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DATABASE RIGHTS AND TECHNICAL DATA RIGHTS: THE EXPANSION OF INTELLECTUAL PROPERTY FOR THE PROTECTION OF DATABASES

Lionel M. Lavenue*

INTRODUCTION

Databases represent the most valuable form of technical data. Indeed, all businesses utilize some form of database, whether an inventory, price schedule, or customer list. Databases play a critical role in all facets of computer technology as every type of computer hardware utilizes computer software which, in turn, utilizes some form of database. Database is the raw material of the information age, and ownership of financial data increasingly means the difference between survival and extinction. Whose Data is It Anyway, INSTITUTIONAL INVESTOR, Nov. 1, 1995, at 47.

There are four general types of databases: (1) financial databases, (2) news databases, (3) business information databases, and (4) science and technological databases. Online Information Marking is Booming, M2 PRESSWIRE, at 1 (visited Mar. 2, 1995) <http://www.presswire.net>.

2. See Priscilla A. Walter, Databases: Protecting an Asset; Avoiding a Liability, 8 COMPUTER LAW. 10, 10 (1991) ("Virtually all businesses, and most individuals, own or use one or more forms of database regularly.").

3. Toshihiro Araki, Information Technology and Legal Issues, in INFORMATION TECHNOLOGY AND GLOBAL INTERDEPENDENCE 193-94 (Greenwood


This Article represents an adaptation of the author's research report completed under the terms of a project sponsored by a Deutche Telecom Fulbright Enterprise Program Award under a Fulbright Scholarship in Germany.

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Tabases also play a central role in computer programming, particularly in fourth generation programming languages like Object-Oriented Programming. Indeed, all information technology ("IT") and information systems ("IS") incorporate some form of database. Both IT and IS development have recently been designated as the largest growing areas of technological development in both the United States and Europe.

In government procurement in the United States, the mere creation of rights in databases, under the data rights regulations, clearly underscores their importance. In this context, a database includes any collection of recorded information capable of reproduction by a computer. In the 1995

4. James Y. Song, Searching for a Link Between Software Patent and Object-Oriented Programming, 76 J. PAT. & TRADEMARK OFF. SOC’Y 687, 692 (1994). Object-Oriented Programming ("OOP") constitutes the most heralded of the new software programming languages, known as fourth generation languages. Id. at 687. OOP entails the development of computer software by dividing the programming problem into steps and then solving the steps in parts, called objects. Id. "[I]n this context, the object is treated somewhat similarly as a record in a traditional database." Id. at 692. Thus, a programmer could hypothetically build a program simply by finding the necessary objects in an object database. Id. As such, Song predicts that the "future success of the software patent field and OOP will heavily depend on having comprehensive and intelligent databases that can be efficiently and accurately accessed, searched, and updated." Id.


6. "Data rights" expansively define the "rights" that the government may claim to the computer software and other data (that is, the "technical data") that results from the performance of a government contract. Notably, some scholars reference these data rights simply as "technical data rights;" however, the term "technical data rights" may represent a misnomer because the pertinent regulations actually describe two types of rights, one component of the regulations pertain to "computer software" and the other component pertains to "technical data." Compare Federal Acquisition Regulation 27.401 (defining "data" as including both computer software and technical data) with Federal Acquisition Regulation 27.401 (defining "technical data" as excluding computer software). Due to this distinction, the better practice is to refer to the rights that may arise in technical data and computer software solely as "data rights," thus clearly distinguishing between "data rights for technical data" and "data rights for computer software." Thus, any reference in this Article to "technical data rights" thus only regards the data rights for technical data.

7. 48 C.F.R. § 1.1001 (1996). The data rights regulations comprise two entirely different sets of regulations: (1) regulations for military contracts subject to the Department of Defense Federal Acquisition Supplement ("DFARS"), and (2) regulations subject to the Federal Acquisition Regulation ("FAR"). The
amendments to the data rights regulations, there was a complete restructuring of the provisions dealing with databases which changed the analysis from a generalized treatment, as computer software, to a special treatment, as technical data. Thus, despite the somewhat tortured history of the data rights regulations in government procurement law, these regulations have provided contractors with at least minimal protection for databases for almost fifty years.

Yet, the data regulations provide contractors with rights in data antithetical to the types of protection provided by the traditional forms of intellectual property. While patents and copyrights are available for computer software, the only protection for the indicia of IS and IT consists of technical data rights as well as trade secret law. However, trade secrets are difficult to maintain in a commercial setting because, if the secret is ever disclosed, trade secret protection is lost. In addition, a trade secret is almost impossible to maintain for computer technology, as use of the technology generally obviates the trade secret. Furthermore, because the data rights regulations for computer software and technical data only apply to government procurement contracts, these rules only provide these legal assurances for the contractual transactions with the government.

DFARS contains the regulations that pertain to computer software and technical data for the Department of Defense ("DOD"), whereas the FAR contains the regulations that pertain to computer software and technical data for all civilian agencies and the National Aeronautics and Space Administration ("NASA"). See DFARS subpart 227; FAR subpart 27.4. Due to the complexities of many military contracts, as well as the statutory mandate of 10 U.S.C. § 2320 (1994), DOD must maintain a separate set of regulations for government procurement, including data rights. Both the DFARS and the FAR may be found in part 48 of the Code of Federal Regulations ("C.F.R."). For purposes of citation hereafter, however, all citations shall refer only to the DFARS or FAR, respectively, because one need only look to the same section in 48 C.F.R. to find any FAR citation. Notably, practitioners refer to the FAR, thus the Federal Acquisition Regulation, in the singular because the regulation refers to itself in that manner. See FAR 1.1001, 48 C.F.R. § 1.1001 (1996).


11. Id.
In the 1991 case, *Feist Publications, Co. v. Rural Telephone Service, Co.*, the United States Supreme Court ruled that traditional intellectual property law does not extend legal protection to the content of databases. Nevertheless, because the data rights regulations (specifically, the technical data rights regulations) provide extraordinary legal protection only under the terms of government procurement contracts, *Feist* did not affect the government's ability to restrict the use of technical data or the government's obligation in certain circumstances to protect such data, including databases. Yet, the technical data rights regulations represent an exception to the rule. For ever since the *Feist* decision, there has been no means to provide legal protection for the content of databases in the United States apart from the realm of government procurement law.

In contrast to the American scheme for the protection of databases, the European Community recently resolved a similar disharmonious situation for databases in Europe by the creation of a new *sui generis* form of legal protection of databases, called "database rights." These rights provide specific terms of protections for databases, provided that the data compilation satisfies the definitional requirements for the *sui generis* right. Prompted by the European example,
the United States has also recently considered the adoption of a similar database rights scheme. As recently as May 1996, the United States Congress considered statutory amendments for the creation of database rights. In addition, the United States has also submitted a recommendation to the World Intellectual Property Organization ("WIPO") for the creation of database rights on an international scale. This Article considers the particular state of the law that exists in the United States with regard to technical data, namely, that the government may create rights to protect its interests in important and vital technical data but that no structure presently exists to extend these types of rights to commercial business transactions.

Part I of this Article reviews the traditional forms of intellectual property used to provide legal protection for information systems and information technology. With some emphasis on government procurement law, the analysis reviews patents, copyrights, trademarks, trade secrets, and mask works and describes the special requirements and limitations that the government places on each type of intellectual property. Part I also presents the problem associated with protecting the indicia of information systems and technology with the traditional forms of intellectual property and further describes the impetus for the creation of the data rights regulations.

Part II (referred to as the "symptom" section) describes this legal dichotomy in the United States. Part III (referred to as the "diagnosis" section) then describes a solution to resolve this dichotomy, namely the creation of rights for the most important type of technical data in commercial business

21. See infra Part I.
22. See infra Part I.
23. See infra Part I.
24. See infra Part II.
transactions—databases.\textsuperscript{25} It then sets forth the state of the law for databases in the United States and makes a comparison to the present state of the law for databases in the European Community.\textsuperscript{26} Accordingly, Part II also contains a description of the new European "database right" in the European Community.\textsuperscript{27} Part IV (referred to as the "prognosis" section) then describes the current status of the various proposals to introduce the database right in the United States, as well as on an international scale.\textsuperscript{28}

This Article concludes with a commentary on the introduction of database rights in the United States and addresses some of the criticisms of this new form of intellectual property protection.\textsuperscript{29} In addition, this Article also contains a recommendation section.\textsuperscript{30} Because the creation of database rights in the United States would involve a heretofore unknown type of intellectual property under government procurement law, the Article recommends that the creation of database rights would require the amendment of section 1498 of title 28\textsuperscript{31} to ensure reasonable and entire compensation to the owners and makers of the new form of intellectual property—the database right.\textsuperscript{32}

I. COMPUTER SOFTWARE AND INFORMATION TECHNOLOGY

[T]echnological developments, such as the development of the Internet and remote computer information databases, are leading to important advances in accessibility and affordability of information and entertainment services. We see opportunities to break through barriers previously facing those living in rural settings and those with physical disabilities. Democratic values can be served by making more information and services available. The public interest requires the consideration and balancing of such interest.\textsuperscript{33}

\begin{itemize}
\item \textsuperscript{25} See infra Part III.
\item \textsuperscript{26} See infra Part III.
\item \textsuperscript{27} See infra Part II.
\item \textsuperscript{28} See infra Part IV.
\item \textsuperscript{29} See infra Conclusion.
\item \textsuperscript{30} See infra Recommendation.
\item \textsuperscript{31} 28 U.S.C. § 1498 (1994).
\item \textsuperscript{32} See infra Recommendation.
\item \textsuperscript{33} 11/15/95 Congressional Testimony, 1995 WL 11869616 (Nov. 15, 1995) (statement of Senator Leahy (D-VT) on S.1284/H.R.2441) (voicing support of expanded copyright protection for digital transmissions).
\end{itemize}
Effective August 8, 1996, the Information Technology Management Reform Act ("ITMRA") fundamentally changed the way that the government procures information systems and technology. The ITMRA repealed the Brooks Act, which had required that all government agencies acquire IT through the General Services Administration ("GSA"). Due to the demand for IT, GSA was unable to process the inordinate and intricate demands of all the federal agencies, so the ITMRA repealed the Brooks Act and made each agency responsible for its own IT procurement. Although the

36. GSA Outlines Initiatives to Help Agencies Implement ITMRA, 66 FED. CONT. REP. 163, 163 (Aug. 19, 1996). The ITMRA eliminated the central role of GSA over all IT procurements and delegated the budget oversight for IT procurements to the Office of Management and Budget ("OMB"). OMB, GSA Gear up for ITMRA Implementation, 65 FED. CONT. REP. 597, 597 (June 10, 1996). The Act also ended the GSA Board of Contract Appeals’ agency-wide jurisdiction over bid protests regarding electronic data. OMB Letter on ITMRA Implementation Sends IT Community into Tailspin, 66 FED. CONT. REP. 61, 61 (July 22, 1996). Thus, without the General Services Board of Contract Appeals ("GSBCA") as a protest forum, the only venues available for bid protest are the General Accounting Office ("GAO"), the United States Court of Federal Claims, and district courts. GAO Questions Agencies’ Selection of CIOs to Implement ITMRA, 66 FED. CONT. REP. 61, 61 (July 22, 1996); see also ABA Section Urges GAO to Create IT Group, 65 FED. CONT. REP. 342, 342 (April 1, 1996) (recommending that the GAO empanel a group of IT experts to adjudicate bid protests essentially constituting a mini-GSBCA).
37. Cohen Plans IT Procurement Reform Legislation, 37 THE GOV'T CONTRACTOR ¶ 83 (1995). The primary failure of IT under the Brooks Act was that, by the time the government received the information systems and technology, the technology was obsolete. Id.; see also Ralph C. Nash, Jr., Selecting the Acquisition Strategy: Help from the New Information Technology Statute?, 10 NASH & CIBINIC REP. ¶ 30, (1996) (describing the drawbacks of the earlier IT acquisition statute as including: “(1) the submission of thousands of pages of information supporting the proposals, (2) many months of evaluation, and (3) a wait of almost two years from the issuance of the Request for Proposals until the award of the contract.”).
38. Congress Continues to Grapple with IT Procurement Management Under Proposal to Split OMB, 38 THE GOV'T CONTRACTOR ¶ 222 (1996). The ITMRA further specifies that each agency designate a chief information officer to be accountable for IT resource management, who can best analyze risks, determine benefits, and minimize costs for IT procurement. Interim FAR Rule Gives Guidance on Managing Risk in IT Acquisition, Transfers FIRMR Provisions, 66 FED. CONT. REP. 140, 141 (1996). In addition, in Executive Order 13,011, the President established three groups to assist OMB with IT procurement supervision: a CIO Council, composed of the Chief Information Officers and Deputy Chief Information Officers of all 28 departments and agencies; a Government IT Services Board, composed of government experts impaneled to identify technological innovation and intergovernmental cooperation; and the
ITMRA made no formal changes in the forms of intellectual property available in government procurement, this broadening of each agency's authority to control IT procurement demonstrates the increasing importance of information systems and technology to the government. Moreover, with the diversification of responsibility for IT procurement under the Act, the role of intellectual property protection will only become of greater importance.

A. Traditional Forms of Intellectual Property Protection: Computer Software and Information Systems and Technology

When Steve Jobs and Steve Wozniak developed the Apple II computer, these two computer wizards began a journey into the realm of intellectual property. In the legal context, intellectual property describes any product of the intellect. Thus, when these two inventors decided how to arrange the electronic components that came to represent the Apple II, they invented a machine, for which the patent laws provide a monopoly for the preclusion of the manufacture, use, and sale of the invention. When these two authors later developed a disk operating system for the Apple II, they authored a work of nonfiction, for which the copyright laws provide certain exclusive rights, such as the exclusive right to reproduce, distribute, and display their works, as well as the right to pre-
pare derivative works based on their copyrighted works. When these two designers decided upon the "Apple" name and the fanciful rainbow-colored Apple symbol as the designation for their new venture, they created a trademark, for which the trademark laws guarantee the owner means to identify one owner's goods from another. Finally, when these two businessmen concluded to market their goods, they made certain commercial judgments regarding pricing and sales, which trade secret law ensures will remain known only to authorized persons. Such is the nature of the traditional forms of intellectual property.

1. Copyright Law

The United States Constitution requires that Congress provide legal protection to "Authors" for "their respective Writings." Since the first Congress, the United States has recognized specific copyright laws. Under the first Copyright Act of 1909, Congress did not recognized the copyrightability of computer software because a computer program

42. 17 U.S.C. § 106 (1994). In contrast to patent rights, a copyright provides an affirmative, exclusive right to the subject matter of the copyright. Id. These exclusive rights endure for the life of the author and fifty years after the author's death, or fifty years after the death of the last author for joint works, or seventy-five years from first publication or 100 years from creation for works made for hire, anonymous, or pseudonymous works. Id. § 302(a-c); see also Copyright Term Extension Bill is Approved by Senate Committee, 52 PAT., TRADEMARK & COPYRIGHT J. 137 (1996) (discussing proposed legislation to extend the copyright term from the life of the author plus fifty years to life of the author plus seventy years).


44. 1 ROGER M. MILGRIM, MILGRIM ON TRADE SECRETS § 2.01[1] (1997). Established by state law, trade secrecy provides protection for confidential business or similar information for a possible indefinite term, as long as the information is maintained in secret. Id.


46. The First Congress initially sought to construe a listing of all copyrightable works. A. LATMAN, COPYRIGHT FOR THE EIGHTIES 5-7 (3d ed. 1989). As this list grew and the sources of copyrightable works expanded, however, a single listing became impracticable. Id. Accordingly, in 1909, the Congress enacted the first Copyright Act with categories of copyrightable works. Act of Mar. 4, 1909, ch. 320, § 4, 35 Stat. 1075, 1076 (previously codified at 17 U.S.C. § 4; recodified 1947; repealed 1976).
was not considered the writing of an author.\(^4\) In the Copyright Act of 1976, however, Congress provided for the protection of computer software by defining a computer program as a "literary work."\(^4\) Later, in 1980, Congress explicitly recognized the copyrightability of computer software.\(^4\) Accordingly, to obtain a copyright for a computer program, an author need do nothing, as a copyright automatically arises by the mere creation of any work of authorship.\(^5\)

When a copyright owner initiates suit for copyright infringement in the proper forum, the burden remains on the federal courts to interpret the scope and application of the

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49. In 1980, Congress adopted the recommendations of the National Commission on New Technological Uses of Copyrighted Works ("CONTU") to specifically recognize the copyrightability of computer software. Pamela Samuelson, CONTU Revisited: The Case Against Copyright Protection for Computer Programs in Machine-Readable Form, 1984 DUKE L.J. 663, 696 (1984). Congress also adopted the CONTU definition for computer programs, "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 (1994).

50. 17 U.S.C. § 102(a). On March 1, 1989, the United States became a member of Berne Convention. 2 MELVILLE B. NIMMER & DAVID NIMMER, NIMMER ON COPYRIGHT § 7.02[B], at 7-15 (1996). As such, an author need not even mark the work with a copyright notice to obtain copyright protection; as a member of that convention, there are no longer any formalities to the acquisition of a copyright. Id. § 7.02[B], at 7-16. Nevertheless, an incentive still exists for registration of a copy in that registration defeats the defense of innocent infringement. Id. § 7.02[CIII], at 7-18. An author may register the copyright by submitting an application and a copy of the program to the Registrar of Copyrights at the Library of Congress. Id. § 7.18[A], at 7-192. The Copyright Office has accepted computer programs for copyright since 1964. COPYRIGHT OFFICE CIRCULAR 31D (Jan. 1965). In addition to the computer program, which is considered a literary work because it may be produced on paper, copyrightability also exists for "screen displays," which are considered audio-visual works. 1 MELVILLE B. NIMMER & DAVID NIMMER, NIMMER ON COPYRIGHT § 2.09[A], at 2-150. Just as music and sound have become important to computer software, these elements would also be separately copyrightable as "musical works." Id. § 209[E], at 2-162. For a recommendation on replacing this piecemeal registration scheme for a single registration procedure for computer software, see Steven M. Levy, Note, Single Copyright Registration for Computer Programs: Outdated Perceptions Byte the Dust, 54 BROOK. L. REV. 965 (1988).
The United States district courts resolve questions of copyright law, and United States circuit courts of appeals review these findings on appeal. As there are thirteen numbered circuit courts of appeals, the possibility thus exists of thirteen different interpretations. To resolve such disputes, the United States Supreme Court may hear appeals from any of these circuit courts of appeals.

The federal courts have consistently recognized the copyrightability of the code of a computer program, whether object code or source code, when interpreting the copyright law for computer software. In addition, the nature of the computer program is generally of no consequence for determining copyrightability: an application program is just as copyp…

51. To show copyright infringement, in the general situation, the copyright owner must prove copying by showing access to the copyrighted work and that the accused infringer's work is "substantially similar" to the copyrighted work. Sid & Marty Krofft Television Prods., Inc. v. McDonald's Corp., 562 F.2d 1157, 1162 (9th Cir. 1977). The determination of substantial similarity depends, in turn, on an expert's opinion of infringement (the objective test) and upon a lay opinion of infringement (the subjective test). Id. In computer software cases, however, courts have not yet resolved how to determine substantial similarity. Compare Computer Assocs. Int'l v. Altai, Inc., 982 F.2d 693, 701 (2d Cir. 1992) (applying the abstraction-filtration-comparison test) with Whelan Assoc. v. Jaslow Bental Lab., 797 F.2d 1222, 1239 (3d. Cir. 1986) (omitting the subject test from the substantial similarity analysis).

52. CHRISTOPHER G. WREN & JILL ROBINSON WREN, THE LEGAL RESEARCH MANUAL: A GAME PLAN FOR LEGAL RESEARCH AND ANALYSIS 7 (2d ed. 1986). Each state has at least one federal judicial district, determined by population and geographic size. Id.

53. Id. There are thirteen federal courts of appeals, described as circuits. Id.

54. Id. In addition to the First through the Eleventh Circuit Courts of Appeals, which are located throughout the United States, there are also two special circuits, the U.S. Court of Appeals for the Federal Circuit and the U.S. Court of Appeals for the District of Columbia Circuit, which are located in Washington, D.C. Id.

55. Id. Before 1982, the Supreme Court had the discretion whether to review cases, except for cases dealing with conflicts among the Courts of Appeals. However, since the Court Improvement Act, the Supreme Court has full discretion to accept or reject all cases submitted for certiorari review. See 28 U.S.C. § 171 et. seq. (1994).

56. The "literal elements" of computer software are copyrightable. Apple Computer v. Franklin Computer, 714 F.2d 1240 (3d Cir. 1983), cert. denied, 464 U.S. 1033 (1984); CMS Software Design Sys. v. Information Designs, 785 F.2d 1246 (5th Cir. 1986). The form of software when actually created by a programmer in a computer language, or source code, is copyrightable, and the form of the software when the language is compiled into binary, or object code, is copyrightable as well. Williams Elecs. v. Arctic Int'l, 685 F.2d 870 (3d Cir. 1982).
table as an operating system.\textsuperscript{57} However, whether copyright extends to any of the other “nonliteral elements” of computer software remains an open question in many of the circuit courts of appeals.\textsuperscript{58} The present point of most disagreement among the circuits involves the protection of the user interface of computer software.\textsuperscript{59}

In matters regarding government procurement by the United States, however, all copyright cases must be brought in the United States Court of Federal Claims, with appeals to the United States Court of Appeals for the Federal Circuit.\textsuperscript{60} Thus, while the various circuits may have inconsistent applications of the copyright law for commercial business transactions, only one application of this law exists for matters concerning government procurement.\textsuperscript{61}

\begin{itemize}
\item \textsuperscript{57} Computer Assocs. Int'l v. Altai, Inc., 982 F.2d 693, 698-99 (2d Cir. 1992). An operating system (such as Windows 95) is an intermediary program between the user and the computer hardware, whereas an application program is a program with which the user directly interfaces (such as a word processor).\textsuperscript{58} ABRAHAM SILBERSCHATZ & PETER B. GALVIN, OPERATING SYSTEM CONCEPTS 1 (4th ed. 1994).
\item \textsuperscript{58} If other than the program object or source code, the various components of computer software are commonly referred to as the “nonliteral elements” of computer software. See Nichols v. Universal Pictures Corp., 45 F.2d 119 (2d Cir. 1930) (Hand, J.) (distinguishing between the literal and nonliteral elements of a literary work). See, e.g., Mitek Holdings, Inc. v. Arce Eng'g Co., 89 F.3d 1548 (11th Cir. 1996); Engineering Dynamics, Inc. v. Structural Software, Inc., 26 F.3d 1335 (5th Cir. 1994).
\item \textsuperscript{59} The user interface includes all of the components integral to a computer program, such as the input method, the command structure, and the manner by which the program interacts with the user. B. SHNEIDERMAN, DESIGNING THE USER INTERFACE 504-07 (1987). These components of computer software include the organization, structure, and sequence of a computer program. See Whelan Assocs. v. Jaslow Dental Lab., Inc., 797 F.2d 1222, 1239 (3d Cir. 1986) (finding the copyrightability of a computer program's structure). These components also include screen displays and even icons. See Stern Elecs., Inc. v. Kaufman, 669 F.2d 852, 856 (2d Cir. 1982) (finding the copyrightability of a screen display independent of the underlying program). The copyrightability of the user interface of computer software entails an issue of much dispute among the legal community. See Bradford P. Lyerla, Copyrightability of Software User Interfaces: The Natural Law Versus the Social Utilitarian Approach, 10 COMPUTER LAW. 21, 21 (1993) (discussing the views of those approving and disapproving of copyright protection for user interface).
\end{itemize}
2. Patent Law

The United States Constitution also requires that Congress provide legal protection to "Inventors" for "their respective... Discoveries." As defined by Congress, however, patent law only recognizes the patentability of machines (something with moving parts, such as an automobile or computer), articles of manufacture (something without moving parts, such as a screwdriver or corkscrew), methods (ways of doing something, such as a chemical process for making penicillin), compositions of matter (physical manifestations, such as a chemical combination, like penicillin), or an improvement on a patent. Traditionally, patent law never classified a computer program in one of these four primary categories of patentable subject matter. For many years, courts deemed computer software akin to a mathematical algorithm: a "law of nature" expressly rejected as patentable subject matter.


65. WILLIAM C. ROBINSON, 1 ROBINSON ON PATENTS 33 (1890).

In the 1981 case of *Diamond v. Diehr*, the Supreme Court, for the first time, found computer software patentable. Although earlier decisions considered computer software as mathematical algorithms, *Diamond v. Diehr* represented the turning point for the patentability of computer software. The invention in *Diamond* regarded a process for curing synthetic rubber, which included the use of a mathematical algorithm and a programmed digital computer to improve the method for molding rubber products. Because the invention used a mathematical algorithm in a computer as part of the invention, and thus not as the invention itself, the Court deemed the invention patentable despite the presence of a computer program. Accordingly, since 1981, the submission of patent applications for computer software to the United States Patent and Trademark Office has increased dramatically.

In contrast to copyright law, where the regional circuit courts of appeals may issue contradictory rulings, a single circuit court of appeals rules on all appellate matters of patent law, the Court of Appeals for the Federal Circuit. The

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68. In *Gottschalk v. Benson*, 409 U.S. 63, 65 (1972), the Supreme Court first considered whether a computer program qualified for patent protection. The program at issue converted binary-coded decimal numerals into pure binary numerals. *Id.* Finding no patentable subject matter in the program, the Supreme Court deemed the computer program a mathematical algorithm, establishing the definition of a mathematical algorithm as "[a] procedure for solving a given type of mathematical problem." *Id.* Then, in *Parker v. Flook*, 437 U.S. 584, 585 (1977), the Court considered a method for updating alarm limits on process variables during the catalytic conversion of hydrocarbons. Although the Court found the method distinguishable from a strict mathematical algorithm, the Court nevertheless deemed the method as ineligible patentable subject matter. *Id.*
70. *Diamond*, 450 U.S. at 188.
rulings of this court of appeals initially seemed just as divergent as those of the Supreme Court, but in the 1994 en banc decision of In re Alappat, the Federal Circuit resolved many of the issues regarding the patentability of computer software as a mathematical algorithm.

In Alappat, the court held that if the invention as a whole indicate structure, then it is patentable, even though it
may claim nothing more than software. But Alappat did not expressly address the patentability of computer software alone; that is, without any reference to a computer, memory, or other form of "structure." The resolution of this issue was to be one of the most important rulings of the Federal Circuit, but in 1995, this issue was made moot by the proposal and eventual issuance of new guidelines for the examination of computer-implemented inventions by the Patent and Trademark Office. For purposes of examination, these

77. Leon R. Turkevich, In re Alappat: The End of 'Mathematical Algorithm' Confusion?, 11 COMPUTER LAW. 1, 6 (1994) (citing Alappat, 33 F.3d 1526 (Fed. Cir. 1994)(en banc)). In Alappat, the patent claim involved a computer process (a rasterizer used to create smooth waveform display on a digital oscilloscope) utilized by a computer. Id. at 3-4. Thus, the claim had no structure other than a mere reference to use on a computer. Id. In a clear abandonment of the Freeman-Walter-Abele test, which required an express indication of structure, the court found the claim patentable based on the mere mention of structure (in this case, a general purpose computer) in the specification, which the court considered under 35 U.S.C. § 112 ¶ 6, due to the means-plus-function nature of the claims. Id. at 5-6.

78. See Marc E. Brown, Patent Pending?: Is Computer Software Patentable?, SOFTWARE MAGAZINE, Jan. 1996, at 6 ("It is only wishful thinking to regard [Alappat] as paving the way for the patentability of computer software."); see Peter J. Ayers, Interpreting In re Alappat with an Eye Towards Prosecution, 76 J. PAT. & TRADEMARK OFF. SOC'Y 741, 742 n.5 (1994) ("The court also left lingering questions about the patentability of pure software inventions," that is, "inventions in which the preferred embodiment is software executable by a general purpose programmable computer and which cannot practically be implemented in hardware."). Indeed, in a case following Alappat, one panel of the Federal Circuit demonstrated its hesitance to fully reject the Freeman-Walter-Abele test in In re Trovato, 42 F.3d 1376, 1383 (Fed. Cir. 1994) and, thus, to fully adopt the Alappat reasoning. In that case, the court issued a ruling rejecting the computer software claims as nonpatentable subject matter, distinguishing the case from Alappat because the claims were not means-plus-function and thus did not incorporate the structure of the specification. Id. For a stinging criticism of the Trovato decision, see James R. Goodman et al., Toward a Fact-Based Standard for Determining Whether Programmed Computers and Patentable Subject Matter: The Scientific Wisdom of Alappat and Ignorance of Trovato, 77 J. PAT. & TRADEMARK OFF. SOC'Y 353, 355-67 (1995).


80. The question of the patentability of pure software was proffered to the Federal Circuit in In re Beauregard, 53 F.3d 1583 (Fed. Cir. 1995). But due to the introduction of the proposed new guidelines for the patentability of computer software, the Patent and Trademark Office withdrew the appeal, explaining that it would no longer reject patent claims based on the "printer matter" exception in the context of 35 U.S.C. § 101. See David L. Stewart, Patenting of Software, Proposed Guidelines and the Magic Dividing Line that
DATABASE RIGHTS

Guidelines require a presumption that pure computer software should be presumed patentable if within one of the categories of statutory subject matter. As with claims against the government for copyright infringement in the context of government procurement, claims against the government for patent infringement also occur only in the Court of Federal Claims, with appeal to the Court of Appeals for the Federal Circuit.

3. Trademark Law

Unlike copyrights and patents, the Constitution does not explicitly require Congress to provide protection for trademarks. Nevertheless, as instituted by Congress under the Trademark Act of 1946 ("the Lanham Act"), trademark law provides important protection not only for words, phrases, and symbols, but also for drawings, logos, and distinctive features.


81. Laurenson, supra note 80, at 823.


tures of a product's packaging. As with patents, one secures a trademark by submission of an application to the Patent and Trademark Office. Trademarks are socially and economically important tools allowing consumers to identify the source of a product's origin, and depending upon their experience with a manufacturer, to seek out or avoid buying the goods again.

Another concept in trademark law, trade dress, extends certain protections to the total image of a project, including the size, shape, color or color combinations, texture, and graphics. Yet, while a trademark may pertain to the name of computer software as well as to the packaging of the software, the law remains in flux whether "trade dress" extends protection to the nonliteral, or even literal, elements of a computer program. Nevertheless, following the Supreme Court's decision in Two Pesos, Inc. v. Taco Cabana, Inc.,


86. 15 U.S.C. § 1051(b) (1994). To obtain a trademark, the applicant must submit an application claiming that no other person or entity is authorized to use the mark. Id. The application must certify that the mark: (1) meets the definition of a trademark under the Act, (2) is in actual use in interstate commerce, (3) is "affixed" to the goods, and (4) is not barred from registration by the Act. Id. § 1052.


90. 505 U.S. 763 (1992). In Two Pesos, the Supreme Court explained that certain types of dress may be so distinctive that trade dress protection incurs. Id. at 768. The subject of dress in the case involved the adornments of a Mexican restaurant. Id. at 764. One restaurant utilized an atmosphere with a rugged outdoor look, colored lights, and Mexican motifs, and when another restaurant attempted to utilize a similar trade dress, the former alleged trade dress infringement. Id. at 764-65. The infringement allegation was sustained, and the Supreme Court affirmed the finding. Id. at 770. Ruling that, if the "total image" of a product produces unexpected visual image of the particular product,
some scholars have suggested that trade dress constitutes a perfect method for protecting the user interface of computer software.91

In contrast to copyright infringement and patent infringement suits against the United States, there is presently no statutory authority to sue the United States for trademark infringement.92 Nevertheless, if trade dress becomes a common form of intellectual property protection for computer software, the need may arise to allow suit against the government for trademark infringement.93 If any trademark action exists against the Government, the action would only arise in the Court of Federal Claims, with appellate jurisdiction to the Court of Appeals for the Federal Circuit.94

4. Trade Secret Law

As with trademarks, trade secrecy laws are not required that trade dress may be distinctive and not generic. Id.

91. As in Two Pesos, a similar use of the trade dress analysis in trademark law could protect the “total image” that a computer software product’s user interface conveys. See, e.g., George Likourezos, Trademark Law in the Computer Age: Applying Trademark Principles to the “Look and Feel” of Software, 77 J. PAT. & TRADEMARK OFF. SOC’Y 451, 471-74 (1995); Steven Schortgen, Note, “Dressing” Up Software Interface Protection: The Application of Two Pesos to “Look and Feel,” 80 CORNELL L. REV. 158, 160-61 (1994). Some trademark practitioners cannot understand the absence of trademark applications for computer program screens, given the broader subject-matter areas encompassed by trade dress. Norm D. St. Landau, Address to the District of Columbia Bar Association, on Trade Dress: The Future of Screen Display and User Interface Protection 3 (Feb. 16, 1995). Noting that, because trade dress has been extended to packaging (bottle labels), publication covers (appearance of magazine cover), product containers, product configurations (shape of a tablet), and business styles (restaurant decor), trade dress protection for user interfaces would seem the next logical step. Id. at 3-5

92. There currently exists no statutory authority for the owner of a trademark to sue the government for trademark infringement. Yet, there has been very little reason for the government ever to require the use of a trademark. Some of the only exceptions include the protection of marks such as “Smokey the Bear” or “Woodsy the Owl,” which are statutory trademarks. See 16 U.S.C. § 580p-4 (1994).

93. For an action against the United States, however, federal courts require an explicit waiver of sovereign immunity. Irwin v. Department of Veterans Affairs, 498 U.S. 89, 95-96 (1990).

94. Lockridge v. United States, 218 Ct. Cl. 687, 689 (Cl. Ct. 1978). In Lockridge, the Court of Claims recognized that, if a trademark action is contained within another action over which the court has jurisdiction, the court may take jurisdiction over the trademark action. Id. If any trademark action were to arise in the Court of Federal Claims, it would seem that, in the absence of explicit authority, such as for patent and copyright infringement, only a Lockridge action would exist.
by the Constitution. Indeed, trade secrecy laws are implemented by state, not federal, law. These laws protect ideas, concepts, and information used in business not generally known to the public that provides a business advantage to the owner of the information. For entitlement to a trade secret, the owner need not keep the information an actual secret but only provide reasonable steps to ensure its confidentiality. If successfully maintained, a trade secret entitles

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97. The most common definition of a trade secret appears in the Restatement of Torts:

[A trade secret] differs from other secret information in a business (see § 759) in that it is not simply information as to single or ephemeral events in the conduct of the business as, for example, the amount or other terms of a secret bid for a contract or the salary of certain employees, or the security investments made or contemplated, or the date fixed for the announcement of a new policy or for bringing out a new model or the like. A trade secret is a process or device for continuous use in the operation of a business.

RESTATEMENT (SECOND) OF TORTS § 757 (1939). Note that the Restatement (Second) of Torts does not contain reference to trade secrets, as that topic is covered in the Restatement (Third) of Unfair Competition. RESTATEMENT (SECOND) OF TORTS, introductory note to Division Nine (1979); RESTATEMENT (THIRD) OF UNFAIR COMPETITION §§ 39-45 (1995). Nevertheless, the above quoted definition is the most cited reference for trade secrecy law. MELVIN F. JAGER, TRADE SECRETS LAW § 3.01[1], at 3-4 (1994). The second most referenced source of trade secrecy law is the Uniform Trade Secrets Act ("UTSA"). *Uniform Trade Secrets Act* commentary, 14 U.L.A. 433 (1990).

98. RESTATEMENT (SECOND) OF TORTS § 757 cmt. b (1939). Because a trade secret was not traditionally considered property, it could not be possessed. *Id.* at 757(a). Instead, trade secrecy laws only provide a means of prohibiting the acquisition of such information by improper means, such as industrial espionage or through unauthorized use by a licensee. *Uniform Trade Secrets Act*
the owner to possession and use of the proprietary information and to protection against appropriation of the trade secret by nefarious or unfair means. 99

Although most states consider the misappropriation of trade secrets a civil matter, more and more states are beginning also to recognize criminal sanctions for the improper appropriation of trade secrets. 100 These sanctions are particularly relevant to computer companies because trade secrecy provides a particularly advantageous means of protection for computer software because software may be licensed and distributed without disclosure of the actual code. 101 In the realm of federal procurement, however, the application of state civil trade secrecy laws against the federal government posits an improbable event, since the application of criminal trade secrecy laws against the federal government represents an impossibility. 102 Thus, if the government releases such information, federal law, and not state law, must be found to authorize suit against the government (i.e., for the waiver of sovereign immunity). 103

If the government discloses trade secrets, the most likely


101. See Dan L. Burk, Misappropriation of Trade Secrets in Biotechnology Licensing, 4 ALB. L.J. SCI. & TECH. 121, 128 (1994) (describing the utility of trade secrecy for the sale of chemical products for which the process remains a secret); see also Marc T. Kretschmer, Copyright Protection for Software Architecture: Just Say No!, 1988 Colum. Bus. L. Rev. 823 (advocating the protection of software architecture by trade secret law).


103. The common law doctrine of sovereign immunity in the United States developed from the English tenant of sovereign immunity, premised on the maxim that "the King can do no wrong." Id. at 7. In its present form, the doctrine prevents suits against the federal government and its agencies unless the government has consented to the action. Id. at 151-53.
source of jurisdiction over a claim against the government for this misappropriation is under the Fifth Amendment.\textsuperscript{104} Although such an action would not arise under specific statutory authority as in copyright or patent suits against the government, the forum is the same, in the Court of Federal Claims, with appeals to the Court of Appeals for the Federal Circuit.\textsuperscript{105} Thus, while trade secret law generally involves issues of law from various states, any Fifth Amendment claim against the federal government for the disclosure of trade secrets would rely upon a single body of federal law, although the Court of Federal Claims would most likely rely upon the trade secret law of the state where the express or implied contract arose between the contracting entity and the government.\textsuperscript{106}

5. Mask Works

A nontraditional form of intellectual property protection includes the \textit{sui generis} federal statutory protection afforded to “mask works” fixed in semiconductor chips under the


Semiconductor Chip Protection Act of 1984 ("SCPA").° A mask work is "a series of 'masks' whereby, using photographic depositing and etching techniques, layers of metallic, insulating, and semiconductor material are deposited in the desired pattern on a wafer of silicon. This set of masks is called a 'mask work,' and is part of the semiconductor chip product." The SCPA guarantees specific protection for these works and provides definite avenues of redress in case of infringement.° If the Government infringes a mask work, or requires its infringement through federal procurement, the remedy is not under the terms of the SCPA but, like all claims against the government, the sole remedy is suit in the United States Court of Federal Claims, with appeal to the Court of Appeals for the Federal Circuit.°

B. A Nontraditional Form of Intellectual Property Protection

The rapid creation of new innovations in IS and IT has led to problems in ensuring complete legal protection for these new technologies.°° In the realm of computer software, as depicted in Figure 1, the traditional forms of intellectual property provide three types of protection, either a patent, copyright, and/or trade secret to the technology.°°° Thus, if a

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°°° 109. To obtain a mask work, the owner must register the work with the Copyright Office within two years of the date of commercial use, 17 U.S.C. § 908(a), which gives rise to a mask work right for a term of ten years. Id. § 904. A mask work right entails three exclusive rights: the right to reproduce the work, the distribution right, and the right to prohibit contributory infringement. Id. § 905. Remedies for mask works infringement include actual damages or statutory damages as well as attorney fees and costs. Id. § 911 (a), (e), (f). For an overview of the Act, see generally Robert W. Kastenmeier & Michael J. Remington, The Semiconductor Chip Protection Act of 1984 and Its Lessons: A Swamp or Firm Ground?, 70 MINN. L. REV. 417, 437-38 (1985).


°°° 112. A company may also seek a trademark, but except for trade dress protection, the trademark does not generally pertain to the content or substance of the computer software. DICK H. BRANDON & SIDNEY SEGELSTEIN, DATA PROCESSING CONTRACTS: STRUCTURE, CONTENTS, & NEGOTIATION 56-57 (1976).
company develops a computer software product, the company may seek a patent, if the software qualifies as a patentable invention; a copyright, if the company wishes to protect that single expression of the software; and/or a trade secret, if the company maintains the software as proprietary information. Generally, one or more of these options are available for computer software, but in each case, the form of intellectual property protection only applies to a specific feature—if a patent, the invention (not the idea) or if a copyright, the expression (again not the idea). In addition, for many components of the computer software, most predominately the user interface, there is only limited intellectual property protection.

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113. Daniel C. Munson, The Patent-Trade Secret Decision: An Industrial Perspective, 56 J. PAT. & TRADEMARK OFF. SOCY 689, 692 (1996). The types of intellectual property may overlap, as a patent to an invention would not prohibit a copyright to the expression of a computer program, or the copyright of a software product would not prohibit a trade secret to a source code algorithm only represented in the computer software as object code.

114. Id.

115. The uncertainty surrounding the scope of copyright protection for computer software, and thus the copyrightability of the user interface, has led to much scholarship on whether copyright law is an appropriate source of intellectual property law. Compare Lionel M. Lavenue, Lotus Corp. v. Borland Int’l: Copyrightability of the User Interface in Computer Software in the United States and in the International Realm, 7 AM. U. INT’L L. & POL’Y 289 (1992)
The legal protection for IS and IT presents an even more difficult prospect in terms of traditional intellectual protection due to the nature of this technology. Almost all IS and IT rely on some sort of data compilation, or database. For example, the users of the Internet frequently wish to locate the e-mail addresses of friends, family, or business associates but do not have access to the specialized Internet address. In response to this need, several entrepreneurs created Internet sites with the capability to assist users in locating e-mail addresses, including BigBook, Four, and WhoWhere. In the development of each of these sites, the makers of these databases expended time, effort, and money to collect and assemble the largest possible compilation of e-mail addresses. Nevertheless, despite the novelty and work behind these efforts, these Internet sites represent one type of information system for which the traditional intellectual property laws prove inept because there would be no intellectual property protection for the content of the database. In this example, a patent would not be an option in the absence of an inven-


117. Id.
119. In practice, these Internet sites protect their work product in their databases by restricting access to their data compilations based on specific search criteria. Nevertheless, hypothetically, with numerous searches, one could exercise the entire content of the database, and because no intellectual property rights allow protection for the database content, such an action would not be preventable.
tion, a copyright may exist for the computer software that controls the sites but not for the content of the compilation of e-mail addresses, and because the data is made available to the public over the Internet, there would be no capability to claim a trade secret in the information.\footnote{120}

Due to the difficulties involved in protecting databases, most companies relegate the protection of IS and IT to the trade secrecy laws.\footnote{121} As defined above, a trade secret may include almost anything of importance, from an industrial activity to corporate database information,\footnote{122} and is protected simply by maintaining the confidentiality of the thing of importance.\footnote{123} For example, one of the oldest trade secrets in existence is the formula for Coca-Cola.\footnote{124} Known only to two persons at the company, the Coca-Cola Corporation has successfully maintained this trade secret for more than 100 years.\footnote{125} Yet, in contrast to a specific formula, the issues that arise dealing with IS and IT frequently deal with data, and to profit from data, one must generally allow public access and use of the information.\footnote{126} However, the public use of trade secrets threatens its secrecy status and thus this form of legal

\begin{footnotes}
\footnotetext[120]{120. Information systems and information technology frequently comprise data that may be classified neither as an invention or as a creative writing. Jane C. Ginsburg, \textit{Creation and Commercial Value: Copyright Protection of Works of Information}, 90 COLUM. L. REV. 1865, 1866 (1990). The data merely represents data arrangements, compilations, or organizations, for which the courts have generally not extended intellectual property protection. \textit{Id.}}
\footnotetext[122]{122. MILGRIM, \textit{supra} note 44, § 1.01, at 1-4 n.2. A trade secret in industrial activities may include the typical secret processes, machines, know-how, and industrial ideas and the atypical nonindustrial ideas, such as advertising schemes, plots for novels, or themes for computer programs. \textit{Id.} at 12. A trade secret may also include simple information, such as customer lists. \textit{Id.} at 13.}
\footnotetext[123]{123. \textit{Id.} at 175. Notably, one cannot simply classify a thing of importance as a secret and thereby render the item a trade secret. \textit{Id.} To obtain and maintain a trade secret, there must be clear efforts made to protect the confidentiality of the thing of importance. \textit{Id.} at 179. If the proper precautions are not taken, then a disclosure is said to have occurred, the confidentiality is lost, and no trade secret ensues. MILGRIM, \textit{supra} note 44, § 1.01, at 179.}
\footnotetext[125]{125. \textit{Id.} The measures taken to protect the formula for Coca-Cola include keeping the identity of these persons secret and prohibiting them from flying together in the same airplane. \textit{Id.} See generally MARK PENDERGRAST, \textit{FOR GOD, COUNTRY, AND COCA-COLA: THE UNAUTHORIZED HISTORY OF THE GREAT AMERICAN SOFT DRINK AND THE COMPANY THAT MAKES IT} (1993).}
\footnotetext[126]{126. Nelson, \textit{supra} note 121, at 2675-76.}}
In order to account for the public access and use of proprietary information, but still to maintain the trade secret, trade secrecy status is generally secured by contractual relationships. For example, if company A maintains a trade secret in data, and sells computer software containing the data to company B, in order to secure the trade secret, company A would have to require company B to agree by contract to preserve the secrecy of the data. Of course, in some cases, such as the Internet example above, a company simply cannot maintain the secrecy of information through contractual conditions. Thus, at least in the commercial realm, there are only limited means to protect rights in mere data by trade secret, and for information systems and technology particularly, these means are frequently unavailable due to the necessity of public access and use.

In government procurement law, in contrast, the government has established particularized rules governing computer software specifically as well as other technical data generally, two areas encompassing all forms of information protection. In order to account for the public access and use of proprietary information, but still to maintain the trade secret, trade secrecy status is generally secured by contractual relationships. For example, if company A maintains a trade secret in data, and sells computer software containing the data to company B, in order to secure the trade secret, company A would have to require company B to agree by contract to preserve the secrecy of the data. Of course, in some cases, such as the Internet example above, a company simply cannot maintain the secrecy of information through contractual conditions. Thus, at least in the commercial realm, there are only limited means to protect rights in mere data by trade secret, and for information systems and technology particularly, these means are frequently unavailable due to the necessity of public access and use.

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systems and information technology. These rules—the data rights regulations—define the boundaries of the government's right to access and utilize the computer software and technical data of those who contract with the government ("contractors"). In addition, these rules also describe the capability and requirements for these contractors to maintain rights in such data against the government. In contrast to the traditional forms of intellectual property, the data rights regulations create an entirely separate and unique form of protection for the intellectual property, albeit a form only available under the terms of government contracts. Yet, if applicable, the data rights regulations define the government's and the contractor's rights to all data depending neither on patent, copyright, nor trade secret status.

II. SYMPTOM: NO RECOGNITION OF TECHNICAL DATA RIGHTS FOR THE INDICIA OF INFORMATION SYSTEMS AND TECHNOLOGY FOR COMMERCIAL BUSINESS TRANSACTIONS

In executive circles, it is now fashionable to argue that a company's real assets are its databases, for ultimately the information a company holds about its products and its customers are worth more than any mere production facilities.

Databases are not merely important to the government and its contractors. The general public has recently faced the importance of databases due in large part to the role of technology allowing the ready accumulation and dissemination of personal information. For example, in late 1996, the

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131. Id.
132. Id.
133. See Ralph C. Nash, Copyright of Computer Programs: How Much Protection is Possible?, 6 NASH & CIBINIC REP. ¶ 65, at 168-69 (1992) (comparing the form of intellectual property protection available to a contractor as against the government).
135. Almost all known scientific and technical information is made available through 2800 on-line databases. Martha E. Williams, Electronic Databases, SCI., Apr. 26, 1985, at 445.
136. Charles W. Joiner, Personal Privacy and Information Technology, in REPORT ON THE NATIONAL SYMPOSIUM ON PERSONAL PRIVACY AND INFORMATION TECHNOLOGY 2, 2 (1981); see generally AUTHOR R. MILLER, THE
online database company LEXIS/NEXIS offered a computer locating service to locate parties in lawsuits, called P-TRAK.\(^{137}\) The service inspired much debate because it allowed access to very personal information, not only names, addresses, and phone numbers but also social security numbers and maiden names.\(^{138}\) Similar to the issues involving credit reports, these types of data compilations brought the importance of databases to the public eye.\(^{139}\)

The business community has long realized the critical role of databases, while the general public has not.\(^{140}\) The recent proliferation of high technology has emphasized the need for the legal protection of databases and other technical data in common commercial business transactions.\(^{141}\) For example, commercial business transactions, similar to transactions with the government, require legal protection for the technical data incumbent with the products or services provided by the business.\(^{142}\) Typically, this protection has occurred through contractual negotiations and agreement, generally in the form of license agreements.\(^{143}\) However, the progress of technology has made contractual restrictions incapable of protecting many of the modern products and services that rely on computer software, especially IS and IT.\(^ {144}\)

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\(^{137}\) Look For, CONSUMERS DIGEST, Jan./Feb. 1997, at 12.

\(^{138}\) Id. Indeed, the uproar over the scope of information available over P-TRAK led several Senators to call for new laws to ensure privacy against these forms of data compilations. Senators Seek FTC Probe of Computer Data Bases, REUTERS, Oct. 9, 1996, available in the Pointcast Network.

\(^{139}\) Ironically, much of the same information available on P-Trak is currently available to anyone with a computer and modem via the Internet. Due to concerns regarding this type of data, the United Kingdom has long provided strict limitations on the use and dissemination of personal data in databases, under the Data Protection Act of 1984. Data Protection Act, 1984, Ch. 35 (Eng.). RICHARD SIZER & PHILIP NEWMAN, THE DATA PROTECTION ACT: A PRACTICAL GUIDE 35-37 (1984). Even the European Community has recently considered greater protection for private information due to the availability of access created by electronic databases. EC Proposal Addresses Protection of Personal Data, 4 No. 3 J. PROPRIETARY RTS. 28, 28 (1992).


\(^{141}\) Id.

\(^{142}\) Id.


\(^{144}\) See infra Part III.
and copyright law has been unable to fill the void.\textsuperscript{145}

Thus, the most evident area of technology with inadequate legal protection is databases. Examples of the legal ineptitude of traditional intellectual property in dealing with databases can be found both in recent domestic and international case law. One example in the United States deals with rights in technical data for a database to a telephone directory. In \textit{ProCD, Inc. v. Zeidenberg},\textsuperscript{146} ProCD had invested millions of dollars to compile a nationwide directory of 95 million business and residential telephone listings and marketed a product on CD-ROM allowing searches on this database.\textsuperscript{147} Matthew Zeidenberg purchased several of the CD-ROMs and provided access to them via the Internet.\textsuperscript{148} ProCD sued Zeidenberg for copyright infringement, but citing \textit{Feist Publications, Co. v. Rural Telephone Service Co.}, the district court found no infringement because Zeidenberg had only copied the content of the data compilation, for which copyright law provides no redress.\textsuperscript{149} Although the Seventh Circuit Court of Appeals later reversed this ruling on other grounds, the Seventh Circuit affirmed the district court's ruling that no copyright protection extends to the content of databases.\textsuperscript{150}

The problems with the legal protection for technical data, however, are not isolated to the United States but also extend to other countries, particularly countries in the European Community. The United Kingdom and Ireland present

\begin{itemize}
\item \textsuperscript{145} Ginsburg, \textit{supra} note 120, at 1918-22.
\item \textsuperscript{146} 908 F. Supp. 640 (W.D. Wis. 1996).
\item \textsuperscript{147} \textit{Id}. The product, Select Phone, was sold at retail with a common shrink-wrap license agreement. \textit{Id}. at 650.
\item \textsuperscript{148} \textit{Id}. at 645. Zeidenberg copied the contents of the Select Phone CD-ROM onto his hard drive, created his own search program, and provided the information free of charge over the Internet. \textit{Id}. at 646. The web site with this information received approximately 20,000 hits a day. \textit{Id}.
\item \textsuperscript{149} \textit{ProCD, Inc.}, 908 F. Supp. at 646. The court also considered whether copying the entire Select Phone CD to a hard drive constituted copyright infringement but ruled to the negative pursuant to the right to make copies of computer software under 17 U.S.C. § 117. \textit{Id}.
\item \textsuperscript{150} 86 F.3d 1447, 1449 (7th Cir. 1996). The bulwark of the court's decision dealt with shrinkwrap licenses, with the court surprisingly finding the licenses enforceable. \textit{Id}. However, in the second paragraph of the opinion, the court recognized: "[w]e may assume that this database cannot be copyrighted, although it is more complex, contains more information (nine-digit zip codes and census industrial codes), is organized differently, and therefore is more original than the single alphabetical directory at issue in \textit{Feist Publications, Co. v. Rural Telephone Service Co.}" \textit{Id} (citation omitted).
\end{itemize}
such an example where national copyright law extends to databases. The copyright laws of these countries extend to any work requiring the exposition of time, money, or effort, regardless of the originality of the work. The recent Magill case presents an illustration. The three largest television broadcasters in the United Kingdom and Ireland maintained a copyright to the listings of programs appearing on each respective television network and publish separate television listings. When an Irish publishing entity appropriated this information for a combined television directory, the European Court of Justice ("ECJ") ruled that the Irish publisher was allowed to use the copyrighted information. In reaching its hold, the ECJ cited the concept of peut donner lieu a un comportement abusif, which essentially means that where a market exists unfulfilled, a dominate actor (i.e. the television broadcasters) may not abuse its legal monopolies by refusing a market need, even if fulfilled by another (i.e. the Irish publisher). Thus, in contrast to American law, British and Irish law as applied by the ECJ provides legal protection through copyright to technical data.

Yet, the laws of the various member-states of the European Community are by no means uniform. For instance, a series of decisions in Germany, also dealing with the rights that a company maintains over its telephone directories, presents one of the most striking examples of the means utilized by competitors to gain access to rights in technical data in the commercial realm. In the first case, the names, ad-

152. Id.
155. Id. The three television broadcasters included concerns from both Ireland and the United Kingdom. See Magill, [1995] 4 C.M.L.R. 718. As a result, because a conflict among member-states of the European Community, the ECJ resolves this dispute. DOMINIK LASOK & P.A. STONE, CONFLICT OF LAWS IN THE EUROPEAN COMMUNITY 7 (1987).
156. Id.
158. For discussion of these German cases, see Gerhard Schricker, Urheber-
addresses, and telephone numbers from a telephone book were copied electronically from a CD-ROM for a competing product, and one German court of appeals (Hamburg) held that this constituted a violation of unfair competition law. In the second case, the same sort of data was copied by scanning, but the German court also found a violation of unfair competition. Finally, in a third case, the same data was copied manually, but the German court in this situation found no violation. Thus, in contrast to Irish law, which provides copyright protection for technical data, German law does not extend copyright law to nonoriginal works, but nevertheless extends unfair competition law for similar protection of technical data.

The contrast in legal protection for data compilations under American, Irish, and German law clearly presents the current problem facing commercial transactions involving data compilations. While some countries have already long recognized special protections for the technical data that arise in high technology areas, most countries do not. Those countries that do not recognize these special protections face a competitive disadvantage with those countries that do. This is a symptom of a crisis facing the current intellectual property scheme in dealing with databases, a symptom that has already garnered several possible solutions (or diagnoses).


159. Id. at 5-6. Another German court of appeals (Frankfurt), however, had earlier found such copying allowable, but then yet another German court of appeals (Karstadt) found the same action a violation of unfair competition. Id.

160. Id. at 8-9.

161. Jens-L. Gaster, Address at the Deutsche-Amerikanische Juristen-Vereinigung, Cologne, Germany (Jan. 16, 1997). In this later case, the entire contents of the database were copied by hand in China. Id.; see also Karstadt, scheißt D-Info 3.0 Raus, CHIP, Dec. 1996, at 4 (describing the ruling of the German Supreme Court ordering that the CD's that violated unfair competition laws may no longer be sold).

162. See infra notes 151-156 and accompanying text.

163. Rainer Moufang, Datenbankverträge, in URHEBERVERTRAGSRECHT 571, 576-80 (Friedrich-Karl Beier et al. eds., 1995).

III. DIAGNOSIS: CREATION OF RIGHTS FOR THE TECHNICAL DATA IN INFORMATION SYSTEMS AND TECHNOLOGY FOR COMMERCIAL BUSINESS TRANSACTIONS

[Under the Copyright Act of 1976], [t]he term 'literary works' . . . includes catalogs, directories, and similar factual, reference, or instructional works and compilations of data. It also includes computer data bases . . . .

Internationally, essentially every developed country extends some form of intellectual property protection to computer software. While many nations extend both patent and copyright laws to computer software, the protection of databases falls solely within the realm of copyright law. With the exception of countries such as the United Kingdom and Ireland, the copyright laws of most of the developed countries have not traditionally extended so far as to provide protection for the content of databases or similar forms of data compilations. If any protection exists at all, the copyright only applies to the originality embodied in the work by the author and not to the compilation of information. For example, the Microsoft Corporation may copyright the arrangement, selection and coordination of data in its software encyclopedia, EncartaÔ, but Microsoft may not copyright the fact that George Bush was the 44th President of the United States. In almost every country that denies copyright protection for the content of databases, the distinction between the copyrightability of computer software and databases results from the general rule that copyright laws do not protect ideas or facts. Based on this distinction, of the two largest producers of databases in the world—the United States and the European Community—neither presently extends copy-


167. Id. Because a patent only extends to machines, manufacture, processes, or compositions of matter at least in the United States, the factual content of databases do not fall within the subject matter of patent law. DONALD S. CHISUM, PATENTS § 101 (1990). Therefore, copyright protection is the only source of intellectual property protection for databases.


169. Id.

170. Id.
right to the content of databases.171

A. Database Rights: The American Approach

Empowered by the Constitution to “promote the Progress of Science and useful Arts,”172 the ultimate object and policy behind copyright law in the United States is the stimulation of artistic creativity for the general public good.173 A copyright thus seeks to encourage authors to generate new ideas and similarly to share those ideas with the public.174 The immediate result of the copyright laws provides the author the means by which he or she may reap a monetary or existential reward for the expression embodied in the work.175 While copyright protection allows the author to control the work, the threat exists that the public may be deprived of a work if the control extends beyond the particular expression to the ideas within the work.176 Accordingly, the judicial interpretations of the copyright law have traditionally counter-

172. U.S. CONST. art. I, § 8, cl. 8. Originally, due to the wording of the Constitution, scholars believed that the sole purpose of the copyright law was the promotion of “[s]cience... in the sense of general knowledge rather than the modern sense of physical or biological science.” 1 MELVILLE B. NIMMER & DAVID NIMMER, NIMMER ON COPYRIGHT § 1.03 n.1 (1990) (quoting Williams & Wilkins Co. v. United States, 172 U.S.P.Q. 670, 683 (Comm’r Ct. Cl. 1972)). However, the Supreme Court has recently suggested a broader interpretation: “The primary objective of copyright is... to Promote the Progress of Science and useful Arts.” Feist Publications, Co. v. Rural Tel. Serv. Co., 499 U.S. 340, 349 (1991).
173. 3 MELVILLE NIMMER, NIMMER ON COPYRIGHT § 13.03[A] (1989); see Offshore Logistics Inc. v. Tallentire, 477 U.S. 207, 221 (1986) (describing the object and policy of copyright law); see also Harper & Row Publs., Inc. v. Nation Enters., 471 U.S. 539, 546 (1985) (specifying that copyright seeks not to reward authors but to serve the public welfare by encouraging new and innovative ideas); Twentieth Century Music Corp. v. Aiken, 422 U.S. 151, 156 (1975) (explaining that “[t]he sole interest of the United States and the primary object in conferring the monopoly [of copyright] lie in the general benefits derived by the public from the labors of authors”).
175. Id.
176. The best illustration of an idea is the scenes a faire, or those “incidents, characters, or settings which are as a practical matter indispensable... in the treatment of a given topic.” Atari, Inc. v. North Am. Philips Consumer Elecs. Corp., 672 F.2d 607, 616 (7th Cir.), cert. denied, 459 U.S. 880 (1982). Because “it is virtually impossible to write about a particular historical era or fictional theme without employing certain ‘stock’ or standard literary devices... scenes a faire are not copyrightable as a matter of law.” Hoehling v. Universal City Studios, Inc., 618 F.2d 972, 979 (2d Cir.), cert. denied, 449 U.S. 841 (1980).
balanced these competing interests, the benefit for the public welfare and the reward to the author, by reference to the distinction between a noncopyrightable idea and copyrightable expression.\textsuperscript{177}

In \textit{Baker v. Selden},\textsuperscript{178} the United States Supreme Court first clearly established the idea/expression distinction. In the 1879 case, Selden had received a copyright on the book, \textit{Selden's Condensed Ledger, or Bookkeeping Simplified}, which explained a new system of accounting.\textsuperscript{179} When Baker sought to utilize the accounting system, Selden sued for copyright infringement, arguing that the copyright extended to the accounting methodology.\textsuperscript{180} The Supreme Court found no such infringement, and ruled that the accounting system comprised a noncopyrightable idea.\textsuperscript{181} Ever since this ruling, \textit{Baker v. Selden} has long stood for the proposition that copyright protects only the expression of the work, not the idea.\textsuperscript{182}

The idea/expression distinction also represents the core issue in ascertaining the copyrightability of databases and similar data compilations.\textsuperscript{183} "[I]n no case does copyright pro-

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\item \textsuperscript{177} Nimmer, supra note 173, § 13.03[A]; see also R. Denicola, Copyright in Collections of Facts: A Theory for the Protection of Nonfiction Literary Works, 81 Colum. L. Rev. 516 (1981).
\item 101 U.S. 99 (1879).
\item Id. at 100. The book also contained special blank forms that were necessary for practicing the accounting system. \textit{Id}.
\item Id. at 101.
\item Id. at 107. The legislative history to the 1976 Act explains: "[t]he two fundamental criteria of copyright protection [are] originality and fixation in tangible form . . . The phrase 'original works of authorship,' which is purposefully left undefined, is intended to incorporate without change the standard of originality established by the courts under the present copyright statute." H.R. Rep. No. 9-1476, at 51 (1976).
\item Unknown in the Copyright Law of 1879, the Copyright Act of 1976 specifically recites the idea/expression distinction. See 17 U.S.C. § 102(b) (1994) (prohibiting the copyrightability of "any idea, procedure, process, system, method of operation, concept, principle, or discovery").
\item Jack B. Hicks, Note, Copyright and Computer Databases: Is Traditional Compilation Law Adequate?, 65 Tex. L. Rev. 993 (1987). A related concept to the idea/expression dichotomy is the concept of merger, which prohibits the copyright of any expression where there are only a limited number of ways to express the idea. See Kregos v. Associated Press, 937 F.2d 700, 705 (2d Cir. 1991) (pointing out that "even expression is not protected in those instances where there is only one or so few ways of expressing an idea that protection of the expression would effectively accord protection of the idea itself"). Thus, the doctrine prohibits the copyright of works in which the work and the idea are inseparable. See Baker v. Selden, 101 U.S. 99, 101-02 (1879) (holding that the new system of accounting "merged" with the blank forms and thus rendered the form noncopyrightable). Without the merger doctrine, copyright would prohibit
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tection for an original work of authorship extend to any idea, procedure, process, system, method of operation, concept, principle, or discovery, regardless of the form in which it is described, explained, illustrated, or embodied in such work.\textsuperscript{184} Accordingly, although the copyright law specifically provides for the copyrightability of databases, no copyright is generally allowed under the idea/expression distinction because most databases comprise only factual data.\textsuperscript{185} The only manner of copyright protection for databases is as a compilation of data.\textsuperscript{186} Yet, because the copyright statute specifically limits the scope of coverage for data compilations to an author's original expressions, as limited to "material contributed by the author" and "does not imply any exclusive right in the preexisting material,"\textsuperscript{187} even as a data compilation, the copyright protection available to the selection, coordination, and arrangement would still not entitle the author to protect the content of the database due to the lack of originality.\textsuperscript{188}

The beginning point for any discussion of the originality requirement for the copyrightability of databases must begin with the 1991 Supreme Court case of \textit{Feist Publications, Co. v. Rural Telephone Service Co.}\textsuperscript{189} In this case, a state regulation required that the local telephone provider, the Rural Telephone Service Company ("Rural Telephone"), published an annual white page directory of all subscribers.\textsuperscript{190} Feist

\textsuperscript{184} 17 U.S.C. § 102(b) (1994).
\textsuperscript{185} Hicks, \textit{supra} note 183, at 998.
\textsuperscript{186} 17 U.S.C. § 101 (1994). Section 101 of the Copyright Act describes the copyrightability of a compilation, defined as "a work formed by the collection and assembling of preexisting materials or of data that are selected, coordinated, or arranged in such a way that the resulting work as a whole constitutes an original work of authorship." \textit{Id.}
\textsuperscript{187} 17 U.S.C. § 103(b) (1994). Indeed, the legislative history specifies: "the criteria of copyrightable subject matter stated in section 102 apply with full force to works . . . containing preexisting material." H.R. REP. NO. 94-1476, at 57 (1976).
\textsuperscript{188} Consider also the copyright requirement for a "collective work." 17 U.S.C. § 101 (1994). The statute here defines the collection as including "separate and independent works." Thus, again, this would not entitle the author to protect the content of the database unless the content were indeed comprised of independent works.
\textsuperscript{190} \textit{Id.} at 342. Rural Telephone was a public utility that provided telephone service to certain areas of Kansas. \textit{Id.} Kansas state law required that Rural
Publication ("Feist") requested permission from the telephone provider to use the name, towns, and telephone numbers for a competing directory encompassing a larger geographic area. When Rural Telephone refused, Feist used the information anyway, and Rural Telephone sued Feist for copyright infringement. Feist argued that Rural Telephone's directory, that is, the database, comprising the names, towns, and telephone numbers was not original subject matter but mere facts, and the Supreme Court agreed. The Court explained that while facts are not copyrightable, compilations of facts may be copyrightable provided they have sufficient originality, describing the requisite level of originality as "extremely low." Yet, finding that the listing of names, Telephone issue a telephone directory containing a listing of the names, towns, and telephone numbers of its customers. Id.

191. Id. at 343. Feist attempted to purchase a license for the information, but Rural Telephone refused. Id. All of the other ten telephone companies agreed to license the information for use in Feist's area telephone directory. Feist, 499 U.S. at 343.

192. Id. at 343-44. Feist copied the 1309 listing from Rural Telephone's directory, including four fictitious listings that Rural Telephone had included in the directory to detect copying. Id.

193. Id. at 363. The district court determined that Rural Telephone's directory was copyrightable, and the Court of Appeals for the Tenth Circuit affirmed. Id. at 344. The Supreme Court reversed that ruling, for "[t]hat there can be no valid copyright in facts is universally understood. The most fundamental axiom of copyright law is that '[n]o author may copyright his ideas or facts he narrates." Id. at 344-45.

194. Id. at 345. "The sine qua non of copyright is originality. To qualify for copyright protection, a work must be original to the author. Original, as the term is used in copyright, means only that the work was independently created by the author (as opposed to copied from other works)." Id. Thus, "facts contained in existing works may be freely copied because copyright protects only the elements that owe their origin to the compiler—the selection, coordination, and arrangement of facts." Id.

195. Feist Publications, Co., 499 U.S. at 345 (1991). The Court distinguished between mere facts and compilations of facts (or databases) as follows: [O]ne who discovers a fact is not its "maker" or "originator." "The discoverer merely finds and records." Census-takers, for example, do not "create" the population figures that emerge from their efforts; in a sense, they copy these figures from the world around them. Census data therefore do not trigger copyright because these data are not "original" in the constitutional sense. The same is true of all facts, scientific, historical, biographical, and news of the day. "[T]hey may not be copyrighted and are part of the public domain available to every person."

Factual compilations, on the other hand, may 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. These choices as to selection and arrangement, so long as they are made independently
towns, and telephone numbers was insufficient to meet even a "minimal degree of creativity," the Court determined that the subject matter of the suit was not copyrightable and thus that no copyright infringement had occurred.¹⁹⁶

In *Feist*, the Supreme Court also specifically rejected the "sweat-of-the-brow" argument.¹⁹⁷ The "sweat of the brow" concept or "industrious collection" concept, originated in a 1922 ruling of the Second Circuit Court of Appeals:

The right to copyright a book upon which one has expended labor in its preparation does not depend upon whether the materials which he has collected consist or not of matters which are publici juris, or whether such materials show literary skill or originality, either in thought or in language, or anything more than industrious collection. The man who goes through the streets of a town and puts down the names of each of the inhabitants, with their occupations and their street number, acquires material of which he is the author.¹⁹⁸

This argument postulated that, if an author expends sufficient time, money, or effort to produce a work, the simple exertion should qualify for a copyright, independent of the originality of the work.¹⁹⁹ However, in *Feist*, the Supreme

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¹⁹⁶ *Id.* at 347-48 (citations omitted). In short, the originality requirement for the copyrightability of a database requires some degree of selection, coordination, and arrangement of the facts.


Court specifically rejected this concept:

To qualify for copyright protection, a work must be original to the author. Original, as the term is used in copyright, means only that the work was independently created by the author (as opposed to copied from other works), and that it possess at least some minimal degree of creativity. To be sure, the requisite level of creativity is extremely low; even a slight amount will suffice.\(^{200}\)

Since *Feist* rejected this "sweat-of-the-brow" argument, the courts have uniformly rejected any attempts to extend copyright protection to the mere factual content of databases, absent a copyrightable (that is, original) arrangement, selection, or coordination.\(^{201}\)

The only exception to *Feist* that allows legal protection for the content of databases exists in government procurement, whereby the technical data right exception describes a special case.\(^{202}\) Technical data rights do not exactly authorize special protections for a contractor to protect a database but only describe when the government may and may not require access to such information. For example, in contracts subject to the Federal Acquisition Register ("FAR"), the technical data rights regulations specifically provide that the contractor withhold a database from the government unless required to be delivered under the contract.\(^{203}\) Indeed, the FAR specifically recognizes the importance of databases.\(^{204}\) Perhaps,


\(^{201}\) Compare Bellsouth Adver. & Publ'g Corp. v. Donnelley Info. Publ'g., 999 F.2d 1436, 1443 (11th Cir. 1993) (finding the yellow pages uncopyrightable) with CCC Info. Servs. Inc. v. MacLean Hunter Mkt. Report Inc., 44 F.3d 61 (2d Cir. 1994) (finding a database of used vehicles copyrightable due to the originality incumbent in the subjective price valuations), and Kregos v. Associated Press, 937 F.2d 700 (2d Cir. 1991) (finding copyrightable the selection of baseball pitching statistics).

\(^{202}\) One other exception may include state misappropriation and unfair competition laws. However, most scholars believe that any attempt states make to enact special protections for databases would fail under the preemption doctrine. See 17 U.S.C. § 301 (1994) (declaring the preemption of "all legal or equitable rights that are equivalent to any of the exclusive rights within the general scope of copyright"); see generally Henry Bech, *Copyright Protection for Compilations After Feist*, 8 COMPUTER LAW. 1, 7 n.3 (1991); David E. Shipley & Jeffrey S. Hay, *Protecting Research: Copyright, Common-Law Alternatives, and Federal Preemption*, 63 N.C.L. REV. 125, 139-41 (1984).


\(^{204}\) *Id.* The FAR specifically designates the status of databases: "[l]imited rights data that are formatted as a computer data base for delivery to the Gov-
such a similar recognition of the importance of databases has lead the European Community to adopt a *sui generis* form of intellectual property protection for databases.

B. **Database Rights: The European Approach**

The European Community ("EC") has not traditionally recognized intellectual property protection for the content of databases. Further, few of the member-states recognized special legal protection for databases in copyright law under a "sweat-of-the-brow" theory. Even for those member-states that have granted various forms of legal protection for databases, including the United Kingdom and Germany, the schemes for protecting databases rely upon either copyright or unfair competition, and not upon an independent database right.

The first European effort to provide legal protection to databases was initiated by the Council of Europe ("COE"), a body independent of the EC. In 1991, the COE issued the "Convention on Data Protection," which called on member-nations to introduce data protection legislation. As these member-nations began to introduce statutory schemes for da-

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208. Pearson, supra note 206, at 21. The Council of Europe was formed after World War II to promote unity, democracy, and human rights in Europe. Id.

209. Id. Some countries, such as the United Kingdom, already had legislation dealing with databases. See Pearson, supra note 206, at 21 (citing 1984 Data Protection Act in the United Kingdom). Yet, no country had a legal structure for protecting the content of databases. Id.
DATABASE RIGHTS

tabase protection, however, the EC determined that this dis-
harmonious methodology for protecting databases was incons-
tistent with the goal of national economic integration.210 Ac-
cordingly, from 1988 to 1991, the European Community pro-
offered several proposals for the creation of a European da-
base protection scheme.

Under the authority of the European Commission,211 the
first effort to protect databases per se within the European
Community began in the summer of 1988 with the publica-
tion of the “Green Paper on Copyright and the Challenge of
Technology.”212 After various hearings and studies, another
draft of these recommendations was circulated, called the
“Follow-Up to the Green Paper.”213 Although not a direct re-
sult, the recommendations of these papers led to a draft of a
tion of Databases.”214 After the European Parliament made
numerous amendments to the draft in early 1992,215 and fol-
lowing subsequent modifications by the European Com-
mision, both the Presidents of the Council of Ministers and the
European Parliament approved the draft on July 24, 1995.216

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210. Christopher Millard, Comments on the Proposed ED Database Directive,

211. Located in Brussels, Belgium, the European Commission comprises the
17 commissioners who represent the seventeen member-states of the EC.
EUROPEAN COMMUNITIES, THE INSTITUTIONS OF THE EUROPEAN COMMUNITIES
7 (1989). The respective member-states appoint a commissioner to the Euro-
pean Commission to act independently and to represent the best interests of
the European Community. Id. The responsibilities of the commissioners in-
clude submitting proposals to the Council of Ministers. Id. at 7-8.

212. Copyright and the Challenge of Technology—Copyright Issues Requir-
ing Immediate Action: Green Paper from the Commission of the European
Communities, COM(88)172 final at 205-16. The Green Paper proposed a new
data rights scheme based on the “Scandinavian catalog rules,” laws which pro-
vided special intellectual property protection to catalogs in the Nordic coun-
tries. Proposed Directive Would Harmonize Community Protection for Data
Bases, 6 WORLD INTELL. PROP. REP. 63, 63 (1992).

213. COM(91)584 final. Three directives resulted from the Follow-Up to the
Programs; (2) the Council Directive on Rental Right and Lending Right and on
certain Rights relating to Copyright in the Field of Intellectual Property; and


215. 1993 O.J. (C 308) 32, 34.

216. The Council of Ministers consists of the various ministers of the EC
member-states. Europe, Our Future: The Institutions of the European Com-
munities, Eur. File No. 16/89, at 5-6 (1990). The Council makes the policy deci-
sions for the Community, and the ministers who participate depend upon the
issue upon consideration. Id. Of the Council of Ministers, the European Coun-
Later, the "European Database Directive" in its present form was enacted on March 11, 1996.\(^{217}\)

The European Database Directive as enacted delineated two intellectual property concepts.\(^{218}\) First, an author may be entitled to a copyright for the organization, structure, and arrangement of a database.\(^{219}\) Second, in cases where there would be no entitlement to a copyright, the maker of a database could also be entitled to a new *sui generis* right, or a "database right."\(^{220}\) This right would permit a creator/author to protect his or her noncopyrightable intellectual/creation. The Directive makes a clear distinction between: (1) the contents of a database, which may be protected by the *sui generis* database right, and (2) the organization of the database, which may be protected by copyright.\(^{221}\) Under this scheme, a copyright may not extend to the content of the database, and the database right may not extend to the database's organization.\(^{222}\)

The European Database Directive for the copyrightability of databases applies similar, yet broader, standards as those applied for copyrightability in the United States.\(^{223}\) Under the Directive, a copyright is allowed for any database that is "the author's own intellectual creation." Specifically, the organization, selection, and arrangement of the database,


\(^{218}\) Jens-L. Gaster, *The New EU Directive Concerning the Legal Protection of Data Bases* (unpublished manuscript, on file with author), at 14 (1997). Under copyright law, the creator of a work is considered an "author." Id. However, the Directive refers to the creator of the database as the "maker." Id. Note that the question of who constitutes the maker of the work led to much disagreement in the creation of special copyright provisions for databases and, accordingly, the European Community rejected a proposal to enact an American-like work for hire concept, instead leaving the issue for resolution by each member-state. Id. at 9-10. In addition, the Directive assumes that employees will not undertake to create databases, so there was no perceived need for a policy on such concepts as work for hire. Id.

\(^{219}\) Id.

\(^{220}\) Id.


\(^{222}\) Id.

but a copyright is not allowed for its factual components.\textsuperscript{224} The term of copyright protection remains the same as any copyright.\textsuperscript{225} This revision for databases significantly broadens the scope of European copyright law by narrowing the requirement of originality, as an author need only create a work, not an original work.\textsuperscript{226} Nevertheless, once a copyright arises under these provisions, the owner gains the exclusive right to authorize or prohibit the reproduction, translation, adaptation, arrangement, distribution, communication, display, or performance or any "use" of the work in a similar manner.\textsuperscript{227} Notably, the fair use limitations continue to apply.\textsuperscript{228} Moreover, the European Database Directive also ensures, through the operation of a sort of compulsory license, that once a right is given to access the database, all rights that need be utilized to use the database are incorporated for lawful users as a matter of course.\textsuperscript{229}

\begin{footnotesize}
\begin{enumerate}
\item Id. A new copyright may also be available for any substantial change to the original selection or arrangement, thus with a new term of protection. Id.
\item Gaster, supra note 218, at 8-9. Notably, in contrast to American copyright law, the standard for the copyrightability of computer software may be somewhat broader under the European scheme in that, other than the requirement of creation by an author, "[n]o other criteria shall be applied to determine [ ] eligibility for protection." Id. Thus, although applying a similar scheme for the copyrightability of databases, the European scheme does not apply the American originality requirement. While the Directive extends the scope of copyright for European law generally, for the Ireland and the United Kingdom, the directive actually represents a diminution in the scope of those member-states' copyright laws, as these member-states have long recognized copyright protection for the content of databases. Pressure for Database Directive, BUSINESS LAW BRIEF, May 24, 1995, at 8; see also Schrick, Farewell to the "Level of Creativity" (Schöpfungshöhe) in German Copyright Law?, 1995 IIC 41-48 (44) (explaining how the European database scheme abrogates the traditional German requirement for some level of creativity in a work). Thus, the Directive achieves one of its goals, the harmonization of copyright law for databases in all the member-states of the EC.
\item Directive, supra note 224, art. 6.
\item Id. art. 8.1.
\item Id. arts. 7, 11.5, 11.6. The compulsory right of a lawful user to utilize any necessary rights to "use" a database are called "mandatory user rights." Gaster, supra note 218, at 13. A similar concept relates to the effect of the exhaustion doctrine on the copyright provisions, thus the first sale doctrine. Id. at 10-11. Yet, pursuant to the rulings of the European Court of Justice, the exhaustion principle would only occur upon the sale or other transfer of a material copy of a database and not the mere electronic transmission of the database, such as over an online service. Id. at 11.
\end{enumerate}
\end{footnotesize}
The European Database Directive for the *sui generis* database right serves as a legislative statement providing protection for the elements of databases not protected by copyright based on the "sweat-of-the-brow" concept. The standard for the creation of this right focuses on whether the maker can demonstrate the creation of a database by an expenditure of time, money, or effort. Pursuant to a database right, the maker receives two exclusive rights for a term of fifteen years from the first January of the year following the date of completion of the work: (1) the reutilization right, and (2) the extraction right. The reutilization right is similar to a distribution right and simply entails commercial use of the database. The extraction right is similar to a reproduction right and allows the creation of a copy of the database. As with copyright protection, the database right also contains fair use limitations. Similar to the provisions re-

230. Gaster, *supra* note 218, at 15-16. The expressed purpose of the *sui generis* database right was to provide legal protection for the substantial investment of time, money, and effort required for the creation of databases. Id.

231. Directive, *supra* note 224, art. 7.1. The original draft of the Directive only applied to databases arranged, stored, and accessed by electronic means, and, thus, if any of these elements were absent from a database, arrangement, storage, or access by electronic means, then the directive would not have applied. *See* Simon Chalton, *The Amendment Database Directive Proposal: A Commentary and Synopsis*, 3 EUR. INTELL. PROP. REV. 94, 96 (1994) (under the earlier draft, "a computer output microform collection of data arranged and stored electronically, but accessed manually, would appear to not be so protected."). However, the final Directive includes both electronic and nonelectronic databases. Directive, *supra* note 224. Note that the Directive specifically excludes a compilation of musical performances on a CD as within the scope of the new database right. Id. at Recital 19.

232. Directive, *supra* note 224, arts. 7.2, 7.10. If the database is made public before the claim for a database right, the term runs only from the date of publication. Id. art. 10.2. In either case, the maker of the database maintains the burden of proof of the date of completion. Id. Note that, if a maker can demonstrate a substantial new investment in the database, the term of protection may be advanced from the date of the new investment, thus the maker may obtain a new term of protection for the new database right. *See* Simon Chalton, *The Amended Database Directive Proposal: A Commentary and Synopsis*, 3 EUR. INTELL. PROP. REV. 94, 97 (1994) (discussing the implications of a renewed database right upon each showing of a "substantial new investment").

233. Directive, *supra* note 224, art. 7.2(b). A use by reutilization includes any commercial use, including commercial rental, but excluding lending by the public. Id.

234. Id. art. 7.2(a).

235. Id. art. 8. Under the fair use provisions, a lawful user of the database may extract and reuse "insubstantial quantities" of the data for legitimate purposes. Id. art. 8.2. In addition, each member-state may also allow fair use of both electronic and nonelectronic databases for teaching and scientific pur-
garding the copyrightability of databases, the database right also recognizes that if one receives a right of extraction, that right shall ensure access to the whole of the database.\textsuperscript{236}

The EC member-states have until January 1, 1998 to implement the scheme for the protection of databases outlined in the European Database Directive.\textsuperscript{237} The directive also relegates the matter of enforcement of these rights to the member-states, and the member-states also have until the January 1, 1996 deadline to resolve these issues.\textsuperscript{238} Notably, the European Database Directive does not expressly provide corresponding protections to databases created in the United States, but the directive does contain a reciprocity provision.\textsuperscript{239} Thus, if the United States enacted a legal structure for a \textit{sui generis} database right, then this provision would guarantee reciprocity of protection for database rights within the European Community.\textsuperscript{240}

The following part considers
the present status of such efforts in the United States.

IV. PROGNOSIS: DATABASE RIGHTS IN THE UNITED STATES

While reaffirming that most, although not all, commercially significant databases satisfy the 'originality' requirement for protection under copyright, the [Supreme] Court in [Feist] emphasized that this protection is "necessarily thin."241

The United States stands at the forefront in the development of computer technologies, representing the world leader in the database market.242 Nevertheless, the United States currently recognizes no intellectual property protection for the content of databases, such as a database right.243 Due to the efforts of the European Community to provide sui generis legal protection for databases through a database right, however, the United States has indicated willingness to adopt a similar strategy for database protection in order to maintain legal consistency with the European intellectual property laws.244 At present, two proposals for the creation of database rights in the United States are currently under consideration, a domestic proposal to create a new federal statute for the protection of databases and the creation of a database right and a similar international proposal currently before the WIPO.245

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245. On October 17, 1996, the United States Patent and Trademark Office ("USPTO") announced a request for comments on the three proposed WIPO treaties, due by Nov. 22, 1996. Comments Sought, Briefing Scheduled on WIPO
A. Domestic Proposals

During the 104th congressional term, several bills addressed the need for legal protection for databases and similar forms of information systems and information technology. Under the recommendations of the National Information Infrastructure Task Force, two bills have proposed substantial amendments to the Copyright Act. However, more recently, on May 23, 1996, Representative Carols Moorhead introduced a bill that deals directly with the creation of database rights in the United States, "The Database Investment and Intellectual Property Antipiracy Act of 1996" ("the Database Act"). Representative Moorhead explained the rationale of the bill as follows:

While copyright, on the Federal level, and the State contract law underlying licensing agreements, remain essential tools for protecting the enormous investment in databases from the threat of unfair competition, there are gaps in the protection that can best be filled by a new Federal

Draft Treaties to Update Berne, 52 PAT., TRADEMARK & COPYRIGHT J. 695, 695-96 (Oct. 24, 1996). This author submitted the following two sections of this Article, both the conclusion and recommendation, during this comment period. The USPTO also announced a briefing in Arlington, VA on the treaty proposals, which was held on Nov. 12, 1996. Id.


247. The National Information Infrastructure Task Force ("NIITF") describes a group of experts, empowered by the Clinton Administration, to consider policies for emergent technologies. See About the President's Information Infrastructure Task Force (visited Nov. 15, 1997) <http://www.iitf.nist.gov>; see also The National Information Infrastructure: Agenda for Action, Executive Summary (visited Nov. 15, 1997) <http://sunsite.unc.edu/ni/NII-Executive_Summary.html>. The Working Group on Intellectual Property examined the role of copyright in the protection of intellectual property of works available online. See IITF Committee Report, Feb. 10, 1994 (visited Nov. 15, 1997) <http://www.iitf.nist.gov/documents/activity/210_11th_report.html>; see also IITF Committee Report, July 11, 1994 (visited Nov. 15, 1997) <http://www.iitf.nist.gov/documents/activity/711_iitf_report.html>. As described in a White Paper, the recommendations of the Working Group proposed various amendments to the Copyright Act, which are reflected in various bills submitted to Congress, one bill in the first session of the 104th Congress in the House, the National Information Infrastructure ("NII") Copyright Protection Act of 1995 (House Bill 2441), and another bill in the second session in the Senate, the NII Copyright Protection Act (Senate 1284). Today's News, COMMUNICATION'S DAILY, May 28, 1996. In addition, the Clinton Administration has also professed the recommendations from the White Paper to the WIPO for amendment of the Bern Convention, in the so-called new instrument. Id.

The Database Investment and Intellectual Property Antipiracy Act would prohibit the misappropriation of valuable commercial databases by unscrupulous competitors who grab data collected by others, repackaged it, and market a product that threatens competitive injury to the original database. This new Federal protection is modeled in part on the Lanham Act, which already makes similar kinds of unfair competition a civil wrong under Federal law. It also draws on some of the positive elements of the European directive, and is intended to be fully consistent with the draft international treaty language being put forward by our negotiators in Geneva. Importantly, this bill maintains existing protection for databases afforded by copyright and contract rights. It is intended to supplement these legal rights, not replace them.

The Database Act would require the creation of a new federal statute for the protection of databases in Title 15 of the United States Code. Modeled after the Lanham Act, but entirely separate from any of the other forms of intellectual property, the Act would protect any database used or intended for use in commerce. Specifically, the Act prohibits for twenty-five years the “extraction, use, or reuse [of] all or a substantial part” of the contents of a database “in a manner that conflicts with the database owner's normal exploitation of the database or adversely affects the actual or potential market for the database.”

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250. CONG. REC. E890 (May 23, 1996). The bill would provide protection for any database that “is the result of a qualitatively or quantitatively substantial investment of human, financial or other resources in the collection, assembly, verification, organization, or presentation of database contents, and (i) the database is used or reused in commerce; or (ii) the database owner intends to use or reuse the database in commerce.”
251. Database Investment and Intellectual Property Antipiracy Act of 1996, H.R. 3531, 104th Cong. § 3(a). The Act defines a database as “a collection, assembly or compilation, in any form or medium now or later known or developed, of works, data or other materials, arranged by a systematic or methodical way.”
252. Id. § 2. And, “[a] database otherwise subject to the Act shall remain subject, regardless of whether it is made available to the public or in commercial use; the form or medium in which it is embodied; or whether the database or any contents of the database are intellectual creations.” Id. § 3(b).
“commercial significance” to the database results in entitlement to a new database right with a new twenty-five year term of protection. Notably, the bill does not prohibit the extraction, use or reuse of an “insubstantial” part of a database, and the bill does not prohibit the independent creation of one database even if that database mirrors the information in another. Moreover, the remedies available under the Act are similar to the remedies for infringement of copyright and trademark, containing both civil and criminal penalties. However, the Database Act would require that any enforcement of available remedies occur within three years of discovery of the violation.

or distribution of devices “the primary purpose or effect of which is to avoid, bypass, remove, deactivate, or otherwise circumvent” database protection systems. Id. § 10. In addition, the Act would provide remedies for a violation of database integrity provision, including the provision of false database information and the removal or alteration of database management information. Database Investment and Intellectual Property Antipiracy Act of 1996, H.R. 3531, 104th Cong. § 12.

253. Id. § 6(b). The Act defines “change of commercial significance” as “a change that a reasonable user of a database would regard as affecting the quality, quantity, or value of contents of that database as a whole.” Id. § 2. Examples of such a change may include “the accumulation of successive additions, deletions, reverifications, alternations, modifications in organization or presentation, or other modifications.” Id. § 6(b).

254. Id. § 5(a) (“[A] lawful user of a database made available to the public or placed in commercial use is not prohibited from extracting, using or reusing insubstantial parts of its contents, qualitatively or quantitatively, for any purposes whatsoever.”).

255. Id. § 5(b). “Nothing in this Act shall in any way restrict any person from independently collecting, assembling or compiling works, data, or materials from sources other than a database subject to this Act.” Id.

256. Database Investment and Intellectual Property Antipiracy Act of 1996, H.R. 3531, 104th Cong. §§ 7, 12. The civil penalties depend upon the violation, whether a violation of the prohibited acts, id. § 4, or a violation of the circumvention and integrity provisions, id. §§ 10, 11. For the prohibited acts, the Act would include monetary fines including damages, impoundment, injunctive relief, and attorneys fees, and criminal penalties include fines from $250,000 to $500,000 or imprisonment of five to ten years, or both. Id. §§ 7, 8. The damage award includes ill-gotten profits, damages, and costs of the litigation and may include treble damages. Id. § 7(d). For the circumvention and integrity provisions, the Act would include the same civil remedies as for the prohibited acts, and criminal penalties of not more than $500,000 or imprisonment for not more than five years, or both. Id. §§ 12, 13. The damages range from actual damages to statutory damages, and there are provisions for treble damages for repeated violations and abatement of damages for innocent violations. Database Investment and Intellectual Property Antipiracy Act of 1996, H.R. 3531, 104th Cong. § 12(c). The forum for suit under either provision is in an appropriate United States District Court. Id. §§ 7, 12.

257. Database Investment and Intellectual Property Antipiracy Act, H.R. 3521, 104th Cong. § 14, reprinted in 52 PAT. TRADEMARK & COPYRIGHT J (BNA)
Notably, the Database Act contrasts with the European Database Directive in that the Act only establishes a *sui generis* system for the protection of databases, the Act does not affect the scope of United States copyright law.\(^{258}\) Thus, while the Database Act would authorize a “sweat-of-the-brow” test to determine qualification for coverage for a database right, the Act would not serve as a legislative reversal of the *Feist* ruling.\(^{259}\) Importantly, despite this distinction with the European Database Directive, the provisions contained in the proposed Database Act are entirely consistent with a similar proposal on databases currently before the WIPO.

B. *International Proposals*

The WIPO is an organ of the United Nations, to which the United States belongs, concerned with the promotion of intellectual property and cooperation in the administration of international intellectual property laws.\(^{260}\) Since 1989, the...
WIPO has been studying proposals to supplement the forms of copyright protection described in the Berne Convention on Artistic and Literary Works, to which the United States also belongs. In 1992, the WIPO created two "Committees of Experts," a Committee of Experts on a Possible New Instrument for the Protection of the Rights of Performers and Producers of Phonograms; and a Committee of Experts on a Possible Protocol. The WIPO empaneled the Committee of Experts on a Possible New Instrument to protect the rights of performers and producers of phonograms. The WIPO empaneled the Committee of Experts on a Possible Protocol to consider the possible international remedies for the protection of computer programs and databases. In 1996, these Committees of Experts submitted three proposed treaties for consideration: (1) a "Draft WIPO Treaty on Certain Questions Concerning the Protection of Literary and Artistic Works," (2) a "Draft WIPO Treaty on the Protection of the Rights of Performers of Phonograms," and (3) a "Draft WIPO


264. Id.

265. Id.
Treaty on Intellectual Property in Respect of Databases.\textsuperscript{266}

In formulating the Draft Treaty on Databases, the Committee of Experts on a Possible Protocol considered several alternatives for the protection of databases.\textsuperscript{267} The European Community presented one such proposal based on the European Database Directive in February 1996,\textsuperscript{268} and the United States also presented a proposal similar to House Bill 3531 in May 1996.\textsuperscript{269} The American database proposal expressly approves the “sweat-of-the-brow” test for application of the database right and contains essentially the same provisions as the database bill presented to the Congress.\textsuperscript{270} However, there are important differences between the U.S. database proposal and the European database proposal, yet to be resolved by the WIPO.\textsuperscript{271} The greatest difference between the two proposals deals with the term of protection. Whereas the American proposal calls for a twenty-five year term of protection, the European proposal calls for a fifteen-year term.\textsuperscript{272} There are other differences involving areas where the European proposal is silent. Whereas the American proposal provides that information generated by the federal government is not subject to database rights, grants national treatment, and allows parties to expand or restrict the scope of database rights by contract, the European proposal does not address these issues.\textsuperscript{273} Despite these differences, in September 1996, the Committee of Experts on a Possible Protocol completed consideration of the two proposals for database protection and developed a draft treaty.\textsuperscript{274}

\begin{itemize}
\item \textsuperscript{266} WIPO Releases Treaty Proposals on Transmission Right, Databases, 10 WORLD INTELL. PROP. REP. 366 (1996).
\item \textsuperscript{267} Id. at 367.
\item \textsuperscript{268} WIPO Doc. No. BCP/CE/V/5.
\item \textsuperscript{269} WIPO Doc. No. BCP/CE/VII/Z-INR/CE/VI/Z.
\item \textsuperscript{270} Bill, Treaty Proposal Would Create New Protection of Databases, 52 PAT. TRADEMARK & COPYRIGHT J. (BNA) 141 (May 30, 1996).
\item \textsuperscript{271} Id. at 141-42. Although the European Database Directive does not seek to allow the protection of facts, as opposed to databases, the American database proposal specifically indicated that facts are not protectable under a database right. Id.
\item \textsuperscript{272} Id. at 144.
\item \textsuperscript{273} Id. at 141-42.
\item \textsuperscript{274} Id. At an earlier meeting, from May 20 to 24, 1996, the Preparatory Committee of the Proposed Diplomatic Conference decided to hold a Diplomatic Conference from Dec. 2 to 20, 1996. Any remaining issues left unresolved were to be finalized at the Diplomatic Conference. WIPO Press Release No. 103, Geneva, Switz. (Aug. 30, 1996).
\end{itemize}
The “Draft WIPO Treaty on Intellectual Property in Respect to Databases” incorporates components of both the American and European database proposals. The draft treaty establishes essentially the same database protection structure as that proposed by the Database Act in the United States, establishing a *sui generis* form of protection for databases, independent of copyright law. The treaty only protects the database and not any computer software that may perform operations on the database. Similar to the European Database Directive, the treaty also provides the owner a database right with two exclusive rights: (1) the extraction right, and (2) the utilization right. The Draft WIPO Treaty requires no formalities for the creation of a database right.

As for the differences in the proposal of the United States and the proposal of the European Community, the treaty resolves all but one of the differences, leaving this most important difference for resolution at the Diplomatic Conference. For example, the treaty expressly adopts the American proposal specifically requiring national treatment. With respect to the expansion or restriction of the

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276. *Id.* art. 1.

277. *Id.* art. 2(i). The treaty defines a database as a “collection of independent works, data, or other materials arranged in a systematic or methodological way and capable of being individually accessed by electronic or other means.” *Id.*

278. *Id.* art. 3(2). The treaty defines the extraction right as “the permanent or temporary transfer of all or a substantial part [that is, “any portion of the database, including an accumulation of small portions, that is, of qualitative or quantitative significance to the value of the database”] of the contents of a database to another medium by any means or in any form,” and the treaty defines the utilization right as “the making available to the public of all or a substantial part of the contents of a database by any means, including by the distribution of copies, by renting, or by on-line or other forms of transmission, including the making available the same to the public at a place and at a time individually chosen by each member of the public.” *Id.* art. 2 (ii, vi).


280. *Id.* art. 11(1).

281. *Id.* art. 7. “The maker of a database shall enjoy in respect of the protection provided for in this Treaty, in Contracting Parties other than the Contracting Party of which he is a national, the rights which their respective laws
scope of database rights by contract, the treaty allows for the
exhaustion of the database right of utilization by contract,
but the exhaustion only applies to the "national/regional ter-
ritory." As for whether information generated by the fed-
eral government is subject to database rights, the treaty
leaves the resolution of this issue to each WIPO member.283
Finally, and most importantly, the treaty does not resolve the
differences between the term of protection between the
American proposal (25 years) and the European proposal (15
years),284 instead leaving the issue for resolution by the Dip-
lomatic Conference.285

On December 2 through 20, 1996, the WIPO convened
the "Diplomatic Conference on Certain Copyright and Neigh-
boring Rights Questions" to consider these three new multi-
lateral Treaties.286 Due to the emphasis given to the other
two treaty proposals, however, the Diplomatic Conference
never actually considered the treaty on databases.287 Addi-

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282. Id. art. 5(1) ("Contracting Parties may, in their national legislation,
provide exception to or limitations of the rights provided in this Treaty in cer-
tain special cases that do not conflict with the normal exploitation of the data-
base and do not unreasonably prejudice the legitimate interests of the
rightholder.").

283. Id. art. 5(2) ("It shall be a matter for the national legislation of Con-
tracting Parties to determine the protection that shall be granted to databases
made by government entities or their agents or employees.").

284. Draft WIPO Treaty on Databases, supra note 275, art. 8(1-2).

285. The WIPO Draft Treaty also left the question of enforcement to the
Diplomatic Conference. Id. art. 13. One alternative contains substantive pro-
visions for enforcement, including both civil and criminal penalties, injunctions,
and recoupment for fees and costs. Id. annex., arts. 4, 5, 21. The other alterna-
tive incorporates the enforcement provisions of Articles 41 to 61 of the TRIPS
Agreement. Id. art. 13.

lomatic Conference consists of the 157 member states of WIPO and the Euro-
pean Community and, as observers, representatives from other member-states
not members of WIPO and more than 100 intergovernmental and nongovern-
mental organizations. In addition to adopting these treaties, the Diplomatic
Conference will also address the creation of a conformity protocol to the Berne
Convention and the drafting of a "new instrument" to conform the WIPO poli-
cies with the TRIPs Agreement. Berne Protocol and New Instrument, BUS. LAW

287. Doug Henschen, Controversial Database Treaty Delayed, DM News,
Dec. 23, 1996, at 2; WIPO Delegates Scramble to Reach Agreement by Week's
End, 53 PAT. TRADEMARK & COPYRIGHT J. (BNA) 116, 116-17 (1996). Notably,
despite some criticism of the treaty in the United States, see, e.g., Proposed
WIPO Database Treaty Draws Fire at USPTO Briefing, 10 WORLD INTELL.
PROP. REP. 402, 404 (1996) (describing the array of criticisms leveled against
tionally, many of the member-nations expressed a desire to allow more time for debate on an international database treaty. 288

CONCLUSION

The advent of new technologies continues to challenge the resiliency of the intellectual property system in the United States. 289 In the late 1970's and early 1980's, the semiconductor chip presented a particular problem as none of the traditional forms of intellectual property protection extended to the design characteristics of the chip. 290 In response, Congress passed the Semiconductor Chip Protection Act of 1984, 291 which provided special sui generis protection for semiconductor chips. 292 Since 1990, one of the new technology issues to challenge the intellectual property system deals with databases. As this article demonstrates, there is presently no intellectual property protection for the content of databases in the United States. 293 Accordingly, as with the
SCPA, Congress has now proposed a remedy for this unique problem facing the intellectual property system under the proposed Database Act (House Bill 3531), and the Clinton Administration is also pursuing a similar solution on an international scale under the “Draft WIPO Treaty on Intellectual Property in Respect of Databases.”

These proposals for the creation of database rights in the United States have initiated some debate on the expanding role of intellectual property laws. For instance, James Boyle, an authority on Internet law, recently wrote: “Governments are complying, granting monopolies over information and information products that make the monopolies of the 19th-century robber barons look like penny-ante operations.” A recent editorial even warned that database rights would result in “the end of the public domain.”

These views of intellectual property are not uncommon among lay persons, as they frequently fail to recognize the limited protections that these laws afford to their creators. For example, a lay person may casually criticize the patentability of the human genome, the copyrightability of Windows 95, the trademarkability of the word “Olympic,” or the protectability by database rights of a data compilation. With-


295. See supra Part IV.A.
298. Editorial, Locking Up the Facts, SACRAMENTO BEE, Nov. 17, 1996, at F4. The editorial warns that the database right would impose a legal property right in batting averages, financial markets, judicial decisions, and weather reports. The editorial also criticized the proposals for the implementation of database rights due to the lack of public debate on the issue, especially in view of the opposition of the National Academy of Sciences, the National Academy of Engineering, the Institute of Medicine, and “every major library association.” See also Technology News from Edupage, available in 1996 WL 664360, Nov. 19, 1996 (describing the opposition of the National Research Council to database rights due to the threat of open access to data for scientists and educators).
299. BOYLE, supra note 288, at 3-5. As Boyle explains, there are many opponents of the specific results of intellectual property laws, such as religious groups opposing the patentability of genetic materials or living organisms or gay organizations opposing the trademarkability of the word “Olympic” prescribing the use of the word in “Gay Olympics.” Id. Yet, the intellectual prop-
out adequate intellectual property protection, these discoveries and creations would not have likely occurred. Using these examples, the value of intellectual property becomes clear. Thus, although the intellectual property laws have expanded in scope over the years, the goal of these laws is merely to ensure that inventors, authors, and other creators have a reason to invent, write, sculpt, design, or otherwise create.

Nevertheless, some legal scholars continue to voice disapproval of database rights based on the possible threat to social policy. A critic of database rights warns of the threat to access for scientific and research information. Debra Rosler, even warns that the directive could allow “a limited group of database creators to control the dissemination of information.” Rosler argues that database rights would result in a “limitation on the free flow of ideas,” would be antithetical to the framework of intellectual property law, and could even aid in the creation of a two-tier society of have-nots, resulting in only a part of the population with access to high technology. If the previous predictions are not draconian enough, others contend that the directive could result in the creation of an oligopolistic software market and perhaps even a monolithic society.

4. See, e.g., James Boyle, Cyberspace Land Grab Expanding Property Rights on Internet Could Stifle Innovation, PHOENIX GAZETTE, Apr. 2, 1996, at B5 (referencing the “information land grab” that may lead to “an oligopolistic software market and diminish inventiveness”).
Neither the European Database Directive nor the proposals for the adoption of database rights in the United States would result in the dire results hypothesized by these naysayers and postulators of doom. Essentially, the basis of their complaints relies on the old adage that there is no new creation or invention, only improvement, and if the intellectual property laws so restrict the body of work from which inventors, authors, and other creators may operate, these laws will stifle invention and creation. These views are based on the false theory that intellectual property laws extend broad, sweeping protection to the owners of patents, copyrights, and indeed, database rights. To the contrary, patents only protect specific inventions (not ideas), copyrights only protect specific works (not types of literature or art), and database rights would only protect specific data compilations (not mere information). These laws do not prohibit another from making the same invention in a different way, from creating a similar work of literature or art in a different manner or style, or from making the same compilation of data independent of the former work. Instead, these traditional intellectual property laws, as well as the proposed database right, only protect the value of the specific work of the creator. Once one understands this fundamental distinction, intellectual property generally or database rights specifically can be seen as advantageous and not as a threat to Sir Isaac Newton's realization, "If I have seen further it is by standing on ye shoulders of Giants."

RECOMMENDATION

The practitioners of government procurement law have long realized the importance of databases, even before data

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305. See John F. Hayden, Copyright Protection of Computer Databases After Feist, 5 HARV. J.L. & TECH. 215, 240 (1991) ("While it might seem that providing copyright protection to data would eliminate public access to vital information, a closer examination reveals that, in practical application, this notion has little basis.").

306. Boyle, supra note 297, at B5. Warning of the dangers of intellectual property, Boyle explains: "Entrepreneurs have to be assured that time spent developing new software won't be wasted, that a profit lies at the end of the tunnel. But they also require an adequate amount of raw material. There has to be an adequate flow of information for the market to function." Id.

compilations were stored in electronic form. During World War II, the allocation of rights in data presented minimal problems, as the government and particularly the military procured most large-scale goods and services by sole source contracts.\textsuperscript{308} When the government later implemented competition requirements, the government began to demand access to the technical data incumbent in the performance of government contracts.\textsuperscript{309} The first technical data rights regulations required that contractors provide all information that the government would consider relevant to the contract, including databases, which generally included all the data.\textsuperscript{310} Since that time, the data rights regulations reflect a more equitable allocation of data rights. Nevertheless, the numerous amendments and revisions to the data rights regulations over the last fifty years have clearly demonstrated the importance of data rights and specifically databases both to contractors and to the government. As a result, almost all parties involved in the government procurement process understand and favor the domestic and international proposals to extend \textit{sui generis} intellectual property law protection to databases.\textsuperscript{311}

At present, the chances are good that the United States will eventually recognize rights for databases on a national scale, rights similar to those long required for all technical data in government procurement law. Ironically, the adoption of such database rights will not require specific changes to the data rights regulations. The data rights regulations already function independent of any rights that one may have in patents, copyrights, or mask works, and the addition of database rights will not affect either the statutory or regulatory formula. However, because a database right represents a new form of intellectual property, the creation of such rights will require the government to contemplate the role of database rights in future procurements. The government may

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thus acquire database rights; therefore, the makers or owners of these rights will require means to obtain a remedy for their acquisition or utilization by the government.

Accordingly, one of the most important statutory amendments that the creation of this new form of intellectual property will require is the inclusion of database rights within 28 U.S.C. § 1498, which authorizes suit in the Court of Federal Claims for remuneration to the owners of intellectual property taken by the government in the performance of a government contract.\textsuperscript{312} 28 U.S.C. § 1498 currently provides for the recovery of reasonable and entire compensation to the owners of intellectual property for the taking of patents, copyrights, plant patents, and mask works.\textsuperscript{313} Ironically, this statute began simply as a provision pertaining to patents, but as the scope of intellectual property expanded, the statute expanded to incorporate the new concepts of intellectual property. A similar extension of the statute will be necessary with the advent of database rights.

The proposed Database Act (House Bill 3531) as well as the draft treaty before the WIPO already contain provisions relating to the use of databases by the government. Section three of the proposed Database Act excludes any database created by a governmental entity from coverage under the bill, and sections seven and twelve specifically exclude the remedies of injunction or impoundment against the government.\textsuperscript{314} These references, especially the provisions in sections seven and twelve are meaningful, yet the proposed Database Act makes no other mention of the availability of remedies for the unauthorized use of databases in regard to the government.

Absent specific statutory authority, the owner of database rights would not be able to seek a remedy against the United States for a violation of the database rights under the proposed Act. An amendment would then be required to authorize suit against the government in the Court of Fed-


\textsuperscript{314} Database Act §§ 3, 7, 14; see also id. § 12(b)(4) (allowing “recovery of costs by or against any party other than the United States or an officer thereof”) (emphasis added).
The following recommendation presents such an amendment:

(f) Hereafter, whenever the database right in any work protected under the database laws of the United States shall be violated by the United States, by a corporation owned or controlled by the United States, or by a contractor, subcontractor, or any person, firm, or corporation acting for the Government and with the authorization or consent of the Government, the exclusive remedy of the owner of such database right shall be by action against the United States in the Court of Federal Claims for the recovery of his reasonable and entire compensation as damages for such violation, including the minimum statutory damages as set forth in section [to be announced] of title 17, United States Code: Provided, That a Government employee shall have a right of action against the Government under this subsection except where he was in a position to order, influence, or induce use of the database by the Government; Provided, however, That this subsection shall not confer a right of action on any database right owner or any assignee of such owner with respect to any database prepared by a person while in the employment or service of the United States, where the database was prepared as a part of the official functions of the employee, or in the preparation of which Government time, material, or facilities were used: And provided further, That before such action against the United States has been instituted the appropriate corporation owned or controlled by the United States or head of the appropriate department or agency of the Government, as the case may be, is authorized to enter into an agreement with the database owner in full settlement and compromise for the damages accruing to him by reason of such violation and to settle the

315. To obtain jurisdiction to sue in the Court of Federal Claims, the Tucker Act requires:

The United States Court of Federal Claims shall have jurisdiction to render judgment upon any claim against the United States founded either upon the Constitution, or any Act of Congress, or any regulation of an executive department, or upon any express or implied contract with the United States, or for liquidated or unliquidated damages in cases not sounding in tort.

28 U.S.C. § 1491 (1994). 28 U.S.C. § 1498 (1994) represents the “Act of Congress” by which owners of intellectual property may seek redress for the taking of a patent, copyright, or mask work. One must proffer such a statutory basis for suit against the government in the Court of Federal Claims in order to demonstrate a waiver of sovereign immunity.
claim administratively out of available appropriations.

Except as otherwise provided by law, no recovery shall be had for any violation of a database right covered by this subsection committed more than three years prior to the filing of the complaint or counterclaim for violation in the action, except that the period between the date of receipt of a written claim for compensation by the Department or agency of the Government or corporation owned or controlled by the United States, as the case may be, having authority to settle such claims and the date of mailing by the Government of a notice to the claimant that his claim has been denied shall not be counted as part of the three years, unless suit is brought before the last-mentioned date.

The first paragraph of the recommended statutory amendment entails a waiver of sovereign immunity, allowing owners of database rights to sue the United States for violations of the Act.\(^{316}\) The second paragraph entails the same limitation on actions as contained in the proposed Database Act, requiring suit (against the United States) within three years of discovery of the basis for the cause of action.\(^{317}\) Notably, the above recommendation for the amendment of 28 U.S.C. § 1498 by the addition of § 1498(f) utilizes the similar limitations and restrictions as incorporated in the copyright provision at § 1498(b).

Since 1910, 28 U.S.C. § 1498 and its statutory predecessors have authorized patent infringement suits against the United States. Since the amendment to allow copyright infringement in 1960, the amendment to allow plant patent infringement in 1970, and the amendment to allow mask work infringement in 1985, the statute has expanded to meet the progress of new forms of intellectual property as well as new technologies. The database right presents no unique circumstance, and provided the United States adopts intellectual property protection for databases, which this author endorses, the United States should likewise make provision for

\(^{316}\) Note the use of the word, "violation," instead of the word, "infringement." The database bill uses this word and this proposed statutory amendment does as well for consistency.

\(^{317}\) See Database Act § 14, supra note 248 (describing the "Limitations on Actions" that "[n]o action shall be maintained under this Act unless it is commenced within three years after the database owner knew or should have known of the claim").
the amendment of 28 U.S.C. § 1498 in order to provide protection for these rights to the makers and owners of databases against unauthorized use by or for the United States government.