Alappat*, 33 F.3d at 1545 (citations omitted).

chapter 3 overlooks *Alappat*, leaving the unsuspecting reader to discover this case eight chapters later in the conclusion, chapter 11.<sup>100</sup>

In addition to the presentation of software as a patentable subject matter, chapter 3 examines the legal requirements defining patentability and the jurisprudence addressing patent scope. Galler also provides a balanced discussion of the procedural challenges facing the patent system by software; specifically, he summarizes the current problems, potential solutions, and existing safeguards.<sup>101</sup>

#### IV. CONCLUSION

With few exceptions, *Software and Intellectual Property Protection* employs engaging prose and skillful exposition to provide a solid teaching of the basics of copyright and patent law and software. The book identifies a number of intriguing issues; however, readers requiring a detailed analysis of the intersection of copyright or patent and software should consult additional scholarship. Implementing the three modifications suggested, as well as inclusion of more timely discussions, would enhance future editions of the book. For now, the strength of the thirty-two briefs, peppered throughout the text, and the sagacious teaching of computer science in Appendix A, make this book a welcomed supplementary source.

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<sup>100</sup> See GALLER, *supra* note 3, at 135.

<sup>101</sup> Within this discussion, one statement made by the author worthy of correction is the unsupported point that the first group of computer science Patent Examiners, a group which once included the author of this book review, will be promoted to the level of Primary Examiner in two years, *id.* at 36, instead of the typical five to seven years. Computer science Patent Examiners follow the same promotion path as Examiners from other scientific disciplines.

