

are grouped. For example, the first 20 sections of CA make up a section grouping entitled Biochemistry. Thus, a document assigned by machine to Section 6, General Biochemistry, when it properly should have been placed in Section 11, Plant Biochemistry, would be a case where the machine did not assign the document to the correct section but did assign it to the correct section grouping.

Finally, about 10% of the documents were not assigned to a CA section in the appropriate section grouping. Although at first this appears to be a fairly serious defect, one must once again recognize that the IPC system and CAS view chemistry and its division in a somewhat different manner. For example, the IPC system assignment of a document to the Biochemistry section grouping and the staff analyst assignment to the Organic section grouping seems far apart. However, when one sees that the document is on the fermentation of sugar and the IPC emphasis is on fermentation (biochemistry), while the analyst has chosen to emphasize the carbohydrate aspect, organic chemistry, the seriousness of the misassignment does not seem to great.

The machine assignment of CA section numbers has proven to be a valuable tool by which patent documents are routed to the various analysts who abstract and index them. It also assists the document analysts in placing the abstract in the appropriate section of CA.

CONCLUSION

In conclusion, it may be said that CAS has been most

pleased with its experience in using an automated system for document selection. This system has given CAS users a uniform and consistent selection policy that extends to all countries and in some cases has significantly improved the coverage of chemical documents. In addition, it has given CAS a tool by which patent documents can be routed to the appropriate document analyst, and the analyst is assisted in the placement of abstracts in the proper CA sections.

ACKNOWLEDGMENT

I wish to thank Irvin Tingley, a member of the CAS Selection and Assignment Department, who almost single-handedly has reviewed every one of the 50 000 IPCs in each of the three editions of the IPC manual and has made them into a highly workable selection and assignment tool. Without his contributions, much of what was done would not have been possible.

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- (3) World Intellectual Property Organization. "International Patent Classification 1979", 3rd ed.; Carl Heymanns Verlag KG: Muenchen, 1979.
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Information Services Providers: Copyright Issues for the Eighties

ROBERT A. SIMONS

DIALOG Information Services, Inc., Palo Alto, California 94304

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The "Information Age" has come about largely as a result of the new technologies which enable the seekers of information to identify sources of the information being sought quickly and efficiently. The information-service company that facilitates the information identification and location process through an information data base retrieval system has a significant stake in the resolution of copyright issues affecting both the owners and the use of copyrighted information by the information seeker. These issues between copyright owners and information users must be resolved if the new technologies are to be extended to anyone having the means of accessing the technology.

INTRODUCTION

Just as surely as historians will view this latter portion of the twentieth century as the commencement of the "Information Age", these same historians will most certainly examine the dynamic role of the information provider in relation to both the information source and the information user. Although the role of the information provider is closely and, perhaps, inextricably related to the continually changing function of new technologies, the copyright protection of information in the scheme of information delivery must surely transcend the technologies that enable the information-delivery process to flourish. Therefore, copyright protection of information serves the purposes of and benefits all those involved in the information delivery scheme, be they information sources, information service providers, or information users.

This paper will highlight some of the significant issues relating to copyright and its application to the delivery of information through utilization of the new technologies. Its purpose is not to resolve controversies but, rather, to illustrate

some significant issues as they relate to the information-delivery process and to those who participate in it.

BACKGROUND

From the historical perspective, the library has traditionally been the ultimate source of most of the world's information that exists in written form. Whether or not one views the library's contemporary role as eroding or as expanding due to expanded marketing techniques of information sources, the information institutions in our society are utilizing the new technologies in the maintenance of the information-delivery process. It is important, however, to view the new technologies as "tools" benefiting the information-delivery process, rather than as the process itself, although it is understandable that persons involved in the process may not correctly distinguish the technology from the information.

The Copyright Act of 1976¹ was the culmination of more than 20 years of study by the United States Congress, whereby the copyright laws were to be reconciled with the new tech-

nologies that have come into existence since 1909. Although Congress felt that the new law should cover the technological state-of-the-art (such as computer software and data bases), there was considerable uncertainty as to how the technologies should be brought under the new law. To resolve this uncertainty, Congress established the National Commission on New Technological Uses of Copyrighted Works (CONTU) to examine the computer software problem in conjunction with "automatic systems capable of storing, processing, and retrieving information by various forms of machine representation".² Some of the issues³ relevant to data base copyright protection that faced CONTU included the following: (1) overlapping citations among data bases, (2) copyright status of virtually identical data bases that were independently created, (3) the copyright status of individual records and abstracts, (4) the copyright status of the special works that are created to enable the data base to be used in conjunction with information retrieval, and (5) what portion of a data base must be used so as to constitute copyright infringement, since authorized users never see the entire data base.

On July 31, 1978, CONTU issued its final report and recommended that Section 117 of the 1976 Copyright Act be repealed and that the Register of Copyrights adopt appropriate registration regulations for machine-readable data bases. Some 20 months later, Representative Kastenmeier introduced H.R. 6934, which closely followed the CONTU recommendations; after passage in both the House of Representatives and the Senate, President Carter signed the bill into law in December 1980.⁴

EFFECT OF NEW COPYRIGHT LAWS ON DATA BASES

During the interim period while CONTU held public hearings and completed its study, the provisions of Section 117 of the 1976 Copyright Act were to be continued. Section 117 stated:

"117. Scope of exclusive rights: Use in conjunction with computers and similar information systems. Notwithstanding the provisions of sections 106 and 108, this title does not afford to the owner of copyright in a work any greater or lesser rights with respect to the use of the work in conjunction with automatic systems capable of storing, processing, retrieving, or transferring information, or in conjunction with any similar device, machine or process, than those afforded to works under the law, whether Title 17 or the common law or statutes of a State, in effect on December 31, 1977, as held applicable and construed by a court in an action brought under this Title."

This section was intended to be a stopgap while CONTU prepared its final report and was generally understood to continue the provisions of the 1909 Copyright Act. By virtue of its repeal in 1980, it meant that data bases would be covered under the 1976 Copyright Act like any other copyrightable work.⁵

In its report, CONTU addressed the issues discussed earlier and in a manner generally consistent with that of prior law. For example, overlap among data bases does not necessarily raise copyright problems, nor do similarities in format. Further, fair use was to follow guidelines applicable to printed materials; individual citations must still be subject to the systemized form in which the data are presented (expression vs. idea), and the copyright owner has the right to prepare the indices needed to utilize the data base. Perhaps of more significance were the issues of input and publication.

The input issue involved the question of whether copyright liability should attach at the input or the output stage of data base use in conjunction with a computer system. It was

concluded that the copyright owner has the exclusive right to store a computerized data base in the memory of a computer. The publication issue involved discussions closely linked to the technology of information delivery (i.e., "display"), and it was concluded that when the proprietor authorizes the transferees to distribute or make available displays of the data base (for example, to allow printouts at a terminal or to provide printouts on request), publication would be accomplished, and the notice and registration requirements of the law would take effect, assuming the copyright proprietor desired the maximum protection thereunder afforded to him.

Clearly, data bases that comply with the requirements of the 1976 Copyright Act for copyrightable works⁶ can be afforded the protections that obtain for copyrightable works generally.⁷ However, the Copyright Act of 1976 did not solve the problems of those involved in the information-delivery process. Given the aforementioned purpose of the new law (i.e., to reconcile the copyright laws with the new technologies), it is not surprising to conclude that many of the substantive issues that existed prior to January 1, 1978, are still unresolved. Such issues as whether a particular abstract is or is not a derivative work, whether notice requirements should be shown on one or every page of retrieved output, and whether "downloading" constitutes economic loss to the information source must still be resolved by applying applicable laws to the facts in each such matter. What the new law has accomplished, on the other hand, is express recognition that data bases are eligible for copyright protection, thereby ensuring that the economic benefits applicable to copyrightable works generally are likewise applicable to data bases.

ECONOMIC BENEFIT

Perhaps it is the concept of economic benefit that suggests the practical significance of the new copyright law as applied to data bases used in conjunction with computerized information retrieval. The availability of on-line bibliographic indices and abstracts has resulted in the creation of new markets for information, thereby benefiting all of those involved in the information-delivery process. In addition, the cost effectiveness of utilizing the new "tools" for information delivery help to expand the markets for information when compared to the more traditional methods and techniques utilized in promotion, distribution, and sale of information.

From the perspective of the information-service provider, the role of bringing the information seeker together with the information source is most satisfying, particularly when it is understood that economic benefits obtain for both the seeker and the source. Accordingly, the information-service provider has a significant stake in the protection of data bases by copyright. What role, then, should the information-service provider have in copyright protection of data bases? It is submitted that the primary role of the information-service provider with respect to copyright issues and data base use in conjunction with the new technologies is parallel to that role in the information-delivery process itself, namely, to bring together the information seeker with the information source. There are several ways that this can be accomplished.

First, the information-service provider should encourage (and perhaps require) the information source to provide all the necessary information to the service provider that is relevant to the notice requirements of the copyright laws. Although this might seem to be perfunctory, it must be recognized that improper notice may preclude the availability of maximum remedies for infringement (although a "grace period" of 5 years exists under the new law). Considering the practical aspect of notifying the information seeker of applicable copyright at the moment of login, in addition to copyright notices applied to on-line and/or off-line prints of

the information output retrieved, the intended purpose of the notice requirements of the copyright laws serves to protect the copyright owner at this important moment in the delivery process.

Second, the information source should provide the information-service provider with such additional copyright policy information as is appropriate to educate the information seeker with respect to special considerations and/or concerns of the information source. In this way, the service provider can inform the users of the on-line retrieval service of both permissible and prohibited uses of the retrieved output. Clarity of policies as they relate to the information seeker can only benefit all of those in the information-delivery process, whether they be policies relating to permissible photocopying for additional in-house distribution or to prohibited uses, such as resale of photocopies to others.

Third, the information-service provider can function as a special link to the information source by providing valuable information respecting the desires and concerns of the information seekers. In that a typical information-service provider receives requests from the information seeker for permission to utilize data base output retrieved in special ways, to the extent that trends of desired usage can be determined as a result of such requests, these data can only be useful to the information source to the extent that the information-service provider is able to inform and discuss them with the information source. It is submitted that the issues associated with downloading of data base content are relevant to this aspect of the information-delivery process.

CONCLUSION

The new technological tools of the information age enable the seekers of information to effectively locate and identify the sources of the information being sought, thereby creating new and expanded markets for the information. Although the new copyright laws have begun the process of reconciling the application of the law to the new technological tools that are utilized by modern information seekers, substantive issues remain unresolved, and the courts will continue their traditional role of interpretation of the law as applied to the facts of a given dispute. The economic benefits to all of those within the information-delivery process necessitate that copyright

protection of data bases be served by an educational process in which the information-service provider may act as an educational conduit between the information source and the information seeker. In such a role, the information-service provider serves not only the interests of the information seeker but also those of the information source as well, ensuring that the economic benefits of on-line information retrieval will continue and expand, just as will the new technological tools of the information-delivery process.

Although the fundamental concepts of copyright are rooted in the technology of print, the process of reconciling those concepts with the new technologies has begun. The Copyright Act of 1976 was not intended to resolve all of the issues applicable to copyright in the "Information Age" but, rather, was the first step in the reconciliation process. New innovations often tend to make ambiguous legal definitions of property and other rights that were perfectly clear before the innovations. Accordingly, those involved in the information-delivery process have the responsibility to seek clarity as new technologies emerge to foster the process and to make information available to anyone having access to the technologies. As this is an ongoing process, the information-service provider can assist in aiding the understanding of copyright issues affecting both the information source and the information seeker, thereby benefiting all of those involved in the on-line delivery of information.

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- (2) "National Commission on New Technological Uses of Copyrighted Works. Final Report"; Washington, DC, 1978; p 7.
- (3) For a general discussion of these issues, see: Wolfe, Mary. "Copyright and Machine Readable Databases". *Online (Weston, Conn.)* **1982**, 6, (July), 0000.
- (4) Public Law 96-517; 1980.
- (5) The definition of "literary works" in Section 101 of the 1976 Copyright Act is broadly interpreted to include data bases, as concluded by the CONTU Data Base Subcommittee in its report to CONTU (July, 1976).
- (6) See, generally, Sections 101 and 102 addressing originality and the scope of protection.
- (7) One should also consider the addition of the phrase "All Rights Reserved" to a copyright notice, if international protection is sought.