Software Look and Feel Protection in the 1990s

Jack Russo

Jamie Nafziger

Follow this and additional works at: https://repository.uchastings.edu/hastings_comm_ent_law_journal

Part of the Communications Law Commons, Entertainment, Arts, and Sports Law Commons, and the Intellectual Property Law Commons

Recommended Citation

Available at: https://repository.uchastings.edu/hastings_comm_ent_law_journal/vol15/iss3/2

This Article is brought to you for free and open access by the Law Journals at UC Hastings Scholarship Repository. It has been accepted for inclusion in Hastings Communications and Entertainment Law Journal by an authorized editor of UC Hastings Scholarship Repository. For more information, please contact wangangela@uchastings.edu.
Software "Look and Feel" Protection in the 1990s

by

JACK RUSSO

and

JAMIE NAFZIGER*

Table of Contents

I. Key Principles Summarized ................................ 573
II. Historical Development of "Look and Feel" Protection .... 574
   A. Statutory Development ................................ 574
   B. Initial Videogame-Based Case Law ........................ 574
   C. The Birth of "Look and Feel" ............................. 575
   D. The Position of the Copyright Office ................... 576
   E. Cases Favoring Broad Protection ......................... 578
      1. Whelan v. Jaslow ..................................... 578
      2. Broderbund v. Unison World ............................ 579
      3. Digital Communications v. Softklone .................. 580
      4. Lotus v. Paperback; Lotus v. Mosaic .................. 582
         a. Scale of Abstractions ................................ 583
         b. Essential Elements of the Idea ...................... 584
         c. Substantiality of Expression ....................... 584
   F. Cases Favoring Competitive Principles ................... 585
      1. Synercom Technology, Inc. v. University Computing .... 585
      3. Data East USA v. Epyx .................................. 589
   G. Cases Taking an Analytic (Screen-by-Screen) Approach .... 589
      1. Manufacturers Technologies v. CAMS .................. 590
      2. Apple v. Microsoft and Hewlett-Packard ............... 591
      3. Lotus v. Borland ....................................... 594
III. Supreme Court Developments .................................. 598
    A. Bonito Boats v. Thunder Craft Boats .................... 598
    B. Feist Publications v. Rural Telephone Service ......... 599
    C. Two Pesos v. Taco Cabana ................................ 602
IV. Conclusion ................................................... 603

* Jack Russo is the managing partner at the Palo Alto law firm of Russo & Hale. Russo & Hale specializes in computer software litigation. Jamie Nafziger is a legal assistant at Russo & Hale and plans to begin law school in 1994.
Introduction

In the 1990s, "look and feel" will remain an important concept for legal protection of computer software. Though functionality alone will never be legally protected (other than in appropriate cases by patent law), the organization and presentation of functionality as part of the overall "look and feel" of a computer program can be protected. "Look and feel" best describes the originality and creativity embodied in the overall external characteristics of a computer program.

Though criticized by the defense bar, "look and feel" describes what user interface designers and computer programmers routinely consider to be the most important contributions they make to their end-user-oriented software products. The term also properly describes what end-users perceive through the use of such software products. We submit that "look and feel" protection—that is, legal protection for the original, creative, external expression presented as the user interface of a computer program—will continue to expand in the 1990s. This expansion will be fueled by software designers and programmers who continue to develop, and by a market that continues to demand—original, creative, interactive user interfaces that are more graphical, robust, and expressive of their functional content.

The following article is divided into three sections. In Section I, we summarize the key legal principles that govern legal protection of the "look and feel" of computer software. In Section II, we describe the historical development of important "look and feel" cases. In Section III, we note the impact of three recent U.S. Supreme Court cases: *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*,\(^1\) *Feist Publications v. Rural Telephone Service*,\(^2\) and *Two Pesos, Inc. v. Taco Cabana, Inc.*\(^3\) All three cases can be expected to have major influence in the continuing development of the law in this area. Even as federal law continues to forbid non-patent protection for published functionality alone, we believe that the Copyright Act will continue to protect published functionality. Further, for inherently distinctive displays, the Lanham Act will begin to protect the originality and creativity contained in the overall "look and feel" of a computer program, including the organization and presentation of user-visible collections of functions expressed by the software author.

---

I

Key Principles Summarized

From the cases described below, the following principles can be readily ascertained and will guide the discussion that follows:

1. Competitive principles require that ideas, not patented under federal law and not maintained as a trade secret under state law, may not be protected and cannot be protected by copyright or trademark law.

2. What is an “idea” and what is an “expression” in particular computer programs will continue to be determined on a case-by-case basis using the “abstractions” test, the merger doctrine, and published industry standards under the copyright scenes a faire doctrine.

3. Original expression in the “look and feel” of computer software is protected by copyright.

4. After Feist, what is “original” is determined by the answer to two questions: First, has the work been independently developed—that is, not simply copied from another source? Second, even if independently developed, does the work have “some” greater than de minimis level of creativity—that is, in the words of Feist: is the work more than “garden variety,” not “so mechanical or routine as to require no creativity whatsoever,” not “devoid of even the slightest trace of creativity,” and not one “in which the creative spark is utterly lacking or so trivial as to be virtually nonexistent.”

5. Original expression in the “look and feel” of computer software, when inherently distinctive, can be additionally protected as trade dress under the Lanham Act. Indeed, Lanham Act protection may become the next major vehicle for legal protection of published computer software.

Under these principles, “look and feel” protection will extend, in our opinion, to all originality in a computer program’s user interface, including the original expression of the selection, organization, and presentation of user-visible functions, whether in menus, graphical displays,


5. See Feist, 111 S. Ct. at 1282.

6. Id. at 1294.


8. We agree that a single user-visible command should not be protected; however, we disagree with Douglas Derwin’s view that an entire collection of user-visible functions should never be protected. See Mr. Derwin’s article entitled It Is Time to Put “Look and Feel” Out to
or other visual or sensory metaphors. The general principles recited above, as well as the underlying federal statutes and the cases interpreting them, all support this treatment.

II

Historical Development of “Look and Feel” Protection

A. Statutory Development

The Copyright Revision Act was enacted in 1976 and became effective on October 1, 1978. The Act, together with its legislative history, confirmed copyright protection for computer software. However, the Act itself did not set forth any particulars for the protection of computer software. Instead, Congress designated the Commission on New Technological Uses (CONTU) to further investigate the area and to set forth recommendations for further legislation.

In 1978, CONTU issued a report recommending additional legislation that later became the Software Copyright Act of 1980. Curiously, the Software Copyright Act added little; it merely set forth some further definitions and confirmed that computer programs should be accorded copyright protection in both their source and object code form.

The Software Copyright Act of 1980 and the Copyright Revision Act of 1976 showed the general intent of Congress to protect computer programs; however, neither Act described explicitly whether protection for a computer program extended beyond source and object code to the originality and creativity contained in the audiovisual displays comprising the user interface or overall “look and feel” of the computer program.

B. Initial Videogame-Based Case Law

Notwithstanding the lack of statutory guidance, a foundation for copyright protection for “look and feel” dates back to the early 1980s when computer game audiovisual cases were first litigated. One of the more celebrated cases was Atari, Inc. v. North American Philips Con-

---

*Pasture*, in this issue of *Hastings Comm/Ent L.J.* The original selection, organization, and presentation of such commands is protected by copyright post-*Feist*, as is the original selection, organization, and presentation of data. See *Kregos v. Associated Press*, 937 F.2d 700 (2d Cir. 1991).

10. The Software Copyright Act defined “computer program” as “a set of statements or instructions to be used directly or indirectly in a computer in order to bring about a certain result.” 17 U.S.C. § 101 (1988). Such “statements or instructions” include, without question, source code and object code for a computer program; however, interactive audiovisual displays or “look and feel” of computer programs are not explicitly covered by this definition.
sumer Electronics Corp. In Atari, one of the so-called “Pac-Man” cases, the Seventh Circuit reversed a lower court’s denial of Atari’s request for a preliminary injunction against the makers of another audiovisual game featuring a creature called “K.C. Munchkin.” The copyright at issue was not claimed to be one in the underlying code, but rather an audiovisual copyright in the screen display.

In finding that the plaintiff had met its burden of showing a reasonable likelihood of success on the merits, the Seventh Circuit compared the details of the audiovisual displays of the two works, finding that a number of similarities in the Pac-Man and K.C. Munchkin “gobblers” and “ghost monsters” were the deciding factors in Atari’s favor on the question of substantial similarity. While noting that there was not identical copying, the court found that the defendant’s game had captured the “total concept and feel” of Atari’s game. The “total concept and feel” theory was then adopted by a number of other federal courts in computer game cases. In general, copyright was extended broadly to protect the audiovisual displays of this new entertainment medium.

C. The Birth of “Look and Feel”

The videogame cases did not answer the more difficult question of whether copyright protection would extend to the “look and feel” of textual and graphical interfaces of non-entertainment software products, such as word processors, spreadsheets, databases, and operating environments. The article entitled “Copyright in the ‘Look and Feel’ of Computer Software” addressed this question. This article was careful to note that functions and generic features would not be protected and that protection would extend only to original expression presented by audiovisual displays.

“Look and feel” then took on a life of its own. The legal community began debating, and the Copyright Office began receiving all types of registration applications seeking broader protection. Registering the “look and feel” of all computer programs became routine. Such registration

11. 672 F.2d 607 (7th Cir.), cert. denied, 459 U.S. 880 (1982).
12. Id. at 620.
13. Id. at 617-20.
14. Id. at 619-20.
15. See, e.g., Data East USA, Inc. v. Epyx, Inc., 862 F.2d 204, 208 (9th Cir. 1988) (Similarity of the expression of the idea “exists when the ‘total concept and feel of the works’ is substantially similar.”); Aliotti v. R. Dakin & Co., 831 F.2d 898 (9th Cir. 1987).
16. Jack Russo & Douglas K. Derwin, Copyright in the “Look and Feel” of Computer Software, 2 COMPUTER LAW. 1 (Feb. 1985). Contrary to Doug Derwin’s recent recantation, he was fully supportive of “look and feel” as the appropriate term for describing the overall presentation of a computer program’s user interface. Id. at 11.
17. Id. at 8.
was made either as part of the registration of the underlying object and source code or as a separate registration of the visual displays based on the deposit of video tapes, slides, or photographs representing sample portions of the display.

D. The Position of the Copyright Office

The Copyright Office took a number of differing positions while the cases discussed below were making their way through the courts. The Office originally allowed registration of visual displays either as separate audiovisual works or as separate literary works. The Office then changed its position and held that the registration of the underlying program also protected all elements of its audiovisual display.

Starting on September 9, 1987, the Copyright Office held public hearings to obtain comments and recommendations on how it should proceed in this area. At these hearings, three separate views emerged as to the proper procedure to be followed in computer software registration cases. To some degree, these views also represented the conflict, existing then and now within the industry, on the broader question of how the Copyright Act should be interpreted in computer program cases.

The majority view, supported by a number of industry associations, recommended that the Copyright Office continue to allow a single registration to cover the entire work, including visual displays. Under this view, the registrant also would have the option of submitting additional deposit material and/or an additional application for visual displays. A modified version of the majority view suggested that the Copyright Office develop a new registration form specifically designed for computer software applications, a form that would more specifically cover registration of all aspects of the originality embodied in a computer program. The majority position was supported by the need for a uniform Copyright Office practice, by the need to avoid prejudice of existing registrations, and by the desire to allow for flexibility in the future.

A second view, supported mainly by Apple Computer, argued for requiring separate registration applications for visual displays and the underlying program code. The position was supported by the desire to have independent registrations as evidence of independent copyright protection of subject matter (visual displays) that might exist across differing

19. Id. at 153.
20. Id.
21. Id. at 154.
22. Id. at 153.
computer program code and differing computer hardware. In this manner, it was argued, it would be clearer if an infringement of visual displays could occur independent of any infringement of the underlying program code and independent of the particular computer hardware on which the substantially similar visual displays were made to operate.

A third view, supported by some user-oriented associations, suggested that the Copyright Office should not allow any registration of visual displays of computer software. They argued that such displays are generally functional and, therefore, generally not copyrightable.

In response, the Copyright Office noted that each case must be examined separately and that Congress and the courts (not the Copyright Office) should determine blanket rules for eligibility of subject matter for copyright. Original works of authorship embodying expression are properly the subject matter of copyright regardless of whether such works are presented in the form of visual displays of computer programs.

In June 1988, the Copyright Office issued a report and internal guidelines that upheld a single registration application practice for protection of all aspects of a computer program’s originality, including visual displays. Whether the registration application is made for literary works or for audiovisual works turns on which aspect of the work “predominates.” In either case, however, the applicant can submit deposit material to support the areas in which protection is sought. By this mechanism, the Copyright Office, in effect, confirmed at the examination and registration levels, and for practical purposes even further, that copyright protection can extend beyond the literal program code for the computer software and to the “look and feel” of the computer software.

The three views expressed at the Copyright Office hearings roughly correspond to the views found in the conflicting judicial opinions addressing these same issues. One body of case law provides broad protection (like Apple’s position in the Copyright Office hearings); other cases will provide only limited protection (as suggested by some of the user associations in the Copyright Office hearings); and the most recent cases appear to take a middle ground approach by protecting certain user interface elements determined protectable on a case-by-case basis (somewhat similar to the majority view in the Copyright Office hearings). The U.S. Supreme Court has not yet directly resolved the conflicting decisions. We address each group of cases in turn below.

23. Id.
24. Id. at 155.
25. Id.
26. Id.
E. Cases Favoring Broad Protection

A number of cases have favored broad protection of computer software. In general, their rationale is that the “idea” of a computer program can be stated narrowly, and everything else may be properly considered “expression” subject to copyright protection.

I. Whelan v. Jaslow

Though not strictly a “look and feel” case, the decision in *Whelan Associates v. Jaslow Dental Laboratory, Inc.* 27 extended the scope of copyright protection for computer programs and provided a foundation for a number of later software cases.

In *Whelan*, the Third Circuit upheld the trial court's finding of copyright infringement based upon the defendant’s copying of the “structure, sequence and organization” of the plaintiff’s software.28 While recognizing that copyright protection does not extend to the “idea” or functionality of the program, the court found that similarities in the file structures, screen outputs, and certain subroutines, while not comprising a majority of the total number of lines of code in defendant’s software, were similarities in “expression” and therefore constituted copyright infringement.29

In so finding, the *Whelan* court set forth a test for determining the line between unprotectable ideas and protectable expression of those ideas—a test that favors finding protectable expression:

[T]he line between idea and expression may be drawn with reference to the end sought to be achieved by the work in question. In other words, the purpose or function of a utilitarian work would be the work’s idea, and everything that is not necessary to that purpose or function would be part of the expression of the idea.30

In applying the above rule, the Third Circuit quoted the district court:

Different computer systems may functionally serve similar purposes without being copies of each other. There is evidence in the record that there are other software programs for the business management of dental laboratories in competition with plaintiff’s program. There is no contention that any of them infringe although they may incorporate many of the same ideas and functions.31

Thus, the *Whelan* decision extended copyright protection beyond the literal copying of the program code itself, to the structure, sequence,

---

27. 797 F.2d 1222 (3d Cir. 1986).
28. *Id.* at 1239, 1248.
29. *Id.* at 1238-39.
30. *Id.* at 1236 (emphasis omitted).
31. *Id.* at 1238-39 (emphasis omitted).
and organization of that code.\textsuperscript{32} The \textit{Whelan} court also formulated a broad test that limited unprotectable "ideas" to only those necessary to the program's purpose or function. Everything else is or could be protectable expression.\textsuperscript{33} Computer software compatibility, ease of use, user training, and industry standards play no obvious role in this analysis.

2. Broderbund v. Unison World

In \textit{Broderbund Software, Inc. v. Unison World, Inc.},\textsuperscript{34} the district court for the Northern District of California followed the precedent set in \textit{Whelan} of protecting the program's sequence, organization, and structure, and extended this principle to the protection of the program's visual displays. While the plaintiff originally made a number of claims pertaining to its greeting card application program called "The Print Shop," only the question of infringement of the audiovisual copyright in the screen displays was tried to the court.\textsuperscript{35}

In rejecting the argument that the functionality of the program dictated the expression of its user interface, the district court noted that:

On the "Choose a Font" screen, no mechanical or practical factor compelled [defendant] to use those exact words ("Choose a Font"). He could have written, "Select a Font," or "Indicate a Typeface Preference," or "Which Type Style Do You Prefer," or any combination of these terms . . . . \textit{The bottom line is that the designer of any program that performed the same functions as "Print Shop" had available a wide range of expression governed predominantly by artistic and not utilitarian considerations.}\textsuperscript{36}

On the question of sufficient similarity to justify a finding of infringement, the district court said: "The question is whether the infringing work captures the 'total concept and feel' of the protected work."\textsuperscript{37} In finding infringement, the court stated that "[t]he ordinary observer could hardly avoid being struck by the eerie resemblance between the screens of the two programs. In general, the sequence of the screens and the choices presented, the layout of the screens, and the method of feedback to the user are all substantially similar."\textsuperscript{38}

Thus, the \textit{Broderbund} court extended the holding in \textit{Whelan} to audiovisual copyrights in computer programs beyond their literal displays. The court also implied, without directly addressing the issue, that a sin-

\textsuperscript{32} Id. at 1248.
\textsuperscript{33} Id. at 1238-39.
\textsuperscript{34} 648 F. Supp. 1127, 1133-34 (N.D. Cal. 1986).
\textsuperscript{35} Id. at 1129.
\textsuperscript{36} Id. at 1134 (emphasis added).
\textsuperscript{37} Id. at 1137.
\textsuperscript{38} Id.
gle copyright in the greeting card program would protect all original aspects of the program.  

3. Digital Communications v. Softklone

In *Digital Communications Associates v. Softklone Distributing Corp.*, the plaintiff's predecessor-in-interest had developed a telecommunications program, Crosstalk XVI, which allowed users of personal computers to communicate information to other computer users through modems.

The defendant, Softklone Distributing Corporation (Softklone), was created for the purpose of cloning popular software products such as plaintiff's Crosstalk XVI. Softklone's idea and business plan was to create less expensive versions of popular software using independently written source code but having the same functions, user interface, and overall "look and feel" as the more expensive products. Softklone's first product, called "MIRROR," was designed and advertised to have the same user interface as plaintiff's Crosstalk XVI. The justification for this was the advice of Softklone's legal counsel that "the source and object codes of the Crosstalk XVI computer program and the Crosstalk XVI user manual were copyrightable, but that use of a similar or identical screen display to the Crosstalk XVI status screen would not constitute copyright infringement because the status screen was not copyrightable."

The district court in *Digital Communications* first acknowledged *Whelan*, holding that copyright protection can extend to non-literal aspects of the program. The court declined, however, to embrace the argument that the copyright protection subsisting in the underlying program also extended to the visual display of that program, finding instead that these two aspects constituted separate works of authorship and therefore required two separate copyright registrations.

Most importantly, the court found that the status screen, even though only a single display of a number of parameters and commands, was protectable expression and was copyrightable as an arrangement and

39. *Id.* at 1135.
41. *Id.* at 452.
42. *Id.* at 453.
43. *Id.*
44. *Id.*
45. *Id.*
46. *Id.* at 455.
47. *Id.* at 455-56.
compilation of such information independent of its underlying program code. The court noted but distinguished Synercom Technology v. University Computing—the same case later embraced by the Fifth Circuit:

It appears that the [Synercom] court concluded that the idea of the format cards, i.e., a particular sequence of data, had merged with the expression of the format cards, i.e., the sequence of the format card . . . . That is, the idea of the sequence of data necessitated a particular expression of that sequence on the format cards. To the court, the format cards evidenced no stylistic creativity above and beyond the sequence of data.

In the instant case, however, the arrangement of the status screen involves considerable stylistic creativity and authorship above and beyond the ideas embodied in the status screen. It cannot be said that the idea of the status screen, i.e., using two symbol commands to change the operations of the computer program and reflecting that fact on a screen listing the computer program's parameters/commands with their operative values, could not have been expressed in a large variety of ways. The defendants have never contended that they could not have arranged the parameters/commands in a wide variety of patterns without hampering the operation of their program. The parameters/commands could have been arranged and delineated in an almost infinite number of horizontal and vertical patterns and groupings that would be substantially dissimilar to the arrangement and grouping utilized by plaintiff. Likewise, the defendants could have used a wide variety of techniques to indicate which symbols the user should type to effectuate a command, e.g., different symbols could have been chosen, or simply highlighting, or capitalizing, or underlining the appropriate symbols, or any combination thereof, or placement of the symbols in parenthesis or brackets before or after the parameter/command. The modes of expression chosen by the plaintiff for its status screen are clearly not necessary to the idea of the status screen. Therefore the plaintiff's mode of expression of the status screen does not merge with the idea of the status screen.

Thus, Digital Communications stands for the proposition that static visual displays of computer programs, even though entirely textual in nature, can be protected by copyright even if all of a defendant's underlying program code is original and not substantially similar to the plaintiff's program code. The court's decision required, however, that a copyright registration separate from that on the underlying program code be obtained for the visual displays of the program—a requirement in direct conflict with the then-existing and still current practice within the Copyright Office.

49. Id. at 463.
50. 807 F.2d 1256 (5th Cir. 1987).
4. Lotus v. Paperback; Lotus v. Mosaic

In January, 1987, Lotus Development filed suits against Paperback Software\(^5\) and Mosaic Software\(^6\) claiming that each defendant had developed an infringing “clone” of the now famous Lotus 1-2-3 spreadsheet software.\(^7\)

Mosaic Software, Inc. (Mosaic) designed, developed, and marketed a spreadsheet software product called the “Twin,” along with several other related software products. The name “Twin” is not coincidental, because the product was designed to work like Lotus 1-2-3. Mosaic’s advertising even proclaimed that the “Twin” software product “offers you so much more, for so much less.”

Paperback Software International (Paperback) published a spreadsheet software product called “VP-Planner.” Though the name did not suggest it, the packaging for the product made clear that the product “has everything 1-2-3 has . . . with more features and with more functions.”

While both Mosaic’s Twin and Paperback’s VP-Planner had most of the same features, commands, macro language, syntax, organization, and sequence of menus and messages as Lotus 1-2-3, their visual displays were not identical to 1-2-3 or to each other. Both Twin and VP-Planner reorganized and placed their respective menus, sub-menus, prompts, and messages on the bottom of the screen.

Paperback differentiated itself further by adding function numbers and letters in front of certain commands, and Mosaic added an indicator of the internal memory amount available to the user. Both products could, however, read Lotus files without modification, including Lotus macro files, and the Lotus user would find much familiarity in the overall “look and feel” of these products.

Lotus’ complaints against Mosaic and Paperback both pleaded three claims: copyright infringement, false and misleading advertising, and unfair competition. Both actions sought injunctive relief, seizure, impound-
ment, recovery of profits, actual or statutory damages, punitive damages of at least $10,000,000, and reimbursement for attorneys' fees and costs.

Both complaints charged that each product "is copied from, and is substantially similar or identical to":

- the organization, structure and sequence of 1-2-3
- the instructions, command and menu language of 1-2-3
- the macro commands and syntax of 1-2-3
- the organizational and structural expressions of 1-2-3
- the visual displays and screen images of 1-2-3
- the content and format of video displays of 1-2-3
- the sequence of the video displays of 1-2-3
- the displayed instructions and language of 1-2-3

On June 28, 1990, the federal district court in Boston entered a 110-page decision upholding Lotus' copyright in the user interface of Lotus 1-2-3. The court ruled that:

This particular expression of a menu structure is not essential to the electronic spreadsheet idea, nor does it merge with the somewhat less abstract idea of a menu structure for an electronic spreadsheet. . . . [T]he overall structure, the order of commands in each menu line, the choice of letters, words, or "symbolic tokens" to represent each command, the presentation of these symbolic tokens on the screen . . . , the type of menu system used . . . , and the long prompts . . . could be expressed in a great many if not literally unlimited number of ways.

The opinion provided a primer on computer law and copyright law and a detailed, three-part legal test for copyrightability of the nonliteral elements of a computer program:

a. Scale of Abstractions

FIRST, in making the determination of "copyrightability," the decision maker must focus upon alternatives that counsel may suggest, or the court may conceive, along the scale from the most generalized conception to the most particularized, and choose some formulation—some conception or definition of the "idea"—for the purpose of distinguishing between the idea and its expression.

This first step may be called extrapolating a "Scale of Abstractions." The court considers, in effect, how broad or how narrow copyright protection could be in a particular case. This is required in copyright cases because, unlike patents, there are no written claims in copyright registration applications or in issued copyright registration certificates.

---

56. *Id.* at 67.
57. *Id.* at 60 (emphasis added).
b. Essential Elements of the Idea

The court then went on to explain how the fact-finder should attempt to distinguish idea from expression:
SECOND, the decision maker must focus upon whether an alleged expression of the idea is limited to elements essential to expression of that idea (or is one of only a few ways of expressing the idea) or instead includes identifiable elements of expression not essential to every expression of that idea.58

This second step may be called determining the "Essential Elements of an Idea." In practice, the court reviews other software products in the same field to determine those shared elements that, in effect, define the particular product area. In *Lotus v. Paperback*, the court noted that most electronic spreadsheet programs include rows, columns, cells, command menus, messages, and macro languages as essential elements of the idea of an electronic spreadsheet, but the exact manner of expressing the menus, messages, and language differs among the various products.

c. Substantiality of Expression

Finally, the court set forth the last step of the analysis, which involves evaluating the resulting product:
THIRD, having identified elements of expression not essential to every expression of the idea, the decision maker must focus on whether those elements are a substantial part of the allegedly copyrightable "work."59

This third step requires judging whether particular elements individually or, more importantly, when taken as a whole, are not so trivial that sufficient originality exists to merit copyright protection. For example, and as found by the court, each command word in the Lotus macro language is not substantial enough to protect individually, but the command language, as a whole, is protected:
The fact that some of these specific command terms are quite obvious or merge with the idea of such a particular command term does not preclude copyrightability for the command structure taken as a whole. If particular characteristics not distinctive individually have been brought together in a way that makes the "whole" a distinctive expression of an idea—one of many possible ways of expressing it—then the "whole" may be copyrightable.60

The *Lotus v. Paperback* decision clearly confirmed a policy of broad copyright protection for computer software in all of its various forms of originality. More importantly, the district court’s decision opened the

58. *Id.* at 61 (emphasis added).
59. *Id.*
60. *Id.* at 67.
door to further expansion of copyright for voice, audio, and other non-traditional forms of user interfaces.

In theory, other forms of sensory perception, if original and if “fixed” in some form of expression, can be protected by copyright if “the overall structure, the order of commands . . . , the choice of letters, words, or ‘symbolic tokens’ to represent each command . . . .” and other features may be expressed in a number of other ways. Under the above line of cases, copyright is extended broadly without an overly strong concern for competitive principles.

F. Cases Favoring Competitive Principles

A number of cases took a more competitive approach in determining what is copyrightable “expression” in computer software cases. We discuss these cases below.

I. Synercom Technology, Inc. v. University Computing

In Synercom Technology, Inc. v. University Computing Co., the court issued an early potential blow to copyright protection of visual displays—even though the case itself did not deal with the subject of visual displays. Rather, the court was faced with the question of whether the plaintiff’s sequencing of data input formats for a statistical analysis program could be protected by copyright.

The Synercom court rejected the plaintiff’s position and held that the sequence and ordering of data input was unprotected idea. In dicta, the court stated that a further ground for finding no copyright protection was that the plaintiff’s input formats were blank forms whose idea had merged into its expression.

The Synercom court analogized the sequence and ordering of the plaintiff’s data input formats to the familiar “H” shift pattern used in manual transmission automobiles. The court reasoned that another automobile maker would be free to create another car using the same “pattern,” and to allow such copying is “socially desirable” even though “[a]dmittedly, there are many more possible choices of computer formats, . . . but this does not detract from the force of the analogy.”

For the Synercom court it was enough that the input formats represented a barrier to third parties who wished to have their programs use

61. Id.
63. Id. at 1004.
64. Id. at 1013-14.
65. Id. at 1013.
66. Id.
data that had already been formatted for the plaintiff's program. Accordingly, the court gave priority to compatibility and competition. Taken to its limits, the rationale in Synercom would prevent the use of copyright whenever competitors need third-party information (such as compatible screen displays) to take advantage of an installed base of users and user training. This is one of the most critical issues in recent litigation.

2. Plains Cotton v. Goodpasture Computer

In Plains Cotton Cooperative Association v. Goodpasture Computer Service, Inc., the Fifth Circuit affirmed the district court's denial of a preliminary injunction that plaintiff sought for the purpose of enjoining "organizational copying," which defendants had submitted were due to the methods of the cotton industry for which the program was designed.

In Plains Cotton, the plaintiff, an agricultural cooperative, had developed computer software called the "Telcot system." The Telcot system operated on a mainframe computer and, through telecommunications, permitted cooperative members to obtain regularly updated displays of information pertaining to cotton prices and availability, as well as accounting and order processing services. The individual defendants had worked on the development of the Telcot system for the plaintiff but "[n]one of these employees was required to sign confidentiality agreements as a condition of his employment with Plains."

The individual defendants left Plains and went to work for a company called CXS. Plains and CXS had previously entered an agreement whereby CXS was licensed to create a personal computer version of the Telcot system with both parties becoming joint owners of the resulting work. When the individual defendants left to join CXS, Plains sought to terminate the licensing arrangement. Thereafter, CXS became insolvent and filed for bankruptcy. Apparently, while CXS was bankrupt, Plains and CXS reached an agreement regarding termination and regarding Plains' option to purchase all rights in the software that had been created up until that time. Plains did not exercise this option.

The corporate defendant, Goodpasture Computer Service, Inc. (Goodpasture) hired the individual defendants after CXS filed for bank-

67. 807 F.2d 1256 (5th Cir. 1987).
68. Id. at 1258.
69. Id.
70. Id.
71. Id.
72. Id.
73. Id.
74. Id.
ruptucy and put them to work on the personal computer version of the Telcot system. Just twenty days after arriving at Goodpasture, the former Plains employees had completed a design of the personal computer version of the Telcot system. Several months later, Goodpasture began marketing the system under the name “Gems.”\(^7\)

The district court found that: the four former Plains employees had access to the Telcot system; one of them had brought to Goodpasture a diskette containing Telcot system programming design information; and at least one Telcot subroutine had been copied into and as part of the programming for Gems. Nevertheless, the district court refused to enter a preliminary injunction, finding that the underlying program code for the two programs had not been copied (with the exception of the one subroutine, which had been replaced by the date of the preliminary injunction hearing). The Fifth Circuit affirmed and made clear that it was not prepared to embrace a broad scope of protection for software copyrights:

The legal finding by the district court ultimately rests on a judgment about the extent of the protection offered by appellant’s copyright. On that issue, we look to our colleague Judge Higginbotham’s opinion in *Synercom Technology, Inc. v. Univ. Computing Co.* In that case, Judge Higginbotham held that “input formats” of a computer program—the organization and configuration of the information fed to the computer—were ideas, not expressions, and thus were not protected by copyright.

To the extent that input formats represent a level of computer software design more specific than functional design and more general than line-by-line program design, the issue of their copyrightability is relevant to the issue of whether GEMS infringes on protected Telcot designs. Appellant urges that we adopt the reasoning of *Whelan Associates, Inc. v. Jaslow Dental Laboratory, Inc.*, which is admittedly “at odds with Judge Higginbotham’s scholarly opinion.” *Whelan* rejects the premise developed in *Synercom* that “there [is] a difference between the copyrightability of sequence and form in the computer context and in any other context,” holding that the structure, sequence, and organization of computer programs are copyrightable.

We decline to embrace *Whelan* for two reasons. First, the issue is presented to us on review of a denial of a motion for preliminary injunction. Thus, the record is only partially developed, and our review is one step removed from the actual merits of the case. Second, appellees presented evidence that many of the similarities between the GEMS and Telcot programs are dictated by the externalities of the cotton market. To that extent, the facts of this case fit squarely within *Synercom*’s powerful analogy to the hypothetical development of gear stick patterns. The record supports the inference that market factors play a significant role in determining the sequence and organization of

\(^7\) Id. at 1259.
cotton marketing software, and we decline to hold that those patterns cannot constitute "ideas" in a computer context.\textsuperscript{76}

In a footnote further explaining the phrase "externalities of the cotton market" that "play a significant role in determining the sequence and organization of cotton marketing software," the Fifth Circuit stated:

For example, appellees' witnesses testified that their cotton marketing program was designed to present the same information as is contained on a cotton recap sheet, within the confines imposed by use of a computer. By contrast, appellant's expert witness admitted on cross-examination that he had no knowledge of the cotton industry and had never seen a cotton recap sheet, and thus could not comment on whether the similarity between GEMS and Telcot arises from the attempt of both programs to convey the same standardized information to the user.\textsuperscript{77}

The Fifth Circuit thus concluded that Plains Cotton had failed to demonstrate that the district court's factual findings were clearly erroneous or that its findings of law were incorrect.\textsuperscript{78} This decision was the first officially reported post-\textit{Whelan} appellate decision not to find or affirm an infringement based on less than a literal copying of underlying program code:

While finding that defendant's program was "very similar to Telcot on the functional specification, programming and documentation levels,"\textsuperscript{79} the court refused to follow \textit{Whelan} and instead held that at that early stage of litigation, where no adjudication had yet occurred, the structure, sequence, and organization of the plaintiff's program was not necessarily expression but could, as a factual matter, be found after trial to constitute an unprotectable "idea."\textsuperscript{80}

Thus, the Fifth Circuit suggested that whether structure, sequence, or organization of a computer program is protected expression or unprotectable idea must be determined factually on a case-by-case basis. This determination is made by looking at the computer program in the context of the particular industry in which it is employed and deciding whether the custom and practice of that industry demand that the visual displays of such programs be organized in a certain manner because of the custom and practice of the particular industry in which the computer program is designed to operate.

Similar to \textit{Synercom}, the holding in \textit{Plains Cotton} lends support to the argument that software compatibility, ease of use, user training, and industry standards play important roles in determining whether copy-

\textsuperscript{76} Id. at 1262 (citations omitted).
\textsuperscript{77} Id. at 1262 n.4.
\textsuperscript{78} Id. at 1262.
\textsuperscript{79} Id. at 1259.
\textsuperscript{80} Id. at 1262.
right will attach to a particular program and, if so, the scope of copyright protection which will be afforded the particular program.

3. Data East USA v. Epyx

In Data East USA, Inc. v. Epyx, Inc., the Ninth Circuit reversed a finding of copyright infringement by the district court and held that the similarities between the plaintiff's and defendant's respective "Karate" video games were dictated by the functions of the game and not by their expression. The Ninth Circuit stated that:

After careful consideration and viewing of these features, we find that they necessarily follow from the idea of a martial arts karate combat game, or are inseparable from, indispensable to, or even standard treatment of the idea of the karate sport. As such, they are not protectable. "When idea and expression coincide, there will be protection against nothing other than identical copying." A comparison of the works in this case demonstrates that identical copying is not an issue.

Accordingly, we hold that the court did not give the appropriate weight and import to its findings which support Epyx's argument that the similarities result from unprotectable expression . . . .

The lower court erred by not limiting the scope of Data East's copyright protection to the author's contribution—the scoreboard and background scenes. In actuality, however, the backgrounds are quite dissimilar and the method of scorekeeping, though similar, is inconsequential.

The Ninth Circuit's decision is important for a number of reasons. First, it demonstrates that what is "idea" and what is "expression" is determined on a case-by-case basis with no assurance or certainty of outcome. Second, when the evidence of two competing works is reviewable without reference to testimony, the Ninth Circuit will review it and may reverse opposing factual findings of the district court. Third, in the Ninth Circuit's view, even "thin" copyrights—where expression is close to idea—are protected against identical copying.

G. Cases Taking an Analytic (Screen-by-Screen) Approach

Recent cases have taken a more analytic approach in determining which audiovisual expression is protected on an element-by-element or screen-by-screen basis. This approach correctly discerns those screens and the elements of those screens that are disqualified from copyright protection by the doctrines of functionality, merger, scenes a faire, lack of creativity, or lack of originality. However, in the course of analytic dissection, courts may fail to appreciate the overall originality and creativity

81. 862 F.2d 204 (9th Cir. 1988).
82. Id. at 209 (quoting Sid & Marty Krofft Television Prods. v. McDonald's Corp., 562 F.2d 1157, 1168 (9th Cir. 1977)) (emphasis added).
existing in the selection, organization, and presentation of the collection of even public domain screens, or public domain elements on particular screens, or the creative sequencing of such screens from one to another.

I. Manufacturers Technologies v. CAMS

In *Manufacturers Technologies, Inc. v. CAMS, Inc.*, the district court analyzed the copyright protection that extended to a cost estimating computer program called the "COSTIMATOR." The program contained a series of screens that allowed the user to input the information necessary to generate a cost estimate. The defendants, three of whom had acted as the plaintiff's sales representatives for the COSTIMATOR program, began developing a functionally similar program to sell for $1,000 to $2,500 (as compared to the $20,000 price for plaintiff's program). The plaintiff brought suit for, among other things, copyright infringement based on the similarity of the screen displays in the defendants' software.

The district court found copyrightability in the screen displays alone without regard to the underlying program code and held that the defendants had infringed the visual display copyrights. The district court relied upon the Copyright Office's decision and stated:

Whether a copyright in a computer program extends to its screen displays has been the subject of some confusion and disagreement. Part of this confusion was relieved by a recent decision of the Copyright Office which stated that a single copyright registration of a computer program extends copyright protection not only to the literal elements of the program—its source and object codes—but also to the screen displays it generates to the extent that they contain original creative authorship.

The district court went on to review the *Whelan, Broderbund, and Digital Communications* decisions and to hold that:

The Court could require the plaintiff to prove infringement of the program copyrights themselves by showing not only substantial similarity between the computer screen displays but also by showing substantial similarity in the program codes (or by showing that the portion of the program coding represented by the screen outputs was such a qualitative part of the program itself that the program was infringed). The downfall of such an approach is that if, in fact, the infringing party only reverse engineered the screen displays themselves without having had access to the source or object codes, then the plaintiff's task in showing infringement of the computer program itself would be difficult, if not insurmountable. Such an approach would afford little, if

84. *Id.* at 989-90.
85. *Id.* at 990.
86. *Id.* at 990-91 (citation omitted).
87. *Id.* at 992.
any, protection to the expression that may be encompassed within the user interface or screen displays of a program.\textsuperscript{88}

Using the above reasoning, the district court in \textit{CAMS} treated the copyright registration of the computer program as protecting the underlying program code as well as the visual display. As a result, the court found that, though the underlying computer program may not have been copied, the defendants' access to and the similarity of defendants' product to the screen displays of plaintiff's program were sufficient to support a finding of infringement (though the court did note those areas in which the similarities were not sufficient to prove infringement).\textsuperscript{89}

Significantly, the court in \textit{CAMS} rejected the defendants' argument that the "external flow and sequencing of the screens [for a cost-estimating program] is dictated by functional considerations."\textsuperscript{90} The court pointed to evidence of four different cost estimating programs that all accomplished the same cost-estimating functions without using similar screen displays or sequences of displays.\textsuperscript{91} The district court concluded that the similarities between the visual displays and the sequence of visual displays constituted an infringement even though there was "no evidence that the defendants had access to the plaintiff's source code nor did plaintiff put forth any evidence of source or object code similarity."\textsuperscript{92}

2. Apple v. Microsoft and Hewlett-Packard

On March 17, 1988, Apple Computer, Inc. (Apple) filed suit in the federal district court in San Jose, California, against Microsoft Corporation (Microsoft) and Hewlett-Packard Company (H-P).\textsuperscript{93} Apple claimed that both versions 2.03 of Microsoft's Windows operating environment computer software and H-P's New Wave desktop computer software, which operates with Windows, infringed the audiovisual copyrights in Apple's Macintosh visual displays and images.

Since the introduction of the Apple Lisa personal computer in 1983, the Macintosh "desktop metaphor" has become a hallmark of Apple's approach to non-educational (non-Apple II) personal computers. The desktop metaphor embodied in the Macintosh personal computer advanced the work originally developed by Xerox in the sophisticated "Xerox Star" personal computer. Xerox never successfully marketed the Star and has since exited the hardware side of the personal computer marketplace.

\textsuperscript{88} \textit{Id.} at 993.
\textsuperscript{89} \textit{Id.} at 1002.
\textsuperscript{90} \textit{Id.} at 994.
\textsuperscript{91} \textit{Id.}
\textsuperscript{92} \textit{Id.} at 1000 (footnote omitted).
\textsuperscript{93} Apple Computer, Inc. v. Microsoft Corp., 709 F. Supp. 925 (N.D. Cal. 1989).
Apple has been quite successful with the Macintosh. It has also been quite successful in having the Copyright Office register the Macintosh desktop and application software visual displays as audiovisual works and the Macintosh program code as literary works. The registration certificates attached to Apple's complaint showed that Apple attempted to register all aspects of authorship embodied in the Macintosh computer programs including their audiovisual displays.

In 1985, Apple first tested the strength of its Macintosh copyrights in a matter that was never litigated. Digital Research, Inc. (DRI) had introduced a desktop environment called “GEM” that was similar to the Macintosh. Apple's threat of litigation resulted in an agreement between Apple and DRI. The exact terms of the settlement were never made public, but it is clear that DRI acknowledged the substantial risk of adverse results. DRI still markets the GEM windowing software environment, although to some degree, it has been supplanted by Microsoft's introduction of its “Windows” environment for IBM and IBM-compatible computers.

Like its case against DRI, Apple's case against Microsoft and Hewlett-Packard claimed infringement of its graphic user interface. In an early decision, the district court found that certain screen displays were licensed by Apple to Microsoft under the terms of a written non-exclusive license "to use these derivative works in present and future software programs."94

In the litigation, Microsoft acknowledged that certain visual displays in its Windows operating environment were licensed from Apple and "are derivative works of the visual displays generated by Apple's Lisa and Macintosh graphic user interface programs."95 Upon the court's finding that the license agreement extended beyond a single version of Windows, a large number of screen displays and elements contained therein that might otherwise have been the subject of the copyright infringement action were removed from the controversy by summary judgment in Microsoft's favor (with regard to the licensing issue).96

Notwithstanding the adverse determination on the license issue, Apple submitted a list of 189 alleged similarities in categories such as:

1. design and appearance of application windows;
2. design and appearance of dialog boxes;

94. Id. at 928 (emphasis omitted) (citation omitted). This license agreement was the subject of intense license negotiations between Apple and Microsoft at a time when Apple was in need of additional software applications from Microsoft. The negotiations are described by John Sculley in his 1987 autobiography entitled Odyssey.
95. Apple Computer, 709 F. Supp. at 927.
96. Id. at 931-32.
3. menu design and appearance;
4. design and appearance of individual applications;
5. icon design, appearance, and manipulation; and
6. arrangement and manipulation of application windows.

In discussing the problem of separating idea and expression, the court noted the "metaphysical line drawing between idea and expression by which courts rationalize their decisions." Further, the court initially accepted Apple's argument in favor of the overall "look and feel" protection for the Macintosh user interface:

Accordingly, the court concludes that even if elements are found "unprotectable," they should not be eliminated from the substantial similarity of expression analysis. Instead, if it is determined that the defendant used the unprotectable elements in an arrangement which is not substantially similar to the plaintiff's work, then no copyright infringement can be found. If, on the other hand, the works are deemed substantially similar, then copyright infringement will be established even though the copyrighted work is composed of unprotectable elements. There is simply no other logical way of protecting an innovative arrangement or "look and feel" of certain works.

Upon reconsideration, the district court ultimately rejected Apple's approach, stating:

The claimed unifying idea of the Lisa and Macintosh works is an interface suggestive of an office environment with a desktop background, implementing through animated graphical images and fanciful symbols what has been referred to as a "desktop metaphor" . . . .

To the extent the individual features of the Macintosh interface are licensed or are unprotectible they are together, or in conjunction with the protectible features, claimed as a copyrightable arrangement—a "look and feel" which constitutes protectable expression apart from its individual elements.

If "desktop metaphor" is to have any meaning in the context of a traditional copyright analysis, it should serve merely as a label for that group of "ideas" embodied in the Macintosh interface devoted to utilitarian uses of that computer, or as a shorthand way of describing the purpose or object of the panoply of ideas of multiple windows, iconic representation and manipulation, menus and object opening and closing functions to assist computer users in operation of their machines. "Desktop metaphor" does not describe the single unifying idea of the Macintosh interface, but is simply another name for the type of interface used on the Macintosh and is by no means exclusive to it.

The court has narrowed the case considerably. Through a series of rulings on motions for summary judgment, the court has ruled that Ap-
pie's Macintosh interface is primarily a compilation consisting of unprotectable elements and is therefore subject to the "virtual identity standard." Thus, the scope of Apple's suit was reduced from the 189 alleged similarities to only three features potentially infringed by Microsoft's Windows and six features potentially infringed by Hewlett-Packard's New Wave.

Of these, in total, nine alleged similarities, the court has required Apple to prove that the expression associated with four of the remaining features is "substantially similar" in the alleged infringing products and that the expression associated with five of the remaining features is "virtually identical" in the alleged infringing products.

3. Lotus v. Borland

In *Lotus Development Corp. v. Borland International*, the court applied the principles enunciated in *Lotus v. Paperback* to Lotus' contention that Borland's Quattro and Quattro Pro programs infringe its Lotus 1-2-3 spreadsheet program by copying Lotus 1-2-3's menu commands, menu structure, long prompts, and keystroke sequences.

Unlike the Paperback V-P Planner and Mosaic Twin products, Borland's Quattro programs had several interfaces. The "native" interface was a different interface than Lotus 1-2-3. However, the Quattro programs also had an interface available to users called its "1-2-3 interface" or "emulation interface."

To create the emulation interface, "Borland employees reviewed books about 1-2-3 . . . written by third-parties, which books contain schematic or menu-tree type representations of the [Lotus] 1-2-3 menu command hierarchy." They used these hierarchies to construct Quattro programs that copied the relationships (though, Borland contends, not the overall presentation) of the Lotus 1-2-3 menu hierarchy. The district court held that "[i]t is not enough for a plaintiff to prove great similarity of the allegedly infringing work to uncopyrightable parts of the copyrighted work."

However, the district court denied Borland's motion for summary judgment and granted, in part, Lotus' motion for summary judgment, finding that:

101. *Id.* at 205.
102. *Id.* at 206.
103. *Id.* at 208.
104. *Id.*
1. "Lotus acknowledges that any elements of its program that were functionally dictated are not copyrightable." 106

2. "[T]he fact that a form of expression takes on functional character does not remove it from the protection of copyright." 107

3. The "scale of abstractions" available to describe the "idea" of the Lotus 1-2-3 user interface varies from most general to most specific as follows:

(a) an electronic spreadsheet to
(b) a menu-driven electronic spreadsheet to
(c) a hierarchical menu-driven electronic spreadsheet to
(d) a hierarchical menu-driven electronic spreadsheet whose commands are all accessible through the paths of the menu command hierarchy to
(e) the most specific implementation by Lotus in Lotus 1-2-3 of such a hierarchical command-driven interface. 108

The court accepted the approach described in paragraph (d) above as the correct statement of the "idea," thus leaving the actual implementation of Lotus 1-2-3 as potentially copyrightable "expression" in the Lotus 1-2-3 interface.

4. "The admitted fact that the Quattro programs duplicate the set of 'functional relationships' of Lotus 1-2-3 and were designed to do so is conclusive against Borland on the issue of copying that set of functional relationships. Thus, Borland has admitted that it intentionally incorporated into its user interface the 1-2-3 menu commands and menu command hierarchy." 109

5. "Borland did not obtain the right to expressive aspects of Lotus' command hierarchy merely because—if it be the case—the 1-2-3 program revolutionized the spreadsheet market." 110

6. "[T]he menu commands and the menu command hierarchy look the same in both programs. . . . The emulation interfaces are substantially similar in the mixed law-fact sense to the Lotus 1-2-3 user interface (Returning to the metaphor, one may say that is why they 'feel' the same.)." 111

Notwithstanding the above findings, the district court has ordered a jury trial:

because the scope of relief available will depend in part on whether the jury finds for Lotus on disputed factual contentions that the copying of separable expressive elements of the Lotus 1-2-3 user interface into the

107. Id. at 213 (citations omitted).
108. Id.
109. Id. at 208.
110. Id. at 214.
111. Id. at 220-21.
Quattro programs was greater than the minimum essential to constituting a substantial part of the Lotus 1-2-3 work.\textsuperscript{112}

In effect, the district court has determined copyrightability, has rejected defenses to the same, and has left to the jury the question of whether the degree of incorporation of the Lotus 1-2-3 menu commands and menu command hierarchy is a substantial enough taking of a competing work to constitute an infringement. Under this approach, Borland can submit the evidence of the importance of software compatibility, ease of use, user training, and industry standards for evaluating the alleged infringement.


In \textit{Brown Bag Software v. Symantec Corp.},\textsuperscript{113} the Ninth Circuit upheld a summary judgment granted by the district court against a plaintiff seeking protection of the user interface of an outlining software product. In the late 1970s, Dave Winer originated outlining computer software for personal computers. His company, Living Videotext, developed products called ThinkTank (for the IBM PC) and MORE (for the Apple Macintosh).\textsuperscript{114} These products automate outlining through use of a personal computer. After Living Videotext released ThinkTank and MORE, John Friend developed for Brown Bag a clone-like competitive product (originally marketed as shareware) called PC-Outline. For a number of reasons, Living Videotext did not pursue an infringement claim against John Friend or against Brown Bag.

Living Videotext ultimately merged into Symantec, and Symantec marketed both ThinkTank and MORE. After the merger, Symantec hired John Friend to revise ThinkTank and MORE to the next level of innovation for an outlining product. John Friend ultimately developed an advanced outlining program called Grandview for Symantec.\textsuperscript{115} After Grandview was released (and just before Symantec's initial public offering), Brown Bag filed suit in federal district court claiming copyright and trade dress infringement of PC-Outline by Symantec's Grandview software product.\textsuperscript{116}

Citing evidentiary deficiencies, license defenses, and lack of similarity, the district court granted summary judgment in favor of Symantec on the copyright claims.\textsuperscript{117} The district court's opinion did not address

\textsuperscript{112} Id. at 223.
\textsuperscript{113} 960 F.2d 1465 (9th Cir. 1992).
\textsuperscript{114} Id. at 1468.
\textsuperscript{115} Id.
\textsuperscript{116} Id. at 1469.
the Lanham Act trade dress issues.\textsuperscript{118} The Ninth Circuit affirmed the district court’s ruling on the copyright claims but remanded the action for the district court’s clarification of its ruling on the Lanham Act claims.\textsuperscript{119}

The Ninth Circuit’s approach expressly affirms detailed analytical dissection of the copyrightable expression from uncopyrightable features embodied in the user interface:

In particular, the extrinsic test for literary works requires analytical dissection of several "objective components of expression," within a literary work such as plot, theme, characters, and dialogue. Similarity of these objective components in two literary works logically gives rise to a triable issue of similarity. Likewise, computer programs are subject to [an] analytic dissection of various components, e.g., screens, menus, and keystrokes. Because the district court found that Brown Bag made no showing of similarity along these lines with regard to copyrighted components of PC-Outline, summary judgment was not precluded.\textsuperscript{120}

The Ninth Circuit rejected Brown Bag’s position that the overall "look and feel" of the programs at issue had to be compared and evaluated because "the record fails to include any evidence indicating that Brown Bag requested the district court to make this analysis."\textsuperscript{121} More importantly, however, the Ninth Circuit noted that:

\begin{quote}
[the degree to which unprotected or unprotectable features must be eliminated from a comparison of two works is difficult to say. Although copyright protection is not afforded to certain elements of a work, such limitations "must not obscure the general proposition that copyright may inhere, under appropriate circumstances, in the selection and arrangement of unprotected components.\textsuperscript{122}

We submit that the Ninth Circuit's decision correctly states the proper approach: while analytical dissection can and should be used to evaluate infringement claims in computer software cases, the court must still consider the overall "look and feel" of the user interface and evaluate whether the selection, arrangement, and presentation of the user interface is original, is at least minimally creative, and is copied in whole or in substantial part—even if such selection, arrangement, and presentation is of commands and other functional features which, on their own, are not individually or separately protectable.
\end{quote}

\textsuperscript{118} Brown Bag Software, 960 F.2d at 1477.
\textsuperscript{119} Id. at 1478.
\textsuperscript{120} Id. at 1477 (emphasis added) (citations omitted).
\textsuperscript{121} Id. at 1476.
\textsuperscript{122} Id. at 1476 n.4 (emphasis added) (citations omitted).
III

Supreme Court Developments

How would the U.S. Supreme Court decide "look and feel" protection for computer software? In the last three years, the Court has decided three cases of importance to computer lawyers: *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*,123 *Feist Publications v. Rural Telephone Service*,124 and *Two Pesos, Inc. v. Taco Cabana, Inc.*125 Although these cases do not directly address protection of computer software user interfaces, their holdings will be critical to the further definition of legal protection for computer software, including protection of audiovisual user interfaces.

A. *Bonito Boats v. Thunder Craft Boats*

In *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*,126 the U.S. Supreme Court held that a Florida statute protecting boat hull designers from reverse-engineering of their boat hulls conflicted with federal patent law and was therefore preempted by the Supremacy Clause.127

In *Bonito Boats*, no patent application had been filed on the design or manufacturing process used by Bonito Boats. When the Florida legislature enacted a statute prohibiting use of the direct molding process to duplicate unpatented boat hulls and forbidding knowing sales of hulls so duplicated, the Bonito Boats hull model in question had already been on the market for six years.

In its opinion, the Court held that the Florida statute offered patent-like protection to ideas that were unprotected under federal patent law.128 In offering protection to ideas that were unpatentable, the Florida statute restricted the public's ability to exploit unpatented designs and conflicted with the strong public policy favoring free competition in ideas that do not merit patent protection.129 The Court stated: "From their inception, the federal patent laws have embodied a careful balance between the need to promote innovation and the recognition that imitation and refinement through imitation are both necessary to invention itself and the very lifeblood of a competitive economy."

127. Id. at 167-68.
128. Id.
129. Id.
130. Id. at 146.
The Florida statute conflicted with several principles of federal patent law. First, 35 U.S.C. §§ 102(a) and (b) "exclude from consideration for patent protection knowledge . . . already available to the public." Because the boat hulls in question had been sold for six years, they were indisputably already available to the public.

Second, along with requirements of novelty and utility, there is a "nonobviousness requirement [that] extends the field of unpatentable material beyond that which is known to the public under § 102, to include that which could readily be deduced from publicly available material by a person of ordinary skill in the pertinent field of endeavor."

_Bonito Boats_ emphasizes the Court's unwillingness to allow non-patent protection for published functionality:

_Congress has considered extending various forms of limited protection to industrial design either through the copyright laws or by relaxing the restrictions on the availability of design patents. Congress explicitly refused to take this step in the copyright laws and despite sustained criticism for a number of years, it has declined to alter the patent protections presently available for industrial design._

Under _Bonito Boats_, all published, unpatented functionality is in the public domain and is available to all for use in future works. Competitive principles require this result. Such competitive principles aid authors of future works.

**B. Feist Publications v. Rural Telephone Service**

_In Feist Publications v. Rural Telephone Service Co.,_ the U.S. Supreme Court held that a publishing company that copied less than 1,500 name, address, and telephone number listings from the white pages of a telephone book was not guilty of copyright infringement. The Court emphasized that the individual listings were uncopyrightable facts and that the telephone company had not selected, coordinated, or arranged the facts in an original way sufficient to satisfy minimum copyright requirements.

Rural Telephone Service was the sole provider of telephone service in its service area. As a telephone company operating in Kansas, it was required by the State of Kansas to collect and publish telephone listing information in an annual directory. The white pages of Rural Telephone

---

131. _Id._ at 148.
132. _Id._ at 150 (citation omitted).
135. _Id._
Service's directory consisted of a simple alphabetical list of the names of Rural's subscribers, their towns, and their telephone numbers.\textsuperscript{136}

Feist Publications, a publishing company making area-wide telephone directories, paid for the rights to use listings from telephone companies in eleven different service areas near Rural's service area. Rural Telephone Service would not allow Feist to pay for the use of its listings.\textsuperscript{137}

Because Rural would not allow Feist to license its listings, Feist used them without Rural's consent. Feist removed several thousand geographically irrelevant listings, and then verified and attempted to obtain additional information on the 4,935 remaining listings for use in its directory. Most of Rural's listings did not contain street addresses. Ultimately, most of Feist's listings included names, street addresses, towns, and telephone numbers. However, 1,309 of the 46,878 listings in Feist's directory were taken directly from Rural Telephone Service's white pages. Rural sued Feist for copyright infringement.\textsuperscript{138}

Feist conceded that the telephone book, as a whole, was copyrightable but argued that the compilation of listings and individual listings were not copyrightable.\textsuperscript{139} The Court's opinion is useful in defining the scope of protection for works comprised of public domain information.

While the facts underlying a compilation cannot be protected by copyright, the author can claim protection of the manner in which the facts are presented. To qualify for copyright protection, a work must be original to the author. To be original, a work must: (1) be independently created by the author, and (2) possess at least some minimal degree of creativity.\textsuperscript{140}

Compilations of facts can be copyrightable if they possess the requisite originality: "The compilation author typically chooses which facts to include, in what order to place them, and how to arrange the collected data so that they may be used effectively by readers."\textsuperscript{141}

How much creativity is "at least some minimal degree of creativity"? The Court does not define a clear test other than to say that the work must contain "some creative spark, 'no matter how crude, humble or obvious' it might be";\textsuperscript{142} the work does not need to be novel, but can-
not be copied; and the work must contain “the fruits of intellectual labor.”

The *Feist* Court defined the minimal creativity requirement in terms of what is insufficient: “works in which the creative spark is utterly lacking or so trivial as to be virtually nonexistent,” works that are “entirely typical,” “garden-variety,” “devoid of even the slightest trace of creativity,” “could not be more obvious,” and “firmly rooted in tradition and so commonplace that it has come to be expected as a matter of course . . . not only unoriginal, it is practically inevitable.”

Finally, when a compilation of public domain information is protected, the copyright is relatively “thin” and limited to the selection and arrangement of such information. The Court in *Feist* explained that:

This protection is subject to an important limitation. The mere fact that a work is copyrighted does not mean that every element of the work may be protected. Originality remains the *sine qua non* of copyright; accordingly, copyright protection may extend only to those components of a work that are original to the author. . . . Others may copy the underlying facts from the publication, but not the precise words used to present them . . . .

This inevitably means that the copyright in a factual compilation is thin. *Notwithstanding a valid copyright, a subsequent compiler remains free to use the facts contained in an another's publication to aid in preparing a competing work, so long as the competing work does not feature the same selection and arrangement. . . .* [T]he very same facts and ideas may be divorced from the context imposed by the author, and restated or reshuffled by second comers, even if the author was the first to discover the facts or to propose the ideas.

Overall, the *Feist* Court makes clear that copyright rewards originality, not effort. The primary objective of copyright is not to reward the labor of authors, but “[t]o promote the Progress of Science and useful Arts.”

Under *Feist*, trivial user interfaces will receive narrow protection, and routine or commonplace approaches (such as simple menu selections) may receive no protection whatsoever. However, *Feist* reaffirms that original, creative presentations of even public domain information are protected by copyright.

143. *Id.* at 1287.
144. *Id.* at 1288 (citation omitted) (emphasis omitted).
145. *Id.* at 1294 (citation omitted).
146. *Id.* at 1296.
147. *Id.* at 1297.
148. *Id.* at 1289 (emphasis added) (citations omitted).
149. *Id.* at 1290, citing U.S. CONST. art. I, § 8, cl. 8.; accord, Twentieth Century Music Corp. v. Aiken, 422 U.S. 151, 156 (1975).
C. Two Pesos v. Taco Cabana

On January 27, 1992, the U.S. Supreme Court granted certiorari to review the following question:

Whether the Mexican style appearance of a Mexican food restaurant constitutes protectable intellectual property equivalent to a federally registered trademark, even where the restaurant did not, and cannot, show that its Mexican "look" has secondary meaning in the eyes of its customers, so that members of the public associate the restaurant's appearance with that particular restaurant?\(^{150}\)

In *Two Pesos v. Taco Cabana*,\(^{151}\) the U.S. Supreme Court answered this question in the affirmative and held that the "look" of a restaurant, when inherently distinctive, and even though comprised of functional (and therefore unprotectable) items such as furnishings and other leasehold improvements, is protected under the Lanham Act. More generally, when trade dress is inherently distinctive, it does not have to acquire secondary meaning to be protected under the Lanham Act.\(^{152}\)

Taco Cabana operated a chain of restaurants in Texas serving Mexican food. It described its Mexican trade dress as:

[A] festive eating atmosphere having interior dining and patio areas decorated with artifacts, bright colors, paintings and murals. The patio includes interior and exterior areas with the interior patio capable of being sealed off from the outside patio by overhead garage doors. The stepped exterior of the building is a festive and vivid color scheme using top border paint and neon stripes. Bright awnings and umbrellas continue the theme.\(^{153}\)

About seven years after the first Taco Cabana restaurant opened in San Antonio, a Two Pesos restaurant opened in Houston with a very similar motif. Within one year, Taco Cabana's market had expanded enough so that the markets of the two chains of restaurants overlapped in several cities. Taco Cabana sued Two Pesos for trade dress infringement.

"The 'trade dress' of a product is essentially its total image and overall appearance. . . . It involves the total image of a product and may include features such as size, shape, color or color combinations, texture, graphics, or even particular sales techniques."\(^{154}\)

---


152. "To establish secondary meaning, a manufacturer must show that, in the minds of the public, the primary significance of a product feature or term is to identify the source of the product rather than the product itself." *Id.* at 2756 n.4 (quoting Inwood Labs., Inc. v. Ives Labs., Inc., 456 U.S. 844, 851 n.11 (1982)).

153. *Id.* at 2755 (citation omitted).

We believe that the Taco Cabana holding may be employed by software authors and software publishers to obtain additional protection for the "look and feel" of computer software. Such protection will arise when nonfunctional features of a software product are presented in an inherently distinctive way. Such features are subject to trade dress protection under the Lanham Act upon proof of a likelihood of confusion. Such protection extends without proof of access and without proof of copying (though both may be present as they were in Taco Cabana). The open question is whether federal courts will apply in the Lanham Act area similar tests for "functionality" as the courts have applied in determining "idea" or "expression" under the Copyright Act. Ultimately, original, creative, and distinctive user interfaces may be protected by both bodies of federal law.

IV
Conclusion

Developers of pioneering software products will continue to seek broad protection of all aspects of their originality and creativity. Competitors will continue to seek to exploit all unpatented functionality, including methods of operation, user learned techniques, and data compatibility. Each new product—indeed, with software, each new version—presents a new set of facts upon which questions of scope of legal protection and extent of infringement must be examined and re-examined. Though "look and feel" has been attacked by the defense bar, we submit that copyright and Lanham Act protection will remain available for protecting the originality and creativity expressed by software designers and programmers in the user interfaces of their computer software products.

155. The issue is, to some degree, before the Ninth Circuit in Brown Bag Software v. Symantec Corp. ("Brown Bag II"). On remand, the district court ruled that it had intended for all of Brown Bag's claims, including its trade dress claims, to be covered when it granted Symantec's motion for summary judgment. Brown Bag appealed the district court's opinion on the trade dress claims to the Ninth Circuit in December 1992.

In its opening brief filed March 17, 1993, Brown Bag argued that this is a case of first impression for the Ninth Circuit, because the court has not considered whether trade dress law covers the "look and feel" of computer software user interfaces. Citing Two Pesos v. Taco Cabana, Brown Bag argued that trade dress protection under section 43(a) of the Lanham Act should extend to protect portions of computer programs that are not protectable by patents or copyrights.

In its brief filed April 17, 1993, Symantec argues that Brown Bag is using the same evidence it used for its copyright claims recast as evidence for its trade dress claims. Symantec claims that Brown Bag is attempting to convince the Ninth Circuit that "the law of trade dress should take back what, after due balancing, the law of copyright has given to the public," Symantec Brief at 29, in the form of unprotected elements of Brown Bag's PC-Outline user interface.