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ABSTRACT

At the fifth meeting of the National Commission on New Technological Uses of Copyrighted Works (CONTU) the Information Industries Association sponsored a presentation on copyright issues related to data bases, computer programs, and microform composition. Presentations were made by representatives of Standard and Poors, the New York Times, IBM, and Research Publications. The report on the New York Times Information Bank went into specific details about copyright problems--especially fair use (what kind and how much is unfair?). Other questions raised were: (1) When does a compilation of facts become a copyrightable item? (2) How can investments in data bases be protected? and (3) Who is the "author" of data base output? Other reports covered the influence of future technological developments, relevant projects at the National Science Foundation, and the status of copyright legislation in Congress. (LS)

NATIONAL COMMISSION

on

NEW TECHNOLOGICAL USES OF COPYRIGHTED WORKS

Meeting No. 5

April 1-2, 1976

Graduate Center, City University of New York

Commissioners Present:

Judge Fuld, Chairman

Mr. Nimmer, Vice Chairman

Mr. Cary

Mr. Dix

Mr. Hersey

Ms. Karpatkin

Mr. Lacy

Mr. Miller

Mr. Perle

Ms. Ringer

Mr. Sarbin

Mr. Wedgeworth

Ms. Wilcox

Others Present:

Mr. Levine, Executive Director, CONTU

Mr. Frase, Assistant Executive Director, CONTU

Mr. Applebaum (representing Dr. Boorstin)

Mrs. Morrisey

Michael S. Keplinger, Senior Attorney, CONTU

Jeffrey L. Squires, Staff Attorney, CONTU

AGENDA

April 1, 1976

Information Industries Association Presentation

Data Bases

Computer Programs

Microforms

New York Times Information System

Commission Discussion of Issues

April 2, 1976

Forecasting International Presentation

National Science Foundation Projects

Register of Copyright's Report on Copyright Revision

Commission Discussion

Research Plan and Timetable

Software Issue

Meeting Schedule

Summary

April 1, 1976:

1. The Information Industries Association assisted in the presentation by Mr. Herrenstein, Standard and Poors, Mr. Eustis, senior attorney of New York Times, Mr. Taphorn of IBM, and Mr. Freedman of Research Publications of issues arising from the technological experience of their companies in connection with data bases, computer programs, and microform composition, respectively. Mr. Paul Zurkowski, IIA President, introduced these presentations with emphasis on the issues and problems the information industry is facing as technological advances are changing the production of finding tools, information files, and informative abstracts.

Mr. Zurkowski outlined some of the questions that appear to be within the scope of CONTU's mandate: When does a data base, a computer program, or a microform composition become a work of authorship? As such, what protection rights are applicable to these works? What uses of data bases, programs, and microform compositions constitute "fair use?" What uses are considered as infringements? Should copyright protection preempt other forms of protection? What depository requirements are practical for these works? What future technological developments can be expected? How will the inter-related system of rights function in regard to further technological developments?

2. Standard and Poors defines a data base as a group of logically related data in computer-readable form, arranged and enhanced so as to be useful. The seven stages of "authoring a data base" are: selection of subject matter or theme, identification and gathering of sources, definition of data elements, design of format for the data base, collection of the data according to the definition and design (involving use of specialists in the designated subject fields), input and storage of the data (use of punched cards, magnetic tape, disks), verification and testing of data (similar to proofing of hard copy). It was argued that "a data base is as much a creation of a work as is a book of an author." (Mr. Wedgeworth and Mr. Nimmer pointed out differences between an author's creativity in writing a book and the compilation of facts or figures into a data base.)

Presentation of protection problems centered upon the increasing opportunities for unauthorized use of data bases and the need to have some national protection of these costly research products. When Standard and Poors leases its tape service to a brokerage firm, the latter can use it on its computer and can make the data available to others, who in turn can disseminate it in whole or in part or in modified form to its clients. Thus, the original investor and developer of the data base is deprived of wider sale of the original product. Although customer agreements are made, there are frequent uses that violate those agreements.

Discussion brought out the possible need to distinguish between facts per se (not copyrightable) and the arrangement of those facts in a data base. Standard and Poors objects to unauthorized pulling off from its data

base comparative analyses of entire industries and selling that project. Mr. Miller pointed out that use of data base not covered by licensing agreements is a contract problem. Standard and Poors' representatives cited a variety of ways in which "data thieves" gain access to their data base without their knowledge or without the knowledge of service bureaus to whom the data base has been leased. These "thefts" cost the owner of the data base in excess of one million dollars annually. It was remarked that hard copies are much easier to protect. Timesharing companies are forced to spend thousands of dollars in designing programs that will deny access to unauthorized personnel through the use of passwords. Dissemination of data through computers is the "way of the future", it was explained, and creators of data bases want to foster their use but they also want to receive a fair return on their investment.

3. Mr. Eustis described the New York Times data base as being comprised of informative abstracts of all issues of the New York Times from 1969 to data and abstracts from 60 other periodicals (the latter with permission of the publishers of periodicals). As in the case of the other data bases described, the Times is concerned about the "stealing" of its abstracts, which are protected by copyright. Court action is not a satisfactory way of dealing with this problem, and better remedies and protection are needed to prevent this piracy. There appears to be a need for the courts to relax the general requirement of proof of access because access is so easy and unauthorized use is sometimes difficult to prove. The matter of copyright notice (users object to getting a copyright notice when they ask the computer for a printout), deposit of data bases (the Times would not deposit its data base at the Library of Congress but perhaps a detailed description of it might be a substitute for the actual base; deposit requirements could be different for expensive data bases perhaps), and the need for a national umbrella (i.e., copyright) to protect compilers and producers of data bases were stressed.

Mr. Eustis suggested that the Commission look at Chapter 5 of the Statute and consider the possibility of relaxation of more of the formalities. Perhaps one copyright notice when a screen is first turned on could suffice, and a fee structure be tied to the right to use a data base.

4. Mr. Taphorn, IBM, discussed the instructions designed and entered into the machine to work with the data base. Eight issues were outlined in connection with computer program protection. These concerned:

(1) copyrightable subject matter;

(2) protection of substance;

(3) rights of proprietor;

(4) rights in executing program;

(5) rights involved in sending a program over the telephone wire;

(6) rights of a person who has second access to a computer program;

(7) copyright status of the result of operating a program on the data base;

(8) determination of the author of the result of program execution.

Computer programs are of three types:

(1) applications program -- designed to solve a customer's problem;

(2) hardware manufacturer's program -- systems control program;

(3) microprograms -- internal to the central processing unit.

Creation of programs involves:

(1) specifications;

(2) flow charts;

(3) source code (language used by the programmer -- COBOL, FORTRAN, etc.)

(4) object code -- used to run the computer and often marketed to the customer

A substantial amount of programming is done for internal use, and a lot is done to private order. Materials involved include printouts, tape reels, floppy disks.

Issues include:

(1) copyrightability of computer programs:

In 1964 the Copyright Office decided to accept computer programs for registration. The Senate Report 94-473 on the copyright revision bill indicates that computer programs can be considered to be an extension of copyrighted material which Congress intended from the beginninbg to protect, and therefore it does not need to be included in the revision bill. The Commission should consider whether computer programs should be specifically mentioned.

(2) What would be protected by the copyright? (the detailed expression of the instructions). The copyright proprietor of a computer program is faced with the situation that a program on a disk is read into memory and executed, then the disk wiped clean. Does recording the program

in the main memory into permanent storage constitute making a copy? Does moving instructions within the computer constitute making a copy? (It was noted in discussion that Section 102.b. of the revision bill was intended to make it clear that copyright on programs is not equivalent to a patent on an idea):

(3) rights with respect to outputting over transmission lines;

(4) rights of a holder in due course -- computer programs are marketed under a lease-use arrangement. CONTU, it was suggested, should make it clear that the program proprietor would have the same right in terms of reading the program into the computer that a dramatist has in terms of having his play produced; leasing the tape should not give the leasee a right to use it in a way that would be in competition with the owner. Should there be a performance right on the program?

(5) status of the result of program execution -- should the result of program execution be subject to copyright? Who would be the author of the product? (The computer itself may generate a data base -- who would be the author in such instances?)

(6) Author of the derivative work -- who is the author of the execution of the data base?

computer?

operator?

caller for information?

solution manager?

CONTU will need to consider:

the substance that is protected;

the rights that the proprietor has with respect to protecting programs in the computer;

the rights of a holder of due course; and

the circumstances within which the various issues arise.

5. Mr. Freedman, Research Publications, spoke on microform composition -- the production of material by the micropublishing industry and the business and scholarly use of microform equipment, and mounting costs make recovery of investment more difficult because editions are small. The easy availability of inexpensive copying equipment make unauthorized reproduction of microform products easy. CONTU should consider the need for clarification of the law and perhaps its modification. The law is cloudy with respect to the protection afforded. How much of a microform compilation may be copied without infringement of copyright? Should remedies be sought under unfair competition clauses? Should there be a relaxing of the 2-copy deposit requirement? (This is a burden to the producer of small (20 or less) editions.) Microform issuances are valuable

because they complete subject collections, increase accessibility, reduce processing costs, save space, have preservation advantages. These compilations often involve materials in the public domain.

The compilation of documents of the League of Nations was described as an example. It involved 25,000 League publications and other serial publications. The compilation was begun in 1966 and completed in 1975. Steps involved in its production were: a feasibility study-survey of material to be included, sorting of documents into 18 subject classifications, filming of documents by subject, filling in gaps from other sets of publications, correction of inaccuracies, preparation of bibliographic guide, preparation of abstracts.

There is need for clarification of the copyright law as it applies to this kind of production and product. What are the limits of "fair use" in this area? How can the material on the microform be protected, with the originals being in the public domain? A precedent may be the anti-piracy provisions in connection with sound recordings.

Mr. Nimmer pointed out the difficulty of determining the authorship contribution in the microform example described. Mr. Zurkowski spoke of the tendency to understate the functions of the micropublisher -- with the increasing use of microform there is an increasing need to encourage production and protection. The compilation based on the League publications was a complete set of documents -- a package that did not exist before the microform compilation.

Another example given was a current product based on two collections of historic economic literature. This compilation involves scholarly work in classifying materials in appropriate subject areas.

Questions to be dealt with here include: Can microform compositions be copyrighted as photographs? Does the conversion from paper to film constitute a work of authorship?

Mr. Zurkowski summed up the experiences in these areas. Some uniformity in protection is needed, and users and producers need to understand what their rights are. Some self-enforcing mechanism would improve the situation. Mr. Lacy referred to industry 's depending upon trade secret law to restrict access; copyright gives protection as an award for making material freely available.

6. The afternoon session in the Board Room of the New York Times gave the Commission opportunity to learn more about the Times' Information Bank and related publications and to see a demonstration of the use of the data base.

Judge Fuld expressed the Commissioners' appreciation for this opportunity and introduced Dr. John Rothman, who in turn introduced his colleagues on the Timnes. The purpose of the presentation was to explain the copyright concerns of the New York Times, the effect of the increasing use of the new technology on these concerns, and to describe the Times'

comprehensive information system. In its beginning year -- 1851 -- the New York Times began to prepare an index. In the 1860s the Index was published in book form -- the Annual Index for 1865 was the Times' first subsidiary activity, the forerunner of a conglomerate of widely ranging activities. These now include a radio station, the Times Index, the Times on microfilm (replacing bound volumes of the Times' syndicated news service. Today the Times is grouped into three major divisions: The New York Times newspaper, newsprint holdings, New York Times affiliated companies. The latter companies constitute an information conglomerate, composed of:

trade publishing
Microfilming Corporation
New York Times Book Company
photo-syndication service
teaching resources in Boston (primarily for the handicapped)
other education activities (School Weekly: large-type Weekly)
Magazine Division (Family Circle)
Broadcasting Division
A group of weekly and daily newspapers in the South
New York Times music company

These divisions can be grouped into two categories -- 1) those affiliated companies that draw their material from the New York Times, and 2) those that are independent of the content of the Times.

The Microfilming Corporation markets films of one hundred other nmewspapers, periodicals, and documents as well as the New York Times and Index. Arno Press, a reprint publisher, has some book tiles on the market that draw material from the Times. The Index is exclusively the Times. Some subsidiaries that do not use materials from the Times may have derivative products based on material that has appeared in the Times. Modern Medicine magazine, for instance, includes abstracts of material in other periodicals. The Cambridge Book Company has recently gone into the marketing of television cassettes as well as textbooks. The new technology is expanding the products of subsidiaries.

The Information Bank is the most costly of these ventures. The Index is input line by line into the real-time computer system. The Index also includes data from 60 other periodicals. The Bank consists of detailed informative abstracts with essential bibliographic information. Contents go back to January 1, 1969 for the Times and to 1972 for the other publications covered. Articles from the New York Times are clipped, photographed, and produced by microfiche. All the material from one issue of the Times can be put on one fiche. Subscription is based on an hourly charge of $50 and the subscriber pays the cost of the terminal and communication links.

Access to the Information Bank is relatively simple. A user can learn quickly to state his or her topic (subject terms or names), add specifications for particular time periods or special subject areas, receive

feedback from the system on the number of items in the Bank on the subject, make a choice from these, and receive a display. The average search is completed in ten minutes.

Some 200,000 items are added to the Bank each year. There is no present plan to add data from issues before 1969. Subscribers have indicated a preference for getting more current material from other publications rather than more historical material. The clipping morgue is relied on for data earlier than 1969.

The terminals (Hazeltine 2000) rent for $100 a month; telephone costs vary according to location. The average business subscriber uses the system an average of 20-25 hours a month and will pay an averag annual cost of $20,000 -- "less than the price of one good researcher."

Dr. Rothman explained that all of this came about as a result of the "information explosion" and the dramatic increase in the demand for access to research materials, one of the prime sources for which is the New York Times. "The Times is a public utility, especially for libraries."

This demand has prompted the Times to develop the various information activities. Other enterprises have also been developed by other companies, and this is where copyright enters into the picture -- some use Times material with permission and others use it without seeking permission. Dr. Rothman is interested in having some guidelines to help the Times decide when permission should be sought of and granted by the Times.

The Times attitude in this matter has altered over the past twenty-five years. It has been liberal in expecting its material to be used for educational purposes. Today the Times is more conscious of its investment in the content of the newspaper and the value of safeguarding that investment. It wants to exploit the added uses or reuses of the content of the newspaper itself.

The following products and services draw upon the content of the Times, some with and some without permission:

(1) commercial clipping services

(2) libraries (subscriptions to the Times in branches have declined; library cooperative arrangements mean fewer papers)

(3) indexing and abstracting services (Book Review Digest, Film Review Digest, new computerized services such as Environmental Abstracts and industrial indexes)

(4) information on demand services (some of these supply clients with copies of articles from their microfiche)

(5) publishers of anthologies, almanacs, yearbooks

(6) educational institutions at all levels (materials now being copied as a substitute for textbooks in anticipation of large classes)

(7) public relations firms, newsletters, trade publications, etc.

Most of these use computers, microprinters, and other related equipment in reproducing content from the New York Times. The Information Bank uses material from other publications only with permission of the copyright owner. This permission is received through an exchange of letters -- no fee is involved. The Times extends to these and other newspapers and periodicals access, to its research facilities and the right to make abstracts of Times data.

The Times placed before CONTU such questions as:

(1) What is fair use? (The Times would like to limit the right of others to make a photocopy of the contents of the paper either from clippings or from microfiche or microfilm. This includes the question of public libraries acting in concert with a single periodical's archive.)

(2) Would the following criteria be valid in defining fair use?

a. Copying of one or more discreet items for internal use by the copying institution or for the use of its casual or transit patron;

b. the copy is not sold in any way and is not part of a product or service that is sold;

c. the act of copying does not significantly reduce the opportunity for additional sale of the product by the copyright owner;

(3) Could unfair use be defined as copying by techniques other than paper to paper or film to film? (It would seem best to copy a computer data base on to another computer); any copying that involves other than one or several discreet articles can by definition not be considered fair use because this constitutes copying of a collection for multiple uses. Copying of a discreet item can take place only paper to paper or film to film; copying on to another medium, such as a digital storage device, involves copying a complete body of data. Perhaps unfair use could be defined as "anything that involves copying of more than one discreet item at a time." The medium used would help to define the amount of material being copied.

(4) Does copyright protect only against verbatim copying of the actual document? Is this obsolete? What about condensations and other kinds of derivative services that copy in briefer form?

Mr. Nimmer responded to this by explaining that in cases where the work is largely factual, the protection goes beyond verbatim. However, it must be considered whether protection of facts per se is being sought. Dr. Rothman referred to the increasing amount of interpretative and analytical material that appears in the newspaper -- others are using it without permission because they think it is in the public domain. When the Times taps other sources of information, it is with their knowledge and consent, Dr. Rothman said. Is there some protection through neighboring rights? (A reverse situation mentioned was publication by the Times of the Pentagon papers.)

Mr. Miller noted that the Times position goes beyond the matter of the technology. The Times created the voter survey news; the fact of this creation gives the Times some added neighboring rights. Beyond this there is the question of fairness or unfairness in the business environment. Dr. Rothman referred again to the question whether the contents of the Times and other publications should be protected in some manner against exploitation by secondary services, especially where they rely on informative abstracts that serve as substitutes for the original article. To what extent should the copyright law protect against such commerical exploitation?

Ms. Karpatkin asked whether permission to the Times to do abstracts of material in other publications was granted on the basis of other publishers' feeling that the Times had a right to publish even without permission. Dr. Rothman did not believe this was the case. Mr. Wedgeworth asked if it mattered whether or not anything new or creative was added to the product. Dr. Rothman felt permission should still be sought. "If commercial uses are made by others of the Times material, the Times should be entitled to get some compensation." Dr. Rothman made it clear at this point that these are personal questions he is raising -- they are not recommendations to CONTU.

Mr. Miller focused on the question whether the Times has a proprietary right in regard to facts -- the gathering of facts, the presentation of facts, and the compilation of facts in a particular sequence articulated in a particular fashion. Dr. Rothman spoke of the interpretative talents of the reporter -- it is this effort and investment that makes the New York Times the paper that it is.

The presentation closed with emphasis on the increased problems of the nature described that are coming with the advance of technological applications in this field. And with the increased equipment uses, costs are lowering, so that economical facsimile reproduction will become commonplace. The continuing trend is toward cheaper and better computer communications.

The Times is now beginning to implement plans for a completely automated system, with the reporter filing his story via a terminal, on automated equipment in a composing room,. and fully automated printing of the newspaper. All of this will bring new and additional problems of proprietary rights.

7. Judge Fuld thanked Dr. Rothman and his colleagues for the interesting and informative review. There were further questions from and discussion by the Commissioners. Ms. Karpatkin asked whether the publishers' interests would be served by increased quantity and quality of protection. Dr. Rothman's reply referred to the millions of dollars spent by the Times in creating its products. The ability to exploit this investment further is very important to the Times. There is increasing confusion about such questions as what adds to the creativity of a product. The copyright act was designed to provide protection for the original creator; otherwise, he might not create. It would seem to be in the public interest not to have a proliferation of duplicate services dealing with the same amount of subject matter. The library community, for instance, could be served well from one authoritative reference source for each discipline. Mr. Eustis talked of the national network concept of the National Commission on Libraries and Information Science. The New York Times, he added, has already built an enormous body of information without govvernment subsidy.

Mr. Levine asked about possibilities for home terminals in the future and their substitution for the daily newspaper. Skepticism was expressed as to the likelihood of such services in the 21st century ever replacing printed newspapers, although content and marketing practices will ultimately be affected. It will not be feasible in the next few years to display large amounts of text through television tubes. Two or three paragraphs of the ordinary news story are all that can be displayed now through the terminal. The TV services will be used for display of some tabular material, guidelines, recipes, entertainment notices, sports reports, but people are expected to still want to buy the newspaper. There are other reasons favoring the newspaper also -- it is portable, and the reading habit is ingrained in the majority of the populace.

Mr. Dix inquired about the economic feasibility of a printer being activated by a satellite. It was felt this would be a long way off; technology is customarily ahead of economics. It was emphasized, however, that CONTU must be concerned with these creative forces -- there will be an interactive cable operation within the next five to ten years and CONTU has to worry now about protection for that time and beyond -- other wise material now protected by copyright will not be protected under the new technological developments.

8. After the Times demonstration at a terminal, discussion by the Commissioners resumed. The following points developed from the discussion of the day's presentations:

(1) the need to clarify the distinction between authorship and computer compilation (a distinction in the law may be needed; constitutionally facts cannot be protected by copyright -- the law gives copyright protection to the authors for their creative ideas derived from facts but not to the facts themselves. Judge Fuld questioned whether it would be possible to undertake a full analysis in this area in the Commission's time period. Mr. Levine explained that the CONTU staff is working on an

analysis of present copyright law in regard to facts, compilations, computer uses in preparation of directories, news reports, etc.);

(2) consideration of possible limitations on uses to be made of data bases and products derived from them (reference was made to antitrust cases re protection of sale of certain items by contract; in sales there is a possibility of violation of antitrust law if there is an attempt to inhibit a purchaser's use of the item purchased; in leases there is a bit more latitude);

(3) possible segregating of those areas of the computer-production problem that might be protected by copyright and placing in another category the other areas that appear to be more related to contract and trade secrets law. Perhaps a separate statute is needed to deal with the bulk of the protection issues of computer software and data bases.

In advancing this possible approach, Mr. Hersey noted that although the presentations refer to processes of authorship, many of the issues seem to fall between the realm of copyright and that of patent. Authorship has been described as spitting out subsets of names or numbers from a data bank, but who is the author of the data base? The question might be dealt with more rationally in a separate statute, with the copyright issue confined to those technological applications involving input of copyrighted material into the computers.

Others felt that protection of the data base was definitely part of the Commission's mandate. Mr. Cary mentioned the need to reexamine the mandate. Mr. Sarbin suggested that the Commission must address itself to the philosophy of encouraging protection in all of the areas covered in the presentations. Mr. Perle saw the need to recommend a philosophy to govern the manner in which the copyright law should deal with different kinds of intellectual property, including that created by machine.

Mr. Nimmer referred to the two aspects of the computer productions:

(1) creation of new works by computers, both data banks and software; and

(2) input of copyrighted materials into the computer and subsequent output of a computer product. Does this constitute an infringement of copyright?

Mr. Hersey suggested that the computerized creation of new works, including data bases and software, could be considered in terms of a new statute, with the copyright act continuing to be concerned with protection of the expression of authors -- he explained that copyright was originally designed to protect the word -- a new form of protection, between copyright and patent, seems to be needed for the computer. The political duty of the writer is to protect the language; otherwise, it is corrupted; when it is corrupted, people do not understand it, and violence is the result.

Mr. Levine mentioned the products that might come from a weather satellite -- who is the author? If materials are input into a computer from which an index is produced, who is the author of that particularly formatted index?

Mr. Hersey recalled the frequent changes in the content of data banks, the updating that is an inherent part of the computer activity This argues for a new concept. Mr. Miller pointed out that the copyright law no longer protects the word to the exclusion of other things -- the copyright law has already been extended to maps, films, telephone directories. The situation becomes more complicated with the computer, but there are going to be a vast number of works created by the computer, and many of them go beyond the matter of data bases and programs. Authors will be creating directly into the computer; computer-generated art is already here.

Mr. Hersey suggested that the computer adds another category to the word. Much of the computer works concern numerical terms -- they involve processes, and a process is not a means of expression. Mr. Nimmer spoke of design being treated as a separate category in the current copyright revision bill. There could be some validity to giving a different measure of protection to some computer work. Mr. Miller agreed that one solution could perhaps be to suggest different kinds of protection for different kinds of products; this approach would meet Mr. Hersey's objective. A cultural issue here, Mr. Hersey added, is not to let art and culture suffer in the way it might if the copyright act is allowed to be overwhelmed by this enormous new industry. Mr. Cary noted that "useful art" applies to patents, and science to copyright, in existing law. Science referred to art and literature when the original law was passed.

Mr. Perle referred to the need to designate all types of products in this entire area, irrespective of whether or not they involve machines. Discussion continued, with some consensus on considering the problem in two parts, though both parts may need to be provided for in the CONTU recommendations. It was remarked that the businesses reported on today want protection against unfair economic competition. The compilers of data bases and the designers of computer programs want to protect the labor that has gone into these products. The labor of the author is protected by copyright, which traditionally has been concerned with protection of the means of expressing of ideas.

April 2, 1976:

9. Findings and results of the study of technological influences upon future alternatives to today's scientific and technological journals were reported by Norman Nisenoff, Forecasting International. These analyses and results, displayed in charts and graphs, showed such trends as an increase in the annual number of graduate students and doctorates granted, an increasing percentage of the population being concerned with this literature, economic changes, the accelerating need for scientific and technical information, the rising number of books and journals published throughout the world, the growth in communications including electronic, the increasing number of international conferences and interaction in the diplomatic and scientific world, the growth of universities and library holdings, and other comparative data illustrating the many forces contributing to greater exchange of information in American society. Journal publication is continuing to rise dramatically, especially in the natural sciences, engineering, and the social sciences. This is attributed to the great pressure to publish. Costs are rising at unprecedented rates, and the average time between time of submission of a journal article and publication date is widening (varies today from 8 to 22 months). Thus, data are often noncurrent by the time of publication. As prices climb, the number of subscriptions decreases, and libraries especially are facing very critical financial problems.

The extent to which technological developments in the next twenty-five years will alter present practices was illustrated by projections of technological trends in the future. Expansion of telecommunications is a certainty, a significant decrease in communications costs will come as technological uses increase. The cost per circuit decreases as more and more information is transmitted at one time (the estimated cost of a 2-way voice channel via satellite in the year 2000 is estimated to be about $10). The forecasting studies show an estimated 100,000 computers (including minicomputers and microcomputers) in the United States by 2000. Prices will be lowered, so that microcomputers will cost only a few dollars. The proliferation of these inexpensive electronic tools will make many changes in education, recreation, and industry. Some time after 2000 there will be more terminals than telephones. Scientific and technical journals will then be transmitted through use of computers.

The steps involved in production of a journal were examined by Mr. Nisenoff, who then defined the variables that could be used to replace the journal -- visual, audio, computer usage. A possible solution to the journal problem may be the dictation of information into the computer, which then indexes it; the information is accessed through the computer; the information can be reproduced by the computer to another magnetic tape; it can be transmitted to users who can put it on minicomputers at home. There are many other possibilities. These may involve dialing in the home for synopses of information in specific disciplines and for specialized information (by 1980), dedicated television programs for transmission of information in specific fields (1978-85), expansion of that concept (1986-90), the possibility of scheduling special interest materials, hard copy material available by mail, 2-way cable television.,

This chain of possible developments is leading toward the concept advanced by Vannevar Bush in 1945 -- an enginner and scientist would have a desk to store all the information needed, a TV screen to read the information, a keyboard for communicating with the data.

Flat screen TVs are now almost here. As more and more information is transmitted in these new ways, publication of the classic journal will decline. Data will be transmitted much more freely on a one-to-one basis. Distance will not matter, and there will be less monitoring; a user will be able to dial into a machine a request for a copy of a particular title. A set of notes will be made available on the system. Informal communications and individual exchange ("invisible colleges") will replace today's more formal approach. Journals will not die completely,, but they will be less significant in research. The real communications will be person-to-person; the user will depend upon others working in his field; he will need to be a member of the group before he can publish. There will be more fragmentation of professional societies and more specialization.

Some disadvantages were enumerated in the discussion -- printed materials are easier to read -- but the studies indicate that economies will force some of these changes. The user will have many different options. Mr. Sarbin pointed out that the manufacturer or compiler or author of the information will want protection for what he or she has created irrespective of the method by which the information is disseminated. Mr. Wedgeworth referred to the high cost of creating indexes to improve access -- the cost of indexing and getting material into the system will outweigh initial costs of producing the information.

Mr. Nisenoff recognized that there are many problems; some of these were outlined in the last page of the document distributed to the Commissioners. Despite these problems, however, it is evident that technology is not a limitation for the future. The problems are human, social, political.

10. Dr. Goldhar, National Science Foundation, spoke on research projects, supported by NSF, that have relevance to the work of the Commission. Although scientific information constitutes only 1 to 2 percent of the entire information business, it is an important area for the consideration of the Commission for several reasons. Some of the findings about its users are transferable to the larger information economy. Research and development in engineering are heavily supported indicators of what will be happening in the 1990s. The Commission will need to look at least at possibilities for the year 2000 because it will take that long for changes to be effected in the Federal regulatory environment.

Studies of economic characteristics of the information industry indicate that information is the only product that can be sold simultaneously to more than one user and that can be sold several times to the same user. Scientific and technical information is used as an intermediate product;

the input of this information is generated heavily from public funds. Federal information services, not-for-profit information services and profit information services all have the same need to recapture their operational costs, although the legal means for doing so may be different. Dr. Goldhar suggested that the legal regulatory environment in which science and technical information operates may need to be different, with special consideration given to the way in which such information is used: an intermediate rather than an end product and tied to researdh and development in engineering. Dr. Goldhar saw the need for incentives to be established in order to have an ongoing science information service.

Issues developing from NSF studies include the following: How do we provide incentives for an alive information service industry? How does the distinction between authors of ideas and manufacturers of science information products affect property rights? Is it timeliness, place, format, and delivery that create value or is it use that creates value? What kinds of legal constraints are needed? To what extent does the information product make it a unique industry? What special legal protections are needed because of the differences in the industry? How shall the distinction be made between copyright protection and unfair trade practice? What is the role of the open market place? Are people expecting the copyright law to solve problems that may be better solved through other means? Is it in the interest of users to encourage exploitation of one large computerized service in order to keep costs down?

Future changes in publishing will bring a range of publications from abstracts to synopses, to full texts -- all from the original author. Communications packages produced through the computer will replace traditional scientific articles, and response from readers will be recorded in the computer. Dr. Goldhar emphasized the fundamental changes anticipated in the way scientists and engineers do their work and communicate in their work; traditional libraries will disappear, he felt, and publishers will sell directly to users through electronic means. Libraries will become local manufacturing centers; the user will pay for the materials he takes from the library. There will be more photocomposition and more technical assistance to technical writers. Dr. Goldhar saw copyright issues as being part of a larger question of incentives for generating, manufacturing, and using information. Scientific journal articles could be considered as works of utility not subject to copyright. Many of the problems presented to CONTU by industry may be problems of the market place rather than copyright.

11. Judge Fuld opened the afternoon session with an expression of appreciation to the Executive Director for the background volume he and the CONTU staff prepared. Ms. Karpatkin added her appreciation of this material, and Mr. Levine thanked the staff members who spent much time preparing the volume.

Judge Fuld then introduced the Register of Copyrights and thanked her for the tremendous effort she has put into copyright revision and the work she is currently doing on the markup (the revision bill should be identified as the Ringer bill).

12. Ms. Ringer reviewed for the Commission the status of the copyright revision bill. It unanimously was passed in the Senate on February 19. Markup in the House had begun; the library photocopying issue had not moved nearer resolution and the atmosphere was deteriorating. A series of meetings had taken place under the auspices of the National Library of Medicine and Williams and Wilkins. A debt is owed to the lawyers in that case; they came to an agreement, which has required both sides to focus on the issues and resulted in some progress, although it is not yet known what will emerge from this effort.

The library community has felt that these developments were diversionary. Ms. Ringer explained that this was not the case -- the effort was to try to find a solution to the issue. In February 1976 a letter went to the House Subcommittee from the principal library associations indicating that the librarians were going to work for removal of Section 108.g.2.

The House Subcommittee has been attempting to settle this issue. A meeting at NLM produced a document from the staff of the Subcommittee to the Chairman indicating that the staff felt an agreement was possible. A proposal was formulated, with the provision that if user demand did not justify the purchase of an original item, a library would be free to request or supply a photocopy. Standards and criteria concerning the number of copies to be involved, types of materials, turnaround time were left to the Royalty Tribunal to determine. The proposal was not successful and it may have been because these criteria were left undetermined.

The library associations did not accept the proposal and agreed, after a meeting with the Subcommittee Chairman, to submit some additional language. The publishers and authors worked on and submitted a redraft of the proposal, but upon learning of the opposition of the library groups, they withdrew.

At its third markup session the Subcommittee finished with Sections 105, 106, 107, and went into 108. There were some significant developments in connection with 107 that bear upon this problem. Section 107 was the grandfather of the photocopying issue. The encouraging work on 107 resulted in some modest changes in fair use; an agreement was signed by representatives of the Authors' League and publishers concerning guidelines for classroom copying; this statement lays out in some detail guidelines and minimum standards concerning educational fair use. It was recognized that changes may be necessary in the future. The cooperation evident in resolving differences in this section should carry over into the photocopying issue.

Documents of March 2 and 26 in the Commission book may provide some basis for an interim solution on photocopying. A common ground could be recognition that a body such as CONTU should have continuing oversight of this problem until a more permanent solution is reached. The Register reviewed the position and proposals of the librarians in detail. If agreement could be reached on intermediate language for Section 108.g.2, the publishers might not oppose a provision such as the last one in the librarians' March 26 document. An oversight body could have some positive effect here -- provision for a group to make a report in five years to Congress on how the plan was working.

Although the language proposed by the librarians and the publishers is different, the thinking between the two may be closer than is evident at first glance.

The Subcommittee will meet next week to decide what to do with Section 108; a markup session is scheduled for next Wednesday, April 7. There is not time for further debate among librarians and publishers. Mediation efforts have not been accepted. The Subcommittee will be faced with choosing one of the alternatives mentioned or devising its own. A solution could be the development of guidelines that both publishers, authors, and libraries would live with for the next five years, coupled with a reporting requirement. CONTU might find a meaningful role in this area.

The librarians do not want all of Section 108 thrown out; they would like to eliminate 108.g.2 but keep the remainder. The publishers want to keep 108.g.2 but would be willing to have the entire Section 108 removed. Guidelines or standards will not go into the bill, but a suitable arrangement to assure development of guidelines and a reporting mechanism could be a successful approach.

Discussion emphasized the contribution CONTU could appropriately provide here. Perhaps the law could go into effect without guidelines if CONTU were called upon to supply them by a specific time. Mr. Wedgeworth moved, and Ms. Wilcox seconded, that CONTU offer its assistance to the Subcommittee of the House Judiciary Committee in helping to develop language and guidelines focusing on library photocopying in Senate Bill 22. The motion passed unanimously.

It was understood that this resolution would be presented to the Subcommittee early next week. Judge Fuld will telephone the Chairman, and Ms. Ringer and Mr. Levine will arrange for its presentation.

The Commission recognized the time that will be required to develop guidelines. Perhaps a small subcommittee will be named to work on this important matter. Mr. Lacy and Mr. Nimmer outlined some of the possible avenues of approach.

Turning to cable TV, the Register reported progress toward a compromise solution. The issues on performance rights and sound recordings are difficutl; this is not covered in the Senate bill; unions are

mounting a massive campaign to get this back in. Further controversy is expected. Even with all the undecided issues at the moment, there is a reasonable chance that the revision bill will go through.

13. Mr. Levine reported on the CONTU appropriation. He asked for authority to proceed with hiring additional staff in order to have the full 16 that have been authorized. The Commissioners voted to remove the restraints on hiring. Staff will be hired at the discretion of the Chairman and the Executive Director. In response to a question about consultant services, he stated that next year's budget includes $43,000 for outside consultants.

Mr. Levine asked about the degree to which the Commission wants to go into forms of software protection. Mr. Lacy suggested that CONTU will need to say what it thinks should be done in copyright; if something beyond this is needed, CONTU can so indicate. Mr. Levine raised the question whether CONTU 's responsibility extended to recommendations concerning protection other than through copyright. Mr. Nimmer pointed out the need to distinguish between what is copyright in the statutory and constitutional sense. Insofar as data banks involve facts, that is not within the scope of CONTU. Mr. Hersey repeated his concern about any effort to put execution of computer programs into performing rights -- these are different matters and the protection needed for each is different. Mr. Lacy suggested the value of examining the entire problem even though it may be determined that some areas need protection through some other means than copyright. Ms. Karpatkin did not see software as being copyrightable, but she recognized the protection problems that should be addressed by CONTU, even though the decision may be to exclude some areas from copyright and provide protection in some other way.

14. Next Meetings. May 6-7 and June 3-4 were confirmed as the next meeting dates. The Commission will hold hearings on the computer software issue at its May 6-7 meetings. Those who have given thought to the protection of software may submit specific language to the CONTU staff; Ms. Karpatkin referred to the importance of including all of the interests involved; small producers may have an interest different from that of larger ones. Mr. Levine explained plans for a questionnaire to be sent to groups; hearings will be arranged as a result of response to the questionnaire. EDUCOM, ASIS, heads of university computer centers will be consulted in this connection.

15. Mr. Lacy commended the CONTU staff for its work, and Mr. Cary expresssed appreciation to Mrs. Morrisey for the summary reports on the meetings.

Marlene Morrisey
April 6, 1976