

AN EMERGING THEORY OF COMPUTER SOFTWARE GENERICISM

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I. INTRODUCTION

Computer software copyright holders have gained a monopoly profit windfall from recent court decisions that incorrectly classify the copyrightable and uncopyrightable aspects of computer programs. Of the three forms of intellectual property protection—patent, copyright, and trademark—only patent protection should enable the holder to earn monopoly profits. To ensure that copyright protection does not allow monopoly profits, the courts and Congress have developed the “idea-expression” distinction. Copyright protection extends only to expressions, not ideas.¹ An expression is one of several available ways to express an idea. Because alternative expressions of the same idea are “available,” extending copyright protection to one expression of an idea will not allow monopoly profits to accrue to the copyright holder.

Recently however, several courts have decided whether an alternative expression was “available” by asking only if it were technically possible. This approach fails to take into account the economic premises and objectives of copyright protection. When differentiating expressions from ideas, however, courts must inquire whether an alternative expression is economically, as well as technically, feasible. To prevent copyright protection from allowing monopoly profits, copyright law should borrow from trademark law the concept of “genericism” to test the competitive realities of enforcing a copyright in computer software. Only in this way can courts evaluate the actual market consequences of enforcing a copyright and thereby advance the goals underlying the Copyright Act.

The doctrine of “genericism” has developed within trademark law to ensure that trademark protection does not allow profits above those resulting from producer identification. When a trade name becomes synonymous with a product in the eyes of consumers, it has become generic. Trademark protection of the name will be denied because the protection would provide economic

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1. See *infra* notes 33-51 and accompanying text.

benefits beyond producer identification. In this way trademark law recognizes the actual market consequences of trademark protection.

Similarly copyright should be enforced only if it allows other persons to compete in the marketplace.² In light of the legislative purposes underlying copyright, focusing on competitive consequences is appropriate.³ Any idea-expression analysis therefore should consider the customer demand for an alternative appearance or operational aspect. If customers strongly resist using an alternative, the appearance or operational aspect of the software has become a generic standard for the industry. Copyright should not protect such generic aspects, just as trademark does not protect generic product names.⁴ Following the trademark analogy, we call this process computer software genericide.

Exploration of this computer software genericide concept begins with a review of the proper role of intellectual property protection in a competitive market.⁵ Here, the rationale for trademark genericide theory and the parallel aspects of copyright and trademark are analyzed. Next, attention is directed towards the role of copyright in computer software protection, and how it achieves its purpose through the delicate task of protecting expressions but not ideas.⁶ In this discussion, recent cases are analyzed for consistency with espoused principles of competitiveness. This review leads to an evaluation of the propriety of extending trademark genericide principles to copyright, and the potential impact of such an extension.⁷

II. PATENT, TRADEMARK, AND COPYRIGHT PROTECTION

Patent, trademark, and copyright protection balance incentives for innovation against promotion of free market competition. Pursuing one of these objectives to the exclusion of the other could cause a serious misallocation of resources. The patent, trademark, and copyright systems therefore incorporate mechanisms to help strike a healthy balance.

A. Incentives to Innovate and the Right to Imitate

Few, if any, inventors will create and disclose ideas if the ideas can be freely copied by competitors.⁸ An inventor will not risk time and money to

2. See, e.g., *Atari, Inc. v. North Am. Philips Consumer Elec. Corp.*, 672 F.2d 607, 616 (7th Cir. 1982); *Whelan Assoc. v. Jaslow Dental Lab*, 797 F.2d 1222, 1235-36 (3d Cir. 1986); *Digital Communications Assoc. v. Softklone Distrib. Corp.*, 659 F. Supp. 449, 457-58 (N.D. Ga. 1987); *Broderbund Software, Inc. v. Unison World, Inc.*, 648 F. Supp. 1127, 1134 (N.D. Cal. 1986).

3. See R. NIMMER, *THE LAW OF COMPUTER TECHNOLOGY*, § 1.02[3], at 1-5, 1-8, 1-9 (1985); R. POSNER, *ECONOMIC ANALYSIS OF LAW*, § 13:6, at 282 (1972). See also *Whelan*, 797 F.2d at 1235.

4. No provision in the Lanham Act explicitly states that generic marks cannot be registered. However, the definition of "trademark" in the Act requires that the mark be able to distinguish the goods of the applicant from those of other producers. Lanham Act, 15 U.S.C. § 1127 (1982). Since a generic mark refers to an entire range of goods in a product class, it cannot serve to distinguish one source of that good from another.

5. See *infra* notes 8-32 and accompanying text.

6. See *infra* notes 33-79 and accompanying text.

7. See *infra* notes 80-93 and accompanying text.

8. See Goldstein, *The Competitive Mandate: From Sears to Lear*, 59 CALIF. L. REV. 873, 878 (1971) ("[A]lthough short-range competitive interests would benefit from immediate and free public access to technological and artistic innovation, to permit such access would destroy incentive to innovate;

create an idea if, when the idea proves commercially attractive, others may take a "free-ride" on the inventor's investment. Absent protection for her idea, an inventor might not invest in creative efforts, thereby stifling inventive activity. To avoid this situation, some protection must be offered to inventors as an incentive to generate and use new ideas.

Nevertheless, open access to ideas plays an important role in the United States economy.⁹ The ready availability of ideas allows individuals other than the inventor to enhance disclosed concepts, thereby improving the welfare of both those individuals and society.¹⁰ For example, after a new product is introduced competitors will try to achieve short-term supranormal profits by improving the product or improving production techniques to reduce manufacturing costs.¹¹ As a result, net social welfare will increase, either because the price of the product falls, the social cost of production¹² falls, or the value of the product rises.

The patent, trademark, and copyright systems grant innovators exclusive use of their innovations to overcome the natural investment disincentives caused by the free-rider effect.¹³ Their interference with the competitive marketplace is minimized, however, by the difficulty of satisfying the prerequisites for protection, and the limitations on the extent and duration of their exclusivity.

new products and works would not be introduced into the market and consequently the long range competitive situation would decline.").

9. See, e.g., *Lear, Inc. v. Adkins*, 395 U.S. 653, 668 (1969) ("[F]ederal law requires that all ideas in general circulation be dedicated to the common good unless they are protected by a valid patent."); *Graham v. John Deere Co.*, 383 U.S. 1, 6 (1966); *Sears, Roebuck & Co. v. Stiffel Co.*, 376 U.S. 225, 230-31 (1964); *Compco Corp. v. Day-Brite Lighting, Inc.*, 376 U.S. 234, 237 (1964); *American Safety Table Co. v. Schreiber*, 269 F.2d 255, 272 (2d Cir. 1959) ("[I]mitation is the life blood of competition."), *cert. denied*, 361 U.S. 915 (1959).

10. See, e.g., *Eastern Wine Corp. v. Winslow-Warren, Ltd.*, 137 F.2d 955, 958 (2d Cir. 1943) ("[T]here is a basic public policy, deep-rooted in our economy and respected by the courts, resting on the assumption that social welfare is best advanced by free competition. . ."), *cert. denied*, 320 U.S. 758 (1943); *Vegeahn v. Guntner*, 44 N.E. 1077, 1080 (Mass. 1896) (Holmes, J., dissenting) ("[F]ree competition is worth more to society than it costs.").

11. The possibility of supranormal profits will stimulate competitors to pursue these tactics. "Supranormal profits" represent a return on investment in excess of that obtainable on other ventures of similar risk. See J.P. GOULD & C.E. FERGUSON, *MICROECONOMIC THEORY* 244 (5th ed. 1980). Product improvements by a competitor will help insulate the competitor from direct competition until others have duplicated the improvements. Techniques which reduce production costs will permit a manufacturer using these techniques to earn supranormal profits at prevailing prices until others adopt the same technologies and reduce their prices. Imitators who simply lower prices will shift demand to their products, thereby earning supranormal profits as long as the price remains above the ultimate competitive equilibrium. The supranormal profits will be of limited duration since competitive equilibrium will be restored when average costs, which include a normal return to capital, equal revenues.

12. "The social cost is also known as the alternative or opportunity cost of production. For example, in producing a commodity *x*, a manufacturer takes people and goods away from the production of commodity *y*. The social cost of producing *x* is that less of *y* (or *z*) is produced for society's consumption." *Id.* at 173-74.

13. See 35 U.S.C. § 154 (1982). See, e.g., *Mazer v. Stein*, 347 U.S. 201, 219 (1954) ("The economic philosophy behind the clause empowering Congress to grant patents and copyrights is the conviction that encouragement of individual effort by personal gain is the best way to advance public welfare through the talents of authors and inventors in 'Science and useful Arts.'"); Goldstein, *supra* note 8, at 878.

B. Patent Protection

The patent system encourages inventors to disclose their inventions to the public by providing a patent holder with a seventeen-year period during which no unauthorized person may make or use products incorporating the protected idea.¹⁴ To obtain patent protection the inventor must reveal the information required to make and utilize the invention so that when the patent expires competitors will be able to introduce products based on the disclosure.¹⁵ Thus, the patent holder exchanges complete disclosure for an opportunity to earn monopoly profits during the period in which the holder's idea is protected.¹⁶ These profits, since they exceed the normal competitive return to capital, may allow the inventor to recover the research and development costs required to bring the idea to market. In nearly all circumstances, the seventeen-year period of protection should be long enough to overcome the free-rider problems for inventors. The incentive to innovate resulting from a grant of exclusivity, however, is realized at a cost to consumers, who pay higher prices and enjoy fewer improvements in the idea during the protection period. Conferring exclusive rights for a limited time, combined with requiring complete disclosure, balances incentives for inventors against the general public's interest in having ideas freely available for use.

Moreover, because a monopoly period may interfere significantly with an efficient allocation of resources in a market economy, either by diverting resources to the monopolist or otherwise wasting them, patent protection is difficult to obtain. To receive a patent an inventor must undertake a lengthy and expensive process to prove that the idea is useful, novel, and non-obvious.¹⁷ Obviously, if other components of the intellectual property system could be used to protect these ideas, then the exacting requirements of the patent system might easily be circumvented. Therefore, copyright and trademark must not provide the same protection for ideas that patent law does, without imposing comparable restrictions and obligations.¹⁸

14. See REPORT OF THE PRESIDENT'S COMM'N ON THE PATENT SYSTEM, *To Promote the Progress of . . . Useful Arts*, 1-3 (1966), reprinted in P. GOLDSTEIN, (COPYRIGHT, PATENT, TRADEMARK AND RELATED STATE DOCTRINES 19-20 (1973); Kahn, *The Role of Patents*, in COMPETITION, CARTELS AND THEIR REGULATION 311 (J.P. Miller ed. 1962).

15. 35 U.S.C. § 112 (1982); *Ansul Co. v. Uniroyal Inc.*, 448 F.2d 872 (1971) (sufficient disclosure enables a person skilled in the art to make and use the product without undue experimentation), *cert. denied*, 404 U.S. 1018 (1982).

16. The use of the term "monopoly" is not technically precise. The inventor may still face competition from others who use different methods, and thus the inventor may not enjoy the power to control prices or exclude competition that characterizes a monopoly in its legal sense. See *United States v. E.I. duPont de Nemours & Co.*, 351 U.S. 377, 391 (1956); *American Tobacco Co. v. United States*, 328 U.S. 781, 811 (1946).

17. 35 U.S.C. §§ 102, 103 (1982). Obtaining and preserving a patent can be very costly. The statutory minimum fees are \$800 before the patent issues, plus \$2400 to maintain the seventeen-year protection period. Also, attorneys' fees often run in the tens of thousands of dollars. Note, *Defining the Scope of Copyright Protection for Computer Software*, 38 STAN. L. REV. 497, 504 (1986) (citing 35 U.S.C. § 41 (1982)).

18. Cf. *Baker v. Selden*, 101 U.S. 99, 102 (1879); Note, *The Broad Sweep of Aesthetic Functionality: A Threat to Trademark Protection of Aesthetic Product Features*, 51 FORDHAM L. REV. 345, 353 (1982); Note, *The Public Interest and the Right to Copy Nonfunctional Product Features*, 19 WM. & MARY L. REV. 317 (1977).

C. Trademark Protection

Trademark law grants a different measure of exclusivity than patent law, and makes that exclusivity subject to different limitations.¹⁹ If unlimited product imitation were permitted, competitors might copy product characteristics or symbols which are used by a certain manufacturer to assure customers of the source of their purchases. This phenomenon could result in severe market inefficiencies.²⁰ Without trademark protection, customers who are pleased by the quality of a manufacturer's product might incur expensive "search" costs to locate that manufacturer's product again; competitors, especially low-cost imitators, may have duplicated all obvious distinguishing features of the desired product.²¹ In other words, imitators might free-ride on a manufacturer's investment in quality control by passing off their low-cost product as that of the original manufacturer. In this event, the manufacturer would have little incentive to perform these desirable services.²² Thus, free imitation might result in fewer product quality investments by manufacturers, and more arduous shopping tasks for customers.

Trademark law attempts to rectify these problems by granting manufacturers the exclusive right to employ product characteristics or symbols which serve to distinguish their goods from those of competitors.²³ Unlike the patent and copyright laws, trademark law does not interfere with the ability to make a product, but only the ability to confuse others as to its identity or origin. Consequently, trademark law should not protect marks when they might confer benefits beyond identification. For instance, granting a manufacturer the sole use of a generic name such as "lite beer" or "shuttle" might allow that manufacturer to derive profits based solely on certain marketing advantages which the common name provides.²⁴ The common law therefore provides no protection for generic marks, and the federal trademark statute prevents registration of generic names.²⁵

19. See, e.g., Burgunder, *Trademark Registration of Product Colors: Issues and Answers*, 26 SANTA CLARA L. REV. 581, 586-89 (1986).

20. See, e.g., *id.* at 589-91.

21. See Burgunder, *An Economic Approach to Trademark Genericism*, 23 AM. BUS. L.J. 391, 392-93 (1985); Folsom & Teply, *Trademarked Generic Words*, 89 YALE L.J. 1323, 1336 (1980).

22. The Senate Committee on Patents stated in its Report to Congress on the Lanham Act:

Trade-marks [sic] encourage the maintenance of quality by securing to the producer the benefit of the good reputation which excellence creates. To protect trade-marks [sic], therefore is . . . to secure to the business community the advantages of reputation and good will by preventing their diversion from those who have created them to those who have not.

S. REP. NO. 1333, 79th Cong., 2d Sess. 1 (1946), reprinted in 1946 U.S. CODE CONG. & ADMIN. NEWS 1274, 1275.

23. Lanham Act, 15 U.S.C. §§ 1052, 1127 (1982).

24. See *Miller Brewing Co. v. Jos. Schlitz Brewing Co.*, 605 F.2d 990 (7th Cir. 1979) (registering "lite beer"), cert. denied, 444 U.S. 1102 (1980); *Eastern Air Lines v. New York Air Lines*, 559 F. Supp. 1270 (S.D.N.Y. 1983) (registering "shuttle" for airline service). See generally Burgunder, *supra* note 19, at 593; Burgunder, *supra* note 21, at 396-402; Folsom & Teply, *supra* note 21, at 1337 ("[T]he use of generic words as trademarks creates an entry barrier that enhances the ability of the firm holding the generic mark to charge supracompetitive prices.").

25. See *WSM, Inc. v. Hilton*, 724 F.2d 1320, 1327 (8th Cir. 1984) ("WSM cannot deprive others of the right to call a product or service by its generic title"); *Abercrombie & Fitch Co. v. Hunting World, Inc.*, 537 F.2d 4, 9 (2d Cir. 1976) (a user "cannot deprive competing manufacturers of the product of the right to call an article by its name"); Lanham Act, 15 U.S.C. § 1052(e)(1) (1982).

D. Copyright Protection

Expressions, like ideas, are subject to free-riders in an environment of free access. Artists might be unwilling to invest the effort required to create expressions without some guarantee that they would have an opportunity to reap sufficient rewards from their endeavors.²⁶ To this end, the copyright laws protect expressions of ideas fixed in tangible form, by granting a copyright holder the exclusive right to copy those expressions for her life plus fifty years.²⁷

Copyright protection, unlike patent protection, can be obtained easily. No registration is required.²⁸ The creator of an original work displaying some modicum of creativity only need ensure that the proper form of notice is appropriately displayed.²⁹

Copyright protection is easier to acquire than patent protection because the value of a patent theoretically far exceeds the value of a copyright. A patent provides exclusive rights to exploit an idea. In contrast, the copyright statute provides, "In no case does copyright protection for an original work of authorship extend to any idea"³⁰ Thus, a patent holder can derive monopoly profits through exclusive ownership of an idea, but a copyright holder only derives protection of one of numerous ways to possibly express an idea. This idea-expression distinction is designed to provide something less than monopoly protection in the competitive framework. The degree of incentive derived from the copyright roughly corresponds to the profits enjoyed by an oligopolist who

A generic trademark may affect consumer purchase decisions because its exclusive employment by one firm may cause consumers to question whether competing products are in the same product class. Rather than engage in the search to determine whether competing goods will meet their needs, they may simply opt for the good which bears the name they understand. For discussions of these economic effects see Burgunder, *supra* note 19; Burgunder, *supra* note 21; Folsom & Teply, *supra* note 21.

26. See P. GOLDSTEIN, *supra* note 14, at 8-19.

27. 17 U.S.C. §§ 102, 106, 302 (1982). Since the copyright statute clearly provides that expressions are protected, but ideas are not, "ideas" must be distinguished from "expressions." This has been among the most controversial aspects of traditional copyright cases, and has proved no less difficult in connection with computer software.

After determining that the plaintiff's work is expression, the court considers whether the defendant copied those expressions. The Copyright Act only protects expressions from being copied and, unlike patent law, does not prevent others from independently conceiving of the same expressions. See, e.g., *Whelan Assoc. v. Jaslow Dental Lab*, 797 F.2d 1222, 1232 (3d Cir. 1986).

A plaintiff usually lacks direct evidence that the defendant copied her work. Instead, the plaintiff can show that the allegedly infringing work is "substantially similar" to the plaintiff's and that the defendant had access to the plaintiff's work prior to completing the development. The factfinder must then decide whether such indirect evidence of copying, based on access and substantial similarity, proves that copying occurred. See, e.g., *Digital Communications Assoc. v. Softklone Distrib. Corp.*, 659 F. Supp. 449, 464 (N.D. Ga. 1987) ("Because copying is ordinarily impossible to prove by direct evidence, it is usually proven indirectly by evidence of a defendant's access to the copyrighted work and substantial similarity between the plaintiff's and the defendant's works.").

Not all copying, even from copyrighted works, should be condemned. Most improvements are conceived with previous works in mind. See, e.g., Letter from Sir Isaac Newton to Robert Hooke (February 5, 1675/6) ("If I have seen further [than you and Descartes] it is by standing upon the shoulders of Giants.").

28. 17 U.S.C. § 408(a) (1982).

29. 17 U.S.C. § 401 (1982).

30. 17 U.S.C. § 102(b) (1982).

competes vigorously to sell a product that differs slightly from others available in terms of tangential characteristics.

Given these considerations, copyright protection theoretically never should be legally enforced under conditions which would entitle the owner to long-term monopoly profits. Instead, the creator should have to depend on patent or some other form of protection to insulate the work from competition.³¹ This philosophy as to the proper role of copyright, adopted by the courts over a century ago, is currently under attack in that idea-expression twilight zone called computer software "look and feel."³²

III. BALANCING COPYRIGHT PROTECTION AND THE SCOPE OF ITS APPLICATION: THE IDEA-EXPRESSION DICHOTOMY

The idea-expression dichotomy delineates subject matter which must be protected by patent (ideas) from that which may be protected by copyright (expression). So long as protection is sought only for one of several viable means of expression, only the limited price for copyright must be paid and the lengthy protection term provided by copyright may be enjoyed.³³ On the other hand, to obtain the exclusive right to exploit an idea, with the resulting potential for monopoly power, the more demanding disclosure requirements of the patent process must be endured and protection will be granted for only a limited term. Correctly distinguishing an idea from an expression thus becomes essential if the patent and copyright protection systems are to keep their intended economic balances.

A. Theoretical Considerations

The Copyright Act of 1976 provides that copyright protection extends only to original works fixed in tangible media of expression, and in no case extends to any ideas, systems, methods of operation, or principles.³⁴ When seeking copyright protection for any given work, therefore, one must separate the

31. See, e.g., *Herbert Rosenthal Jewelry Corp. v. Kalpakian*, 446 F.2d 738, 742 (9th Cir. 1971) ("When the 'idea' and its 'expression' are thus inseparable, copying the 'expression' will not be barred, since protecting the 'expression' in such circumstances would confer a monopoly of the 'idea' upon the copyright owner free of the conditions and limitations imposed by the patent law.").

32. The "look and feel" of a program is a benchmark by which the similarity of allegedly copied computer programs can be measured. Courts have been vague in precisely defining the elements that compose a program's "look and feel." See *Pinheiro & Lacroix, Protecting the 'Look and Feel' of Computer Software*, 1 HIGH TECH. L.J. 411, 420 (1986). See, e.g., *Data East USA, Inc. v. Epyx, No. C-86-20513-WAI*, slip op. (N.D. Cal. June 10, 1987); *Whelan Assoc. v. Jaslow Dental Lab*, 797 F.2d 1222, 1237 (3d Cir. 1986); *Broderbund Software, Inc. v. Unison World, Inc.*, 648 F. Supp. 1127 (N.D. Cal. 1986). See generally Note, *Defining the Scope of Copyright Protection for Computer Software*, 38 STAN. L. REV. 497 (1986); Comment, *Protecting Computer Software: Lessons from the Chip Act*, 1986 ARIZ. ST. L.J. 337 (1986).

33. Copyright protection can be obtained at no cost simply by applying the proper notice of copyright on all published copies of the work. To bring an infringement action and obtain additional statutory rights, however, the copyright must be registered with the United States Copyright Office. 17 U.S.C. §§ 401(b), 501-04 (1982).

34. 17 U.S.C. § 102 (1982).

expression, which is subject to protection, from the idea, which is in the public domain.

A work's idea can be distinguished from its expression at several different conceptual levels.³⁵ Judge Learned Hand first articulated this concept as a spectrum of increasing levels of abstraction progressing from expression (less abstract) to idea (more abstract). According to Judge Hand, "upon any work . . . a great number of patterns of increasing generality will fit equally well, as more and more of the incident is left out."³⁶ The most abstract level consists of "no more than the most general statement of what the [work] is about, and at times might consist only of its title . . ."³⁷ Judge Hand ruled that somewhere between the exact expression and this most abstract level, "there is a point in this series of abstractions where they are no longer protected, since otherwise the [author] could prevent the use of his 'ideas,' to which, apart from their expression, his property is never extended."³⁸

If the lowest level of abstraction were used to delineate ideas from expression, the "idea" of a literary work would be described as relating a tale using a particular plot in a given sequence using certain defined characters who interact and have experiences in a determined way. The expression would thus be viewed as the exact words used to tell the story. Copyright would only prevent others from using those same words to relate the tale.

Alternatively, the line between idea and expression could be drawn at a more abstract level. The "idea" could be to relate a story about a particular subject matter using certain characters who are involved in a particular series of undetermined experiences. Here, the expression would encompass the particular sequence of adventures and incidents used to convey those basic plot elements. In this case, the copyright would be more valuable, preventing others from duplicating not only the exact words, but also many of the scenes depicted in the story.

To expand the scope of expression to include an even higher level of abstraction, the "idea" may be simply to relate a story about a particular topic, while the expression would include the entire plot, as well as all the characters, incidents, and language. Under this interpretation, the work's copyright protection would require others to tell their stories using completely different plot concepts, characters, and language. In other words, the more abstractly one identifies the "idea" of a given work (*i.e.*, a "love story," as opposed to a "story about a young girl who falls in love with a young man from a rival family"), the more the remaining elements of the work (all that is entailed in conveying the story) are viewed as expression and can be protected.

35. See, e.g., *Sid & Marty Krofft Television Prod. v. McDonald's Corp.*, 562 F.2d 1157, 1163 (9th Cir. 1977).

36. *Nichols v. Universal Pictures Corp.*, 45 F.2d 119, 121 (2d Cir. 1930).

37. *Id.* at 121.

38. *Id.*

A levels of abstraction analysis similarly can be applied to distinguish ideas from expression in computer software. For instance, the following progression from a low to a high level of abstraction might be used to distinguish expressions from the idea in a word processing program.

1. At the lowest level of abstraction, the idea is to create a marketable word processing program that interacts with the user and manipulates data in a particular fashion, using a particular logic framework, which includes not only a particular structure, sequence, and organization, but particular algorithms and subroutines as well. The expression, therefore, is the exact code only.
2. At a higher abstraction level, the idea is to create a marketable word processing program that interacts with the user and manipulates data in a particular fashion, using a particular logic framework, which includes the particular structure, sequence, and organization. The expression consists of the code, algorithms, and subroutines used to carry out this logic framework.
3. At a still higher abstraction level, the idea is to create a marketable word processing program that interacts with the user and manipulates data in a particular fashion. The structure, sequence, and organization of the program, are expression.
4. Still more abstract, the idea is to create a marketable word processing program. The structure, sequence, and organization of the program, as well as the methods of data manipulation and user interaction, are the expression of that idea only to the extent each is not indispensable to the program's ability to compete in the word processing program marketplace.
5. Even more abstract, the idea is to create a word processing program. At this level, customer appeal or utility is not a component of the idea. As with the fourth level, the structure, sequence, and organization of the program, as well as methods of data manipulation and user interaction, are the expressions of that idea. The difference is that the expression used will be protected even if indispensable to the marketability of a word processing program.
6. At the highest level of abstraction, the idea is to create a program. Word processing, in and of itself, is protected as an expression.

Obviously, the copyright holder and those who wish to build on the copyrighted program have conflicting interests as to which level of abstraction should be used to distinguish the program's idea from its expression. For example, abstraction level six best protects the developer of a computer program; abstraction level one benefits subsequent programmers. Unfortunately, no satisfactory theory has been formulated for selecting the proper abstraction level even for traditional literary works. Thus, little guidance exists for such a decision in the more complex context of computer software.³⁹

Recent court interpretations of the copyright laws have used abstraction level five to distinguish ideas from expressions in computer software. In other words, the structure, sequence, and organization of a computer program, as well as the manner in which the software interacts with the user, are typically protected against copied programs that are perceived as substantially similar by consumers and/or experts. Many scholars designate protection at this high abstraction level as "look and feel" protection.⁴⁰ Thus, courts currently provide copyright protection not only to literal computer programs, but routinely bestow far-reaching copyright exclusivity by protecting the very look and feel of those programs.

Although the courts have focused on the high end of the abstraction spectrum, fortunately, in so doing, they have also considered the proper role of copyright in the free market. Before providing extensive protection to a program at the level of its structure, sequence, and organization, some courts have been mindful that copyrights are designed to provide sufficient monetary rewards to induce creative expression without granting monopoly power. Therefore, these courts have agreed that programs will not be protected as expressions of an idea when no other conceivable methods exist to express that idea.⁴¹ In this event, the idea and the expression are said to merge, and thus copyright protection will be denied at the level of abstraction under consideration.⁴² When several suitable expressions exist, protecting one of them will not allow the copyright holder to earn long-term monopoly profits. Instead, the best that the copyright holder can achieve in the long-run is an oligopolistic return, assuming that other firms can enter the industry by using the alternative

39. See, e.g., *Peter Pan Fabrics, Inc. v. Martin Weiner Corp.*, 274 F.2d 487, 489 (2d Cir. 1960) (the distinction will "inevitably be *ad hoc*"); Knowles & Palmieri, *Dissecting Krofft: An Expression of New Ideas In Copyright?*, 8 SAN FERN. V.L. REV. 109, 126 (1980).

40. See *Krofft*, 562 F.2d at 1157; *Data East USA, Inc. v. Epyx, Inc.*, No. C-86-20513-WAI, slip op. at 16 (N.D. Cal. June 10, 1987); *Broderbund Software, Inc. v. Unison World, Inc.*, 648 F. Supp. 1127, 1137 (N.D. Cal. 1986); Pinheiro & Lacroix, *supra* note 32, at 421-22. See generally Davis, *Special Problems in 'Look and Feel' Copyright Cases*, 1986 COMPUTER LAW INSTITUTE 741 (1986); Russo & Derwin, *Copyright in the 'Look and Feel' of Computer Software*, 2 COMPUTER LAW. 1 (Feb. 1985); Siegel & Derwin, *Copyright Infringement of the 'Look and Feel' of an Operating System by its Own Applications Program*, 4 COMPUTER LAW. 1 (1987).

41. See *infra* notes 69-73 and accompanying text.

42. *Atari, Inc. v. North Am. Philips Consumer Elec. Corp.*, 672 F.2d 607, 616 (7th Cir. 1982); *Krofft*, 562 F.2d at 1167-69; *Herbert Rosenthal Jewelry Corp. v. Kalpakian*, 446 F.2d 738, 742 (9th Cir. 1971); *Digital Communications Assoc. v. Softklone Distrib. Corp.*, 659 F. Supp. 449, 457-58 (N.D. Ga. 1987).

expressions. This, as noted above,⁴³ is a proper level of incentive under the copyright system.

When the idea and its expression are indistinguishable at a given level of abstraction, the copyrightable elements of the program should be confined to those identified at a lower level of idea abstraction. For example, if only one means exists by which users may interact with a program to accomplish the program's task, copyright protection should not extend to those interactive elements. Copyright protection should be limited to the program's other expression components. This limitation appropriately recognizes that enabling users to interact in a particular and necessary fashion is a component of the program's idea, not protected expression.⁴⁴

Courts analogously applied this multiple expressions test in various contexts prior to the debate regarding computer software copyrightability. For instance, characters and scenes indispensable to the telling of a story always have been denied copyright protection, even when other plot structures and participants in the literary work were granted exclusivity.⁴⁵ Obviously, if protection extended to elements which potential customers considered indispensable, then competitors would be unable to compete in the market. Historical accounts traditionally have been denied protection because there is only one way to tell the truth.⁴⁶ To give to an historian the sole right to relate historical facts would be to provide him with a monopoly because readers of history are interested in facts, not fiction. Likewise, blank forms are not protected when they are required to employ an idea.⁴⁷ Again, by granting exclusivity in the sale of the forms, a copyright would provide a monopoly over the idea itself since competitors could not achieve the idea's objectives without use of the forms.⁴⁸

The multiple expressions test was developed to prevent a copyright from engendering a monopoly position in the market. Copyright protection should not be granted whenever such protection would prevent other firms from effectively competing in the marketplace. Ensuring that multiple expressions exist is especially important in the computer software context, where functional and artistic elements can be inextricably intertwined. Thus, determining whether other means exist to accomplish a task (*i.e.*, express an idea) should only be the start of the inquiry. One must look further and consider whether an alternative program can only accomplish the same function at such slow speed or great cost that potential customers will not buy it. With such functional products as computer programs, one must investigate whether customers will in fact use the alternative expressions before one can conclude that

43. See *supra* notes 30-31 and accompanying text.

44. When distinguishing ideas from expressions, courts refer to the merger doctrine, the "plurality of expressions" test, and the level of abstractions concept. These are not mutually exclusive approaches, as some authors infer, see, e.g., Pinheiro & Lacroix, *supra* note 32, at 419-30, but closely related perspectives concerning the same concept.

45. See, e.g., *Hoehling v. Universal City Studios, Inc.*, 618 F.2d 972, 979 (2d Cir. 1980), *cert. denied*, 449 U.S. 841 (1980); *Alexander v. Haley*, 460 F. Supp. 40, 45 (S.D.N.Y. 1978).

46. *Hoehling*, 618 F.2d at 974, 979.

47. *Baker v. Selden*, 101 U.S. 99 (1879).

48. *Id.* at 103-104.

copyright will not grant monopoly power. If an attribute of a program is indispensable to the sale of any program created to achieve an objective, then that attribute should not receive protection.

Recognizing that a proper theory of copyright protection must include market considerations is consistent with the basic function of copyright: to protect expressions and not ideas. Thus, as discussed above,⁴⁹ the proposition that multiple potential expressions are a precondition to the protection of any of those expressions has been widely accepted by most courts.⁵⁰ Nevertheless, some courts have recently heightened the abstraction level at which they determine protected expression to a point where potential marketability of alternatives is irrelevant.⁵¹

B. Recent Case Applications

Whelan Associates, Inc. v. Jaslow Laboratory, Inc.,⁵² decided by the Third Circuit Court of Appeals, has become pivotal in modern computer software copyright law. Whelan Associates created a program, written in one programming language, to aid Jaslow Laboratory's office in dental office administration. Jaslow agreed to use its best efforts to market the program and Whelan agreed to attempt to improve the program. Two years after the agreement, Jaslow translated Whelan's program into another computer language so it could run on computers used in smaller dental labs. The two programs had structural similarities, based on file organization, screen outputs, and subroutines, although there were certain differences in programming style, programming, data structures, and algorithms. The sale of Jaslow's program in competition with Whelan's formed the basis of the lawsuit.⁵³

In analyzing this case of first impression,⁵⁴ the Third Circuit distinguished the idea behind Whelan's program from its expression by using the following rule:

49. See *supra* notes 41-42 and accompanying text.

50. Also, it is now clear that the substantial similarity test, see *supra* note 27, must be applied not in terms of the general public, but rather in terms of potential users of the work. See, e.g., *Atari*, 672 F.2d at 619; *Krofft*, 562 F.2d at 1166-67; Note, *Copyright Infringement Actions: The Proper Role of Audience Reactions in Determining Substantial Similarity*, 54 S. CAL. L. REV. 385 (1981). This, likewise, is an acknowledgement that copyright protection must be viewed in light of market realities. In a similar vein, an analysis of actual competitive impacts has been elevated to being the primary determinant of the applicability of the fair use defense. See *Sony Corp. of America v. Universal City Studios*, 464 U.S. 417, 450 (1984) ("[A] use that has no demonstrable effect upon the potential market for, or the value of, the copyrighted work need not be prohibited in order to protect the author's incentive to create."). Unfortunately, the courts' recognition of market principles in these contexts does not ensure that they will apply them consistently. Such has especially been the case in computer software protection cases.

51. Such is the position explicitly taken by the court in *Apple Computer, Inc. v. Franklin Computer Corp.*, 714 F.2d 1240, 1253 (3d Cir. 1983) ("If other methods of expressing that idea are not foreclosed as a practical matter, then there is no merger. . . . [C]ommercial and competitive objective[s] . . . [do] not enter into the somewhat metaphysical issue of whether particular ideas and expressions have merged."), cert. dismissed, 464 U.S. 1033 (1984), and followed *sub rosa* by subsequent courts.

52. 797 F.2d 1222 (3d Cir. 1986).

53. *Id.* at 1225-27.

54. *Id.* at 1224.

- 1 The idea is the purpose or function of the program.
- 2 The expression is everything that is not necessary to the function of the program, including the structure, sequence, and organization of the program.⁵⁵

For Whelan's program, the idea was identified as the creation of a computer program which serves as an aid to the business operation of a dental lab.⁵⁶ The expression was identified as the manner in which the program operates, controls, and regulates the computer in receiving, retaining, correlating, and producing useful information either on a screen, print-out, or by audio communication.⁵⁷ Thus, the Third Circuit separated expressions from ideas at a more abstract end of the abstraction spectrum; the expression includes almost everything that the computer does.

In broadly defining the expression to include only those elements not necessary to the function or purpose of the program, the court acknowledged that protection of indispensable elements would inappropriately grant monopoly power to the copyright holder.⁵⁸ Thus, the court noted that where various means can be employed to achieve the same purpose, any one of those means is expression.⁵⁹ In *Whelan*, the court found that the structure of the program was not essential because other dental lab programs were on the market which employed different structures.⁶⁰

Although the existence of other programs is relevant, it should not have disposed of the issue. The court should have analyzed whether these other programs were as desirable or efficient as the *Whelan* model, given a relevant price range. Possibly these programs were on the market before Whelan's and Jaslow's programs, and would soon become hopelessly obsolete due to the Whelan program's uniquely superior concepts of how to arrange dental office information. The court therefore may have entitled Whelan to monopoly profits, a result sanctioned only by the patent system.

*Digital Communications Associates, Inc. v. Softklone Distributing Corp.*⁶¹ followed in *Whelan's* footsteps. The *Softklone* court considered whether *Softklone's* program, which employed a status screen format identical to *Digital's*, infringed *Digital's* copyright in its screen display. The court held that the process or manner by which the screen operated was the idea, but the arrangement of information on the status screen was an expression of that idea.⁶² The court included in its formulation of the idea the use of a status screen to reflect the

55. *Id.* at 1236.

56. *Id.* at 1238.

57. *Id.* at 1238-39.

58. *Id.* at 1237 ("The rule proposed here, which allows copyright protection beyond the literal computer code, would provide the proper incentive for programmers by protecting their most valuable efforts, while not giving them a stranglehold over the development of new computer devices that accomplish the same end.").

59. *Id.* at 1237.

60. *Id.* at 1238.

61. 659 F. Supp. 449 (N.D. Ga. 1987).

62. *Id.* at 458-59.

status, a command driven program, and typing two symbols to activate a command.⁶³ The expression, therefore, consisted of the order and arrangement of the commands, as depicted on the status screen, including the choice of symbols, their placement, and the means used to emphasize them.⁶⁴ Since programmers position information on a screen in various ways, use many symbols to represent such information, and employ several methods to emphasize the symbols, such as highlighting, underlining, or brackets, the court concluded that Digital's status screen was not indispensable to a computer communications package.⁶⁵ Because these elements were protected expression, *Softklone's* copy violated the copyright.

Like the *Whelan* court, the court in *Softklone* correctly observed that the potential plurality of ways to display information on the screen has an important bearing on whether one of those ways deserves copyright protection. However, the court should have determined whether consumers would accept these other formats. The court observed that "[o]ne of the elements of . . . [Digital's] system that has enabled it to receive such widespread support is its distinctively designed 'status screen' screen display."⁶⁶ It follows that a system display could become the standard in the marketplace and no other display would be marketable at equivalent prices. Although it may have been only one of several technically possible ways to represent data when first introduced, through consumer use and acceptance the Digital system may have become the only marketable method. In this way, the manner in which data was displayed on the screen may have become an uncopyrightable idea for the development of which others have a right to compete.

Another recent case granting broad copyright protection to computer software is *Broderbund Software, Inc. v. Unison World, Inc.*⁶⁷ Broderbund was the exclusive licensee of a copyrighted program called "The Print Shop" which helped users create customized greeting cards, signs, banners, and posters. When Unison developed a similar program called "Printmaster," Broderbund sued for copyright infringement.⁶⁸

The court decided that the idea of The Print Shop was the creation of greeting cards and similar graphic products by a variable combination of text and graphics.⁶⁹ Unison alleged, however, that any program designed to create graphics for cards, signs, and banners must have a user interface substantially similar to The Print Shop.⁷⁰ Thus, it argued that the interface was indispensable to the idea and that merger was established. The court, however, was not persuaded because one other program, "Stickybear Printer," also printed greeting cards, but used a different interface.⁷¹ Based on this evidence, the court found

63. *Id.* at 459.

64. *Id.* at 459-60.

65. *Id.* at 462-63.

66. *Id.* at 452.

67. 648 F. Supp. 1127 (N.D. Cal. 1986).

68. *Id.* at 1129-31.

69. *Id.* at 1132.

70. *Id.*

71. *Id.*

for Broderbund, concluding that the copied portions of its program were protected expression.

Two other computer software copyright cases show more sensitivity to the effect that protection would have on opportunities for competition. In *Plains Cotton Cooperative Association of Lubbock Texas v. Goodpasture Computer Service, Inc.*,⁷² plaintiff moved for a preliminary injunction to prevent Goodpasture from marketing a cotton information software system which was substantially similar to Plains', except that it was designed to operate on personal computers rather than mainframes. The Fifth Circuit affirmed denial of the injunction partly because the similarities may have been demanded by consumers of cotton information software.⁷³ The court stated that "market factors play a significant role in determining the sequence and organization of cotton marketing software, and we decline to hold that those patterns cannot constitute ideas in a computer context."⁷⁴ Thus, the court inferred that if users preferred data to appear in a specific format (like a cotton recap sheet), other formats might not be able to compete with Plains'.⁷⁵ Therefore, protecting Plains' format might grant it monopoly power in the cotton information software market.

The conclusion in *Plains Cotton* was influenced by *Synercom Technology, Inc. v. University Computing Co.*⁷⁶ In *Synercom* the court analyzed the scope of Synercom's copyright protection in computer data format cards. University Computing designed a computer program which required data to be inputted in the exact order as punched on the plaintiff's cards. The plaintiff alleged that this violated its copyright because the defendant's program did no more than translate the cards' expression (that is, its data sequence) into a computer program.

The court considered whether the idea of the cards was to input data in any sequence or to input data in Synercom's sequence.⁷⁷ The court held that the idea of the format card was to input data in Synercom's sequence, and thus that sequence was not protected by copyright.⁷⁸ The court analogized Synercom's situation to the creator of the figure H stick shift pattern. Although initially many patterns would perform the required shifting task, after a manufacturer selected the H pattern, others could copy it freely. The court based this finding on the hardship to drivers of different stick shift patterns.⁷⁹

Generally, the *Synercom* court recognized that once consumers are comfortable with a product attribute, they may be unwilling to use competing products that employ alternative forms of that attribute. In this situation, protecting the feature which consumers desire would be unfair. Similarly, on *Synercom's* facts, the court must have considered the hardship to consumers who want to use a competitor's program. If Synercom's cards were protected

72. 807 F.2d 1256 (5th Cir. 1987).

73. *Id.* at 1262.

74. *Id.* at 1262.

75. *Id.* at 1263 n.4.

76. 462 F. Supp. 1003 (N.D. Tex. 1978).

77. *Id.* at 1008.

78. *Id.* at 1013-14.

79. *Id.* at 1013.

consumers would need to make new input cards before they could run another program. Thus, the input format of the cards was held to be an unprotected idea.

The levels of abstraction analysis, plurality of expressions test, and merger doctrine have developed to ensure that copyright not grant monopoly power. Although the recent computer software cases articulate a concern that copyright should never entitle a holder to monopoly power, many courts misapply the various tests, apparently because they have not adequately conceptualized the functional (and thus competitive) significance of a program's "look and feel" and the proper level of incentives for copyright protection. The proper issue is not whether other expressions are *possible*, but whether other expressions are *marketable*.

The *Synercom* and *Plains Cotton* courts seem to have understood this issue. In *Whelan*, *Softklone*, and *Broderbund*, the marketability of the allegedly infringing products should have been investigated thoroughly before the court determined that adequate substitutes existed for the "look and feel" aspects for the allegedly infringed products. In *Softklone*, the users may have become so conditioned to Digital's screen format, or the cost of learning to use another format may have become so prohibitive, that the Digital format should have entered the public domain. The court also should have inquired whether other screen formats really were as applicable to consumer uses as the court hypothesized. Although it seems unlikely, the position of the information on the screen may have been dictated by the needs of the users, and thus all other possible displays would have been inferior and noncompetitive.

Objections to the court's analysis in *Broderbund* mirror those in *Whelan* and *Softklone*. The existence of one other format may not prove the existence of several ways to perform the function of creating cards and banners. More importantly, consumers may not perceive Stickybear Printer and The Print Shop as being at least minimally interchangeable. For instance, Stickybear Printer may be designed for children while Printmaster and The Print Shop may be organized for adults. Stickybear Printer may be for advanced users, while Printmaster and The Print Shop may be for novices. Clearly, the court should not have protected Broderbund's interface format based on such a superficial analysis of market conditions.

If courts insist on protecting software at high levels of abstraction, they should at least recognize that marketability is part of the program's idea, and thus move copyright protection from the fifth level of abstraction to the fourth. At this level, courts, when evaluating whether other expressions exist to accomplish the program's idea, must ask whether those alternative methods are marketable, based on consumer tastes and uses. If the evidence shows that customers will not buy programs that use the alternative forms of expressions, whether for utilitarian or aesthetic reasons, then the expression has become the idea. Drawing a parallel from the trademark system, under these circumstances the expression has become a generic representation of the idea itself. In this event, copyrightable expression should be confined to a lower level of abstraction.

IV. A DOCTRINE OF SOFTWARE GENERICIDE

Recent court opinions have interpreted the Copyright Act to provide broad protections to computer software. In essence, the structure, sequence, and organization, as well as the interactive aspects of computer programs, are protected from anyone who develops copies that are so sufficiently similar that they have the same look and feel as the original program. Such protection will only be enforced, however, if other means are available to achieve the same objectives of the program. The key question which remains, and for which the courts appear to be composing differing opinions, is whether the marketability of those alternatives is relevant to the inquiry. We believe that it must be.

Trademark principles demonstrate how market considerations should affect the extent of copyright protection of computer software. The trademark system provides a range of protection: generic or common names receive no protection, while descriptive words, arbitrary names, and fanciful and imaginative names receive increasing protection.⁸⁰ A generic name can be defined as the word or one of a small set of words which consumers understand as the common expression for a class of products.⁸¹ Both federal and common law deny trademark protection to generic marks.⁸² Further, the federal trademark law provides that a mark that becomes generic will be canceled upon petition.⁸³ This doctrine, trademark genericide, recognizes that customers, either because of shifting intrinsic demand patterns or because of reactions to marketing efforts, may no longer treat a mark solely as a tool for product identification differentiation, but may also consider it a new generic designation for a product.

Typically, genericism results from marketing efforts designed to lead consumers to believe that the registrant's product is superior to competing products. For example, the name "thermos," although fanciful when first registered,

80. The Lanham Act permits registration of almost any name by which the goods of the registrant may be distinguished from the competitive goods of any other producer. The most important exceptions are generic words, which may never be registered, and descriptive words, which may be registered only after they become distinctive of the applicant's goods. 15 U.S.C. § 1052 (1982). See, e.g., *Abercrombie & Fitch Co. v. Hunting World, Inc.*, 537 F.2d 4, 9-11 (2d Cir. 1976) (a manufacturer may choose a word along a continuum ranging from generic to merely descriptive to suggestive to arbitrary or fanciful).

81. See, e.g., *Miller Brewing Co. v. G. Heileman Brewing Co.*, 561 F.2d 75, 79 (7th Cir. 1977).

82. The primary thrust of the federal trademark statute is to facilitate enforcement of common law unfair competition principles, rather than introduce significant new substantive rights. One objective of common law unfair competition policy is to prevent one company from palming off a product as though it were made by another. *Goodyear India-Rubber Glove Mfg. Co. v. Goodyear Rubber Co.*, 128 U.S. 598 (1888). Companies which knowingly employ the identification characteristics of a competitor in order to deceive consumers as to the source of their products are guilty of unfair competition. *Gage-Downs v. Featherbone Constr. Co.*, 83 F. 213 (C.C.W.D. Mich. 1897).

Federal registration eliminated the first element of proof by providing nationwide constructive notice of the claim to the mark. 15 U.S.C. § 1072 (1982). In most other respects the federal trademark statute embodies the common law principles of unfair competition. See, e.g., *In re Deester Concentrator Co., Inc.*, 289 F.2d 496 (C.C.P.A. 1961); Burgunder, *supra* note 19, at 588. Section 43(a) of the Lanham Act (15 U.S.C. § 1125 (1982)) even provides federal unfair competition protection to identifying characteristics that have not been registered.

83. Lanham Act, 15 U.S.C. § 1064(c) (1982) (provides that a petition to cancel a mark may be filed "at any time if the registered mark becomes the common descriptive name of an article or substance. . .").

became generic over time, partly because of the marketing policies of the registrant.⁸⁴ In this situation, the mark might confer on the manufacturer possibilities to achieve profits above those attributable to producer identification. Allowing King-Seely to continue to be the exclusive user of the "thermos" name could have hurt competitors offering vacuum bottles because consumers may not have been sure that their differently named bottles would perform the same functions as a "thermos." Therefore, the common law protection ends, and the federal trademark statute provides for the cancellation of its protection when a mark becomes a product's generic designation.

Likewise, firms which have distinctive names attached to patented products often encounter genericism problems.⁸⁵ When the patent expires, consumers may be so conditioned to refer to the product by the trademark that no other name will be adequate to market a competing product. Under these conditions, the name becomes free for all to use.

Just as trademark law denies protection to generic names, copyright law should deny protection to "generic" program features. Here, a generic feature is the one feature or one of the few features which customers demand to achieve an objective. As with trademark, the inquiry must focus not on the reason for such demand, but on how copyright protection of the generic feature might allow the holder to earn unfair profits.

The copyright system permits above normal profits, but forbids monopoly profits. Thus, a feature will be generic unless consumers view other techniques as reasonably competitive.⁸⁶ Courts must decide whether customers will use programs employing alternative features, assuming their price is within a relevant price range.

Some courts have explicitly applied trademark principles in copyright cases. For instance, in *Atari, Inc. v. North American Philips Consumer Electronics Corp.*,⁸⁷ the central figure of PAC-MAN, the "gobbler," was considered copyrightable expression because it was a wholly fanciful creation. The court observed that fanciful expressions merit the strongest protection, in contrast to relatively simple themes which merit the least.⁸⁸ The trademark principle of giving greater protection to nondescriptive features⁸⁹ is reflected in the copyright case of *Data East USA, Inc. v. Epyx, Inc.*⁹⁰ In *Data East*, a California District Court noted that many constraints are inherent in the sport of karate, and depictions of those constraints are not protected because they "cannot be characterized as fanciful, or imaginative."⁹¹

84. *King-Seely Thermos Co. v. Aladdin Indus.*, 321 F.2d 577, 579 (2d Cir. 1963).

85. *See, e.g., Bayer Co. v. United Drug Co.*, 272 F. 505 (S.D.N.Y. 1921) ("aspirin"); *Haughton Elevator Co. v. Seeberger*, 85 U.S.P.Q. (BNA) 80 (Comm. Pat. 1950) ("escalator").

86. It has been argued under an economic approach to trademarks that a trademark should not be registered if the name, itself, might yield supranormal profits. *See Burgunder, supra* note 21, at 396. Thus the mark must be perfectly substitutable with many other names in terms of its power to attract customers.

87. 672 F.2d 607, 618 (7th Cir. 1982).

88. *Id.* at 617.

89. *See supra* note 80.

90. No. C-86-20513-WAI, slip op. (N.D. Cal. 1987).

91. *Id.* at 10.

The trademark system analogy should be extended so that the doctrine of genericide will apply to copyright cases. If a once arbitrary expression becomes generic over time, then the copyright holder should lose the right to prevent others from copying it. In this context, "becomes generic" means that customers will no longer use a variety of other programs or program features to accomplish their objectives. The expression will become a standard in the market: the idea itself. Other firms must have access to that idea to reasonably compete.

Suppose a hypothetical company, "Softtouch," develops a word processing program which depicts erasure of a file by showing a sheet of paper ripped along a diagonal axis on the terminal screen. Under current views, the idea of such a program would be to indicate that a file is being erased and the expression would be the ripping page. Thus, the ripping page is copyrightable as long as other means exist to indicate that a file is being erased. Without doubt, there are many ways to express this idea. Trash cans, burning pages, and the like, all do the job. However, this does not necessarily mean that copyright should protect the ripping page.

Whether the ripping page is copyrightable should depend on whether it is generic or fanciful. One must analyze whether customers would reasonably use word processing programs which employ other methods to indicate a file is being eradicated. Market surveys would aid in this task. Evidence that other programs were sold to the relevant class of customers while Softtouch's program was on the market is also probative. Such evidence parallels trademark genericism theory, which finds probative evidence that other firms are surviving without using the alleged generic name.⁹²

Assume that the ripping page feature was a protected expression. Over time, however, this feature gained the overwhelming favor of the target audience, either because consumers naturally came to appreciate the ripping page representation more than other forms, or because advertising techniques successfully led them to believe that this method was superior. Whatever the reason, if competitors can no longer sell their word processing programs without this feature, copyright protection should be withdrawn. Otherwise, Softtouch would enjoy a monopoly in the industry. In effect, what was once an arbitrary expression of the idea of file erasure has become the idea of depicting file erasure by a ripping page. In this event, copyright genericide has occurred.

V. CONCLUSION

The intellectual property regime has been developed to increase net social welfare by attacking free-rider problems. The tripartite system of patent, copyright, and trademark is designed to permit a variety of protection and potential returns. Thus, a patent entitles a holder to monopolize an idea, and as a result earn monopoly profits. A copyright entitles its holder to exclusively employ one of several available means to express an idea. In this way, copyright might result in supranormal profits, but at a level that falls short of monopoly profits.

92. See, e.g., *Salton, Inc. v. Cornwall Corp.*, 477 F. Supp. 975 (D.N.J. 1979).

One might say that copyright permits oligopoly profits while a patent allows monopoly returns.

The trademark system should serve as a model for policing the protections from the other systems, particularly copyright. Under trademark law, a mark will not be protected if protection could result in inappropriate profits. Likewise, copyright protection should not be enforced if it might permit the holder to enjoy the benefits of monopoly status; for example, when an idea may only be suitably expressed for consumer purposes in one way.⁹³ Furthermore, under trademark law, protection previously conferred under the law will be removed if protection comes to permit the holder to reap inappropriate returns. Similarly, copyright protections which may validly have attached to works at one time should not be recognized whenever a copyright results in monopoly power. In other words, a copyright should no longer protect a feature if potential customers come to consider only one possible expression of that feature as being able to meet their needs. As with trademarks, it should be irrelevant whether the monopoly status is achieved from an aggressive marketing scheme or simply from the vagaries of consumer demand.

This software genericism doctrine would make the application of copyright law consistent with the basic objectives and philosophies of copyright protection. More importantly, the doctrine could have dramatic, and fundamentally beneficial, effects upon the software market. Developers would have ample incentive to develop novel and more improved techniques, yet potential entrants to mature program markets would not be precluded. As a result, the initial entrants would be encouraged to keep their technological lead, while consumers willing to settle for established features would be able to enjoy commodity-like competition.

93. The extension of the analogy to patent would require a loss of patent protection only when the holder enjoyed a profit level that exceeds monopoly profits. This, by definition, will never occur. On the other hand, and consistent with the analogy, the antitrust doctrine of patent misuse does require the monopolist to grant competitors access to essential facilities within the monopolist's control. See, e.g., *MCI Communications Corp. v. AT&T Co.*, 708 F.2d 1081 (7th Cir. 1983), *cert. denied*, 104 S. Ct. 234 (1983).