

**NFAIS White Paper on Database Protection (May 2001)**  
**Securing the Future of U.S. Intellectual Property and Scholarly Communication**

Founded in 1958, the National Federation of Abstracting and Information Services (NFAIS) is an organization of approximately 60 of the world's leading producers of databases and information services in the sciences, engineering, social sciences, business, and the arts and humanities. NFAIS members have been serving the academic, scientific, and library communities for more than a century, and they have taken leadership roles in the evolution of the electronic creation and dissemination of information since the emergence of commercial computers in the 1960s. NFAIS members have consistently initiated and embraced advances in information technology to ensure that their products and services evolve in alignment with the ever-changing needs of their user communities. As a result of such efforts, information previously confined to the printed page and to within library walls is now widely and easily accessible through academic and public library Internet services, and the hours of research for information essential to the scientific discovery process have been significantly decreased. The library community recognizes the importance and significant value of compilations of information (databases), stating, "One would have to engage in an enormous amount of research to find all of the collected material in any one place."<sup>1</sup>

However, the technological advances that were developed to improve the access to and flow of information have also significantly increased the potential for information abuse. The theft of databases in a print environment was limited largely by the constraints of the technology available at the time. In addition, until the U.S. Supreme Court decision in *Feist Publications, Inc. vs. Rural Telephone Service Co.*, it was generally assumed that copyright law provided adequate, overarching legal protection for databases. The theft of databases in today's electronic environment has no such constraints. Indeed current technology facilitates rather than inhibits abuse, and the current U.S. copyright law provides only thin protection to databases.

As a result, NFAIS believes that the future of the databases and related information services provided by its member organizations—and upon which the academic, scientific, and library communities have come to rely—is threatened unless meaningful database protection is afforded in today's digital marketplace. We believe that such protection can be accomplished by a threefold approach: 1) an update of existing federal law to include sound protection for databases; 2) the judicious use of technological protection; and 3) the use of license agreements.

#### The Role of Digital Information in Scholarly Communication and Research

Communication is the essence of science.<sup>2</sup> Since the publication of the first scientific journal in 1665, the scholarly community has relied upon published literature as one of the major methods of disseminating research and ensuring that information is captured for use by current and future generations of scholars.<sup>3</sup> But since 1665, the volume of scholarly literature has increased significantly. By 1960 the number of scientific journals alone had increased to approximately 50,000, with a total of 6 million articles having already been published and another half million being added annually.<sup>4</sup> It is estimated that the number of scientific papers doubles every 10 to 15 years, and this estimate does not include the impact of the Web on journal growth.<sup>5</sup>

As early as in the 1700s scholars were well aware that it was difficult, if not impossible, to maintain currency with the published literature. As a result, learned societies and eventually commercial publishers began to create databases (first print, then later electronic) that facilitated access to journal articles and other scholarly documents. For more than 200 years scholars have relied heavily on these databases for two purposes. First, the databases help them discover essential research information contained in documents to which they do not have regular access. Today, scientists read only about 120 articles per year from approximately 18 journals (only .02% of the scientific articles published).<sup>6</sup> Second, scholars rely on databases to ensure that information about their own research is disseminated as widely as possible.

"...The main goals of publication are to disseminate information to the widest possible audience and to establish claim to origination of the ideas presented."<sup>7</sup> Because scholars have insufficient time to read everything published in their field, and have limited access to that literature through their libraries, databases play a unique and invaluable role in the scholarly communication process.

The academic, library, and scientific communities recognize the importance of databases in education and research:

"It would be difficult to exaggerate the advantages to scholars of having such bibliographic information available in electronic form, in part because of the nature of the information itself, which extends to the level of the individual item (the individual article or book review), and in part because of the ability to search the literature completely for virtually all items of interest and, in contrast with manual searching, with considerable ease."<sup>8</sup>

Databases facilitate scholarly communication, and the speed of that communication dictates the efficiency and timeliness of scientific discovery. The research related to the development of new drugs is just one example. For every 5,000 to 10,000 potential new drugs studied, only one will make it to market after a long research process (the average elapsed time is 10 years) and at considerable cost (in 1997 the average cost of each drug studied was \$400 million dollars).<sup>9</sup> The information contained in the relevant databases can significantly reduce the time and cost related to drug research. It has been said that "The data explosion...provides a strong demand for software and information products...key to unleashing the potential of modern drug discovery."<sup>10</sup>

And the value of databases is not limited to scientific discovery. Databases facilitate discovery across all scholarly disciplines. In a discussion of legal databases it has been said that "...these services...have tended to make use of law reviews easier, faster, cheaper.... Moreover, the indexing capability speeds research by allowing rapid searching of law review material for key words. These databases also extend the potential readership for articles beyond those with access to law libraries, or to subscribers of specific journals."<sup>11</sup> Again, databases not only enhance the flow of scholarly communication, but also significantly broaden its scope. They are essential tools that support all scholarly activities-education, communication, and discovery, and without them, these activities will be jeopardized. To ensure that the academic, library, and scientific communities continue to have access to the tools that play such a critical role in their activities, it is essential that databases be protected from abuse. NFAIS believes that meaningful database protection comprising legislation, technology, and the ability to license will ensure that databases continue to be created and that scholarly communication continues to flourish.

#### The Need to Include Database Protection in U.S. Law

The Copyright Act of 1976 provides database protection based on "creativity" in the "selection, coordination, and arrangement" of the data. The weakness of the current law in protecting databases was made clear in 1991 with the Supreme Court ruling in *Feist*, a landmark decision in which the content of a published telephone directory was used to create a competitive product. The essence of the ruling was that "not only the Copyright Act but the Constitution itself prohibited the use of copyright to protect the sweat of the brow invested in collecting data."<sup>12</sup>

As a result of this decision, the U.S. Copyright Office has stated that the scope of protection for databases under the copyright statute is thin,<sup>13</sup> and database producers have been seeking stronger legislative protection as noted in the following chronology of bills supported by database producers:

1995 Copyright Bills H.R. 2441 and S. 1284 (not passed-these bills were developed to prevent the circumvention of the technological protection of copyrighted works)

1996 Database Investment and Intellectual Property Antipiracy Act-H.R. 3531 (not passed)

1997 Collections of Information Antipiracy Act-H.R. 2652 (passed unanimously by the House of Representatives, but ultimately not passed as law)

1998 Digital Millennium Copyright Act-H.R. 2281 (passed without the database protection statute that was added as an amendment by the House of Representatives)

1999 Collections of Information Antipiracy Act - H.R. 354 (approved by the House Committee on the Judiciary, but ultimately not passed as law)

In the absence of adequate legislative protection and because case law has, for the most part, reinforced the Feist decision of 1991, database owners rely heavily upon contract law and technology to protect their intellectual property. The lack of success in obtaining stronger legislative protection can be directly attributed to opposition from the academic, library, and scientific communities who believe that the combination of legal (that is, limited copyright), contractual, and technological protection is adequate for database protection.<sup>14</sup>

However, while these methods do afford some level of security, NFAIS believes that they do not negate the need for legislation that will provide the fundamental foundation for protection of databases within the U.S. legal framework. This belief is based upon the following facts:

The current copyright law creates a competitive disadvantage for U.S. database producers.

In 1996, the European Union passed a database directive in recognition of the need to protect in a new manner other than copyright, the databases created within its constituent countries. (Such protection does not extend to databases created outside the EU unless a similar law is in place in the database owner's country of origin.) Since then every EU country has incorporated database protection within its legal framework. European Union officials are also urging other nations to adopt a similar protection regime under their national laws and as a new international treaty. In the absence of equivalent legislation in the United States, the databases created in the United States are subject to potential abuse in the EU, one of the major markets for digital information outside of the United States. This situation weakens the ability of American producers to compete effectively in today's global economy, and places those businesses and their workers at risk. NFAIS believes that the protection of databases must be clearly specified under U.S. law in order to ensure the long-term viability of the U.S. database industry-an industry that is a major facilitator of scholarly research and communication worldwide.

The inadequacy of current copyright law minimizes the value of databases and other copyrightable works.

Because the current copyright law provides only "thin" protection to databases, there is a demand from some communities that even those databases that qualify for "thin" copyright protection should be excluded from the protection offered by other aspects of the copyright law, including the Digital Millennium Copyright Act. Representatives of a group of U.S. educators, in a written response to the Copyright Office's request for input during the recent anticircumvention rulemaking process, stated: "Works such as scholarly journals, databases, maps, and newspapers are primarily valuable for the information that they contain, information that is not protected by copyright under Section 102(b) of the Copyright Act ("Thin Copyright Works"). Access control technologies applied to such works will protect primarily material in the public domain, not copyrightable authorship."<sup>15</sup> In the past these educators have said that database protection legislation is not needed because databases are adequately protected by current copyright law. Yet, they are now saying that "thin copyright protection" is equal to "no copyright protection" and are extending that lack of protection to scholarly journals that contain a good deal of creative expression beyond any factual material upon which the author's comments and conclusions may be based. NFAIS believes that the weakness of the current copyright law with regard to the protection of databases must be eliminated, to ensure that the digital products and services on which they are based-and that may contain a good deal of clearly copyrightable material-are not threatened by unwarranted or uncontrollable exploitation.

The current copyright law is inadequate to serve as the legal framework for an information-based society.

Reading the responses on the issue of exemptions to the anticircumvention provisions of the Digital Millennium Copyright Act posted by the Copyright Office,<sup>16</sup> it is apparent that the general public, including some members of the academic, library, and scientific communities, is unaware that intellectual property is indeed property that is protected from misuse by law. The public is evidently equally unaware of what constitutes the fair use, as opposed to misuse, of copyright-protected works, particularly if those works are available in digital format. Consider the following statements: "Digital media will always be copied...I believe that this simple fact has yet to be acknowledged by content producers."<sup>17</sup> and "The nature of digital is all or none. Frankly, today it is a fiction that a copyright purchaser does not redistribute copyrighted material."<sup>18</sup> These comments, combined with the one mentioned earlier from the American Association of Universities, are disturbing considering that copyrighted works, including those databases that qualify for "thin" protection, are used by millions of U.S. citizens via library access."<sup>19</sup> Such comments attest to a serious lack of respect for copyright law that carries over to some user attitudes towards databases. U.S. law must be revised to provide clear and specific language with regard to the protection afforded databases and other works more strongly protected by copyright, particularly in today's digital environment.

### The Need to Support the Prohibition on the Circumvention of Technology Used to Protect Copyrightable Works

In September 1999, the United States ratified two treaties adopted in 1996 by the World Intellectual Property Organization (WIPO). These treaties, the WIPO Copyright Treaty and the WIPO Performances and Phonogram Treaty, require that "...contracting parties provide adequate legal protection and effective legal remedies against the circumvention of effective technological measures that authors or other copyright owners (or performers and producers of phonograms) use in connection with the exercise of their rights and that restrict acts which they have not authorized and are not permitted by law."<sup>20</sup> As of October 28, 2000, the Digital Millennium Copyright Act provides such legal protection, bringing U.S. law into alignment with that of other major economic powers of the Western world.

However, the library community is seeking broad exemptions to this law because of the belief that the use of technological controls diminishes the ability to make fair use of digital information. They have requested that exemptions to the law be based upon how a work will be used and that all categories of copyrightable works be covered by such an exemption.<sup>21</sup> The evidence supporting their request, however, was not given weight in the recent rulemaking process conducted by the Copyright Office on this issue because the majority of adverse effects put forth by the library community were not caused by the prohibition on circumvention of access controls; rather, they have their roots in long-standing issues related to budgetary constraints and license agreements, as well as in projections for the future. The Copyright Office clearly stated, "For almost all of the proposed classes, the proponents [of exemptions] failed to demonstrate that there have been or are about to be adverse effects on noninfringing uses that have distinct, verifiable and measurable impacts."<sup>22</sup> The Copyright Office found that by allowing broad exemptions the future of digital information and scholarly research could be negatively affected: "In general, it appears that the advent of access control protections has increased the availability of databases and compilations... If a database producer could not control access, it would be difficult to profit from exploitation of the database. Fewer databases would be created, resulting in diminished availability... it appears likely that if circumvention were permitted, the ability of database producers to protect their investment would be seriously undermined and the market would be harmed."<sup>23</sup> The use of access control technologies to provide database protection has facilitated scholarly research and communication and should continue to be supported.

### The Need to Support the Right to Provide Digital Information Under License Agreements

As a direct result of the Feist decision, owners of databases have relied on license agreements as the foundation for the distribution and use of their intellectual property. As noted earlier, the library, academic, and scientific communities believe that the use of licenses negates the need for database protection legislation.

Yet during hearings the Copyright Office held on the use of digital information in distance learning, those communities requested that the use of licenses to protect the rights of copyright owners be restricted. The repetitive themes in support of their request were as follows: database license fees can be expensive; data owners impose too many restrictions; as a result of those restrictions access to information is denied to those seeking it; and the process of negotiating licenses can be time-consuming.<sup>24</sup> These themes also arose during the recent rulemaking process for the prohibition on the circumvention of technology used to protect copyrightable works, yet the Copyright Office found that "Commenters and witnesses who complained about licensing terms did not demonstrate that negotiating less restrictive licenses that would accommodate their needs has been or will be prohibitively expensive or burdensome. Nor has there been a showing that unserved persons not permitted to gain access under a particular license could not obtain access to the restricted material in some other way or place."<sup>25</sup>

Licenses allow the rights of the owner and user to be clearly defined, and offer flexibility in meeting the needs of a broad spectrum of users, thus facilitating the adoption of reasonable usage agreements based upon the unique and often diverse needs of each user population. The process of negotiating licenses has improved significantly over the past decade and licenses agreements are helping to balance users' needs and owners' rights as stated in the following quote from a noted librarian: "What many have come to realize during the current license activities is that the license arrangements that libraries and publishers currently are making might, in fact, be achieving what we once expected from legislation and getting us there more quickly."<sup>26</sup>

Licenses currently provide an important tool for database owners seeking to prevent unwarranted use of their property, and they facilitate flexibility in meeting the usage needs of diverse information communities. Providing such advantages, licenses cannot and should not be undermined. However, contracts by their very nature cannot substitute for the type of legal groundrules that U.S. law has provided to other forms of intellectual property. As one court has noted in regard to the relationship between copyright and licenses, "Copyright law forbids duplication, public performance, and so on, unless the person wishing to copy or perform the work gets permission; silence means a ban on copying. A copyright is a right against the world. Contracts, by contrast, generally affect only their parties; strangers may do as they please, so contracts do not create 'exclusive rights'."<sup>27</sup> Licenses are one part of the necessary threefold approach to database protection.

### The Need to Understand the Current Environment for Digital Information

The use of digital information is not new. It began with the advent of online systems more than 25 years ago. But the technology used to distribute, access, and use information has changed dramatically. This change has facilitated the emergence of a new society—one that is increasingly computer-literate, information hungry, and global. It is a society in its formative stage, a society that must be developed and protected by a legal framework that sets the stage for its successful development and growth so that it achieves its full potential. Based on testimonies provided by the library, academic, and scientific communities during the past two years of information-gathering by the U.S. Copyright Office, NFAIS strongly supports database protection. Consider the following:

- Databases are not adequately protected by the current U.S. copyright law, as noted by the Copyright Office.<sup>28</sup>
- Technology is one method of protection used to supplement the legislative void—a method supported previously by the academic, library, and scientific communities in their opposition to a more general law protecting databases.<sup>29</sup>
- Databases are increasingly used in worldwide distance learning, necessitating technological access controls to prevent abuse—as supported by the academic community when requesting broad exemptions for the use of digital information in distance learning.<sup>30</sup>
- Databases are used by millions of U.S. citizens via library access—as noted in the comments of the library associations.<sup>31</sup>

- Knowledge of and respect for copyright law and intellectual property rights are not widespread as evidenced in the comments submitted during the rulemaking process on the prohibition on the circumvention of access control technologies.<sup>32</sup>

The Copyright Office hearings confirmed the fact that the current perceptions and interpretations of the protection afforded digital information by copyright law—even among well-educated members of the academic and library communities—are diverse, often uninformed, and conflicting.

#### NFAIS Support of Legal Access to and Fair Use of Information

While NFAIS firmly believes in the need for strong database protection, NFAIS also believes that legal access to and fair use of information are absolutely essential, not only for the well-being of the United States, but for that of our larger, global society. In support of that belief, NFAIS upholds the following principles:

- Individual facts should not be subject to private ownership.
- Anyone should be able to obtain facts independently from the original sources, even if those facts are also contained in a database.
- U.S. government databases should not be protected by Copyright Law.
- It is important that the needs of science, education, and news reporting for factual information not be overburdened.
- Substantial copying that harms the ownership interests of database owners, particularly when their property is used for commercial, competitive purposes, should not be permitted.

NFAIS offers the expertise of its member organizations to work with user communities, the Copyright Office, and other U. S. Government officials in educating end-users about intellectual property and the law. In addition, members can help develop legislation that protects intellectual property rights while upholding the principles listed above.

#### Database Protection and the Future of Scholarly Communication and Research

NFAIS believes that databases play an integral and unique role in scholarly communication and research. They facilitate the efficient flow and broad dissemination of information that is essential to scholars in today's global environment. To ensure that these invaluable databases continue well into the future, they must be protected from abuse.

NFAIS believes that meaningful database protection can be accomplished by a threefold approach: legislation, technology, and licensing. Alone each of these tools is insufficient, but together they offer the protection necessary to provide database owners with the incentive to continue the increasingly important ongoing investment essential to database development, updating, and maintenance.<sup>33</sup> In addition, these three tools provide the flexibility required to meet the individual usage needs of diverse information communities. And each component of the recommended approach to database protection has its own role to play.

Federal legislation establishing the ground rules for protecting databases—and any exceptions to such protection—is the most important step in achieving a legal framework to assure that databases remain widely available, particularly to the academic, library, and scientific communities. The other existing means of protecting databases do not provide the same type of assuredness required by database producers to ensure the continued production and marketing of the types of products and services demanded by those communities. Technological protections constitute a deterrent analogous to locks on a home; like those locks, they are always susceptible to circumvention. The Digital Millennium Copyright Act addresses only issues involved with the circumvention of technology, not issues related to the general property protections of the works themselves. Once the technologies controlling access to and

redistribution of databases are circumvented, database owners are less able to pursue pirates precisely because of the lack of a clear, federal statute setting out the nature and extent of how they may control use of their works. Licensing agreements, while providing the usage flexibility demanded by the marketplace, by their very nature govern only the activities of those who are parties to the license. Should third parties gain access to "thinly" protected databases, the owners of these products and services are left without any recourse to halt misuse, other than the inadequate protection offered under copyright law.

NFAIS believes that federal legislation for database protection, supported by technological protection and the use of licenses, will ensure continued database development, thereby securing the future of scholarly communication for generations to come.

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