
Chapter 9

**Federal Role in the
Administration of Intellectual
Property Rights**

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Federal Role in the Administration of Intellectual Property Rights

FINDINGS

Assuming that the granting of exclusive property rights to individuals would automatically lead to the creation and public dissemination of information, the Nation's first legislators ascribed to government a relatively inactive role in the intellectual property system. Accordingly, the Federal role and corresponding institutions have evolved to perform minimal regulatory functions. The system was designed to be self-enforcing; the government institutions granted rights, registered works, and the individual creators and users were responsible for protecting their rights and enforcing them through the courts.

Today, however, the emergence of new information and communication technologies is placing new demands on governmental institutions responsible for the administration of intellectual property rights. The question arises, therefore, of whether existing Federal institutional arrangements for the administering intellectual property rights, as initially

designed, can adequately cope with new technological developments and the new responsibilities that may be placed on them.

To manage these stresses, Congress has several options that it could pursue. These options range from leaving the agencies as they exist to completely restructuring them. Before considering institutional arrangements for the administration of rights, however, Congress must first make overall decisions about the intellectual property system itself. Congress must determine which goals it wishes to promote, which laws and practices to establish, and how to balance competing interests in light of the effects of new technological developments. It must also determine whether the role of government in the intellectual property system should be regulatory or nonregulatory. Only after such decisions are made, can Congress begin to construct institutional arrangements for the administration of intellectual property rights.

INTRODUCTION

The granting of intellectual property rights can be viewed as a public policy tool designed to achieve policy goals. Historically, governments have granted intellectual property rights to meet different policy goals. Such goals, for example, have included economic development or industrial policy, regulation of trade, censorship, promotion of public learning, and the development of a national culture. The particular role governments play in intellectual property systems depends to some extent on the goals the policy is designed to foster.

Early in the evolution of the United States, the Founding Fathers clearly viewed intellec-

tual property policy as a means to promote the progress of science and the useful arts, and to disseminate such knowledge to the public. They believed, moreover, that public dissemination of information would help to meet the other overriding societal needs of the time—to develop an industrial base, create a national literature, and maintain the level of knowledge among citizens required to sustain a democratic polity.

Assuming that the granting of exclusive property rights to individuals would automatically lead to the creation and public dissemination of information, the Nation's first legislators ascribed to government a relatively

inactive role in the intellectual property system. This role corresponded to their preference for a free market approach, and alleviated their fears of overly centralized government. Accordingly, the Federal role and corresponding institutions have evolved to perform minimal regulatory functions. The system was designed to be self-enforcing; the government institutions granted rights, registered works, and the individual creators and users were responsible for protecting their rights and enforcing them through the courts.

Today, however, the emergence of new information and communication technologies is placing new demands on governmental institutions responsible for the administration of intellectual property rights. In reaction to the development of new technologies, for example, policymakers have passed legislation that calls for government to take on new or increased responsibilities. This raises the question, therefore, of whether existing Federal institutional

arrangements for administering intellectual property rights, as initially designed, can adequately cope with new technological developments and the new responsibilities that may be placed on them.

To examine the current Federal role in the intellectual property system and how it may change in response to new technology, this chapter will:

1. describe the development of the goals and rationale for the Federal role in the intellectual property system and under what conditions it worked effectively;
2. characterize the current Federal institutional arrangements for dealing with intellectual property issues;
3. describe how technological developments may be stressing such arrangements; and
4. explore the implications for future institutional arrangements.

DEVELOPMENT OF U.S. INTELLECTUAL PROPERTY POLICY

Goals for Granting Intellectual Property Rights

In the United States a unique set of social, political, economic, and technological factors gave rise to a specific set of policy goals that intellectual property rights were designed to achieve. These factors, moreover, shaped the design of the Federal role in the administration of intellectual property rights.¹

During the early history of the United States, the Founding Fathers adhered to the belief in the right of the individual to own property and pursue his intellectual interests.² The

early legislators also recognized the importance of a democratic polity, which required public dissemination of knowledge to function adequately.³ Because the United States was a developing country, its policy makers also wished to stimulate industrial growth, particularly in light of the burgeoning industrial revolution taking place in England.⁴

The Framers of the U.S. Constitution recognized that the granting of intellectual property rights was one way to achieve such basic social, political, and economic ideals. They believed that granting these rights would pro-

¹See ch. 2 for a discussion of how different historical circumstances influenced governments' use of intellectual property rights to achieve varying economic, political, and social goals.

²John Locke, for example, was one of the most influential philosophers on the Framers of the U.S. Constitution. Locke stated, for example, that "Every man has a property in his own person. The labor of his body and the work of his hands we may say are properly his." Garry Wills, *Inventing America: Jefferson Declaration of Independence* (New York: Doubleday & Co., Inc., 1978), pp. 229-239; and Bruce Bugbee, *Genesis of American Patent and Copyright Law* (Washington, DC: Public Affairs Press, 1967), pp. 84-125.

³These beliefs originated from the ideas of John Locke and Jean Rousseau. See, for example, John Locke, *Second Treatise on Civil Government*, 1690, and Jean Jacques Rousseau, *Social Contract*, 1762. Gordon Wood, *The Creation of the American Republic, 1776-1787* (North Carolina: University of North Carolina Press, 1969), pp. 53-65; and Bruce Bugbee, *The Genesis of American Patent and Copyright Law* (Washington, DC: Public Affairs Press, 1967), pp. 84-125.

⁴Hunter Dupree, *Science in the Federal Government: A History of Policies and Activities to 1940* (Cambridge, MA: The Belknap Press of Harvard University Press, 1957); and Bruce Bugbee, *Genesis of American Patent and Copyright Law* (Washington, DC: Public Affairs Press, 1967), pp. 84-125.

vide incentives for creators or industries to produce and disseminate works, which would promote public education and industrial growth. To provide an initial framework for this policy, the Framers included the clause in the U.S. Constitution:

To promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries. (Section 1, Article 8, clause 8.)⁵

In *The Federalist*, James Madison clearly establishes the overall purpose of granting rights to individuals, which was the automatic promotion of the public good:

The utility of this power will scarcely be questioned. The copyright of authors has been solemnly adjudged, in Great Britain, to be a right of common law. The right to useful inventions seems with equal reasons to belong to the inventors. The public good fully coincides in both cases with the claims of individuals. The States cannot separately make effectual provision for either of the cases, and most of them have anticipated the decision of this point, by laws passed by the insistence of Congress.

A later, more definitive interpretation of this overall purpose—the stimulation of the creation and dissemination of information to the public—was stated in a legislative report on the Copyright Act of 1909:

The Constitution does not establish copyrights, but provides that Congress shall have

“The intended goals of this clause become very apparent when the original two proposals concerning intellectual property which were proposed during the Constitutional Convention are examined:

Madison’s proposals envisioned a national legislature with the authority to “To secure literary authors their copy rights for a limited time, To establish a University, To encourage by premiums and provisions, The advancement of useful knowledge and discoveries”; The other set of proposals was offered by Charles Pickney, and included the following contemplated powers: “To grant charters of incorporation, To grant patents for useful inventions, To secure to Authors exclusive rights for a certain time, To establish public institutions, rewards, and immunities for the promotion of agriculture, commerce, trades, and manufactures.

Bruce Bugbee, *The Genesis of American Patent and Copyright Law* (Washington, DC: Public Affairs Press, 1967), p. 126.

⁵Alexander Hamilton, James Madison, and John Jay, *The Federalist Papers, No. 43* (New York: The New American Library of World Literature, Inc., 1961), pp. 271-272.

the power to grant such rights if it thinks best. Not primarily for the benefit of author, but primarily for the benefit of the public, such rights are given. Not that any particular class of citizens, however worthy, may benefit, but because the policy is believed to be for the benefit of the great body of people, in that it will stimulate writing and invention to give some bonus to authors and inventors.’

Federal Role in the Administration of Intellectual Property Rights

The Federal role in the administration of rights evolved in a way that clearly reflected the goals of the U.S. intellectual property system. Similar to the development of the goals of intellectual property rights, political, economic, and technological factors influenced the type of role that Congress designed for the government in the administration of such rights.

First, Adam Smith’s ideas of a free market, non-interventionist approach that could provide economic incentives and an efficient mechanism for markets and economic growth were increasingly accepted.⁸ Reacting against the English Government which used excessive regulatory controls, Americans also favored the Jeffersonian notion of a government with as few regulatory functions as possible.’ Additionally, the major technology of the time, the printing press, allowed the granting of rights to lead automatically to the dissemination of information. This was so because works had to be published in order to enjoy protection. Moreover, in the absence of inexpensive reproduction technologies of today, publishers could more accurately estimate the returns on their investments and, thus had more direct economic incentives to publish works. Rights

⁸House Report No. 2222, 60th Cong., 2d sess., as cited in Alan Latman and Robert German, *Copyright for The Eighties* (Charlottesville, VA: Michie, Bobbs-Merrill, 1981), p. 12.

⁹Charles Beard, *An Economic Interpretation of the Constitution of the United States* (New York: Free Press, 1965); and Adam Smith, *The Wealth of Nations, 1776* (New York: The Modern Library, 1937).

¹⁰Alexander Hamilton, James Madison, and John Jay, *The Federalist Papers, No. 39-46* (New York: The New American Library of World Literature, Inc., 1961), pp. 240-300; and Julian Boyd (ed.), *The Papers of Thomas Jefferson* (Princeton, NJ: Princeton University Press, 1950).

owners could also enforce their rights themselves because infringements were relatively easy to detect.

Under these circumstances, the early legislators believed that the intellectual property system could function adequately with minimal government intervention if left to its own devices:

When printing was the only information technology of any significance, eighteenth century policy makers conceived of an arrangement for knowledge-dissemination and compensation in society that was elegant in its absence of centralization and administration. Lawyers set up the machinery for granting exclusive rights to copy to those who wrote and to those who controlled the presses; Adam Smith's "invisible hand" took care of the details. As Madison noted, copyright provided an efficient means of achieving the constitutional goal of promoting science and the useful arts because it was one of the fortuitous policies in which the ends of the individual citizen and the goals of the collectivity could be made synonymous. Copyright, in short, was not a bad idea at the time.¹⁰

Consequently, the legislators of the Patent and Copyright Acts of 1790 designed a relatively inactive role for the Federal Government in the intellectual property system. These Acts clearly delineated the exclusive rights to be granted and the conditions under which they would be granted, and established the role of government as simply a register of works seeking protection. The acts also required creators who wanted to protect their works to publish them in local newspapers. The registration function, like the publication requirement, closely corresponded to the goals of intellectual property policy. For the repositories of submitted works and the publication of those works in public institutions were primarily for the public to access and learn from, thus fulfilling the original intent of the granting intellectual property rights.

The institutional arrangements for registering works were also created by the legislation

¹⁰Nicholas Henry, *Copyright, Information Technology, Public Policy* (New York: Marcel Dekker, 1967), pp. 56-57.

of 1790.¹¹ The Patent Act established a Patent Board, which was made up of the Secretary of State, Secretary of War, and the Attorney General. Referring to themselves collectively as the "Commissioners for the Promotion of Useful Arts," the members of the board were empowered to issue a patent for any device or process "if they shall deem the invention sufficiently useful or important. The statute also established a Register of Patents, to be kept by the Secretary of State.¹² The Copyright Act required the local District Courts (nearest to where the person seeking protection lived) and the Secretary of State to register and serve as depositories of creative works.¹³ And the courts, of course, served to interpret any problems rights owners or users might have enforcing their rights.¹⁴

Early Development of the Governmental Institutions for the Administration of Intellectual Property Rights

Since 1790, several factors have affected the evolution of the governmental institutions set up to administer intellectual property rights. These include the increasing number of crea-

¹¹Before such institutional arrangements were established, Congress was responsible for granting both copyrights and patents on a case-by-case basis. Increases in numbers of creators seeking protection for their works was a major impetus for Congress to establish institutions to register and deposit works.

¹²Bruce Bugbee, *Genesis of Patent and Copyright Law* (Washington, DC: Public Affairs Press, 1967), p. 149.

¹³"The copyright law of 1790 stated that an author desiring protection thereunder was to deposit a copy of his work with the clerk of the District Court where he lived, but he was also required to send a second copy of his production to the U. S. Secretary of State within six months. The clerk of the District Court was to record this work according to a detailed form prescribed in the statute, and could charge a sixty-cent fee for this service. Duplicates under seal could be issued at sixty cents each, and the grantee was required to publish, within two months, a copy thereof in at least one newspaper for a four week period—an interesting carry over of a feature which the Senate had dropped from the general patent bill prior to its passage. Bruce Bugbee, *The Genesis of Patent and Copyright Law* (Washington, DC: Public Affairs Press, 1967), p. 147.

¹⁴... The courts at the beginning construed the Act [the Copyright Act of 1790] very strictly and hence the author was obliged to proceed with the utmost caution along the tortuous copyright route lest any slip prove his undoing." Alan Latman and Robert German, *Copyright for The Eighties* (Charlottesville, VA: Michie, Bobbs-Merrill, 1981), p. 5.

tors seeking protection for their works and the growing number of types of works that Congress has included as protectable subject matter under intellectual property law.

In response to such changes, Congress has, over time, transformed the original institutions into larger, more distinct governmental agencies with increased responsibilities, administrative or otherwise. In spite of these modifications, these government agencies responsible for intellectual property rights have remained largely nonregulatory, their role being to register and deposit works, and to disseminate knowledge to the public.

Copyrights

Like the patent system, the copyright system of 1790 was amended soon after its creation. The major change expanded the types of subject matter to be protected under U.S. copyright law. Such expansion of the law to cover new types of works added increasing responsibilities to the Federal institutions which registered works.¹⁵

Reflecting such increases, the Federal copyright institutions grew in size and administrative functions. In 1859, the responsibility of registering works was transferred to the Department of the Interior. Then in 1870, when Congress was enacting patent legislation, it undertook a major reform of the copyright system. Congress assigned the registering of copyrights and the depositing of works to the Library of Congress, which had been established in 1800. Under this statute, the Librarian of Congress received and maintained all copyright records and deposit copies, which the District Courts had held under the old, decentralized system. In 1897, a separate Copyright Office was established within the Library of Congress, where it remains today. Much like

¹⁵Over time, legal protection, for example, has been extended to include: designs, engravings, and etchings (1802); musical compositions (1831); dramatic compositions (1856); photographs and negatives (1865); statues and models (1870); all writings of an author (1909); motion pictures (1912); sound recordings (1972); original works of authorship (1976); computer software (1980); and mask works (sui generis protection) for semiconductor chips (1984).

the changes made in the patent system, the transfer of the registration and deposit function to a centralized library clearly reflected the wish to promote public dissemination of intellectual creations.¹⁶

Patents

A few years after the Patent Board was established in 1790, the large numbers of patent applications became too time-consuming for the board members whose primary responsibilities were as members in the Cabinet.¹⁷ To remedy this situation, Congress, in 1789, dropped the requirement that inventions be sufficiently useful or important to receive a patent, and replaced the examination process performed by the Cabinet members with simple registration. In 1802, Congress enacted legislation that created a Patent Office as a distinct division within the Department of State.¹⁸

Dissatisfaction with this process and the increasing number of applications for patents led to legislation in 1836 that enlarged and elevated the status of the Patent Office to a separate bureau within the Department of State. The statute also authorized the President to appoint a Commissioner of Patents, who in turn was to appoint a full-time staff of examiners and other clerks and assistants. It also reinstated the process of examining patent applications for novelty, utility, and invention. As under the laws of 1790 and 1793, applications were to be submitted with specifications, drawings, and when necessary, models. The statute further directed the Commissioner to display the models in a gallery open to the public, thus further promoting the public dissemination of knowledge.

¹⁶The Thomas Jefferson Building of the Library of Congress, for example, was established by the Copyright Act of 1870 to house the growing collections that were being acquired as a result of the copyright deposit system.

¹⁷For example, under the Patent Act of 1790, approximately 57 patents were granted: 3 in 1790, 33 in 1791, 11 in 1792, and 10 in the early weeks of 1793. Bruce Bugbee, *Genesis of American Patent and Copyright Law* (Washington, DC: Public Affairs Press, 1967), p. 149.

¹⁸Bruce Bugbee, *Genesis of American Patent and Copyright Law* (Washington, DC: Public Affairs Press, 1967), p. 150.

In 1849, the Patent Office was transferred to the newly created Department of the Interior. In 1870 the Commissioner of Patents was authorized to register trademarks.¹⁹ Fi-

¹⁹The Supreme Court held such legislation to be unconstitutional because trademarks did not cover a product of authorship or invention. Subsequently, the Supreme Court found that

nally, in 1925, the Patent Office was placed in the Department of Commerce, where it remains today.

registration of trademarks was permissible under the power to regulate commerce. Gustavus A Weber, *The Patent Office* (Baltimore, MD: The Johns Hopkins University Press, 1924).

PRESENT INSTITUTIONAL ARRANGEMENTS FOR THE ADMINISTRATION OF INTELLECTUAL PROPERTY RIGHTS

Although the U.S. intellectual property laws have been revised many times since 1790, the basic institutional arrangements have, with minor changes, remained intact—performing minimal, indirect regulatory functions. These institutions administer basic laws, register and deposit works, and provide support services.²⁰ They have, moreover, shown a remarkable resiliency to technological change, thus far.

In adjusting to technological development, many of the institutions have undergone similar changes. First, each of the institutions has increased in size, reflecting the growing number and types of works to be protected. Second, each has begun to use information technologies to perform more efficiently. Third, to

deal more effectively with the growing internationalization of intellectual property issues, all of the institutions individually and jointly, have increased their international activities. Fourth, in reaction to the increasing complexity of new technologies (particularly cable) that have given rise to new stakeholders, a new agency has been established that departs from the traditional role of government regarding intellectual property rights.²¹ And finally, the courts have become increasingly burdened with cases involving more complex technical issues. A brief characterization of the principal institutional actors involved with the administration of property rights and some of the current issues they face are provided below.

Patent and Trademark Office

The U.S. Patent and Trademark Office (PTO) is located within the Department of Commerce. Similar to the Copyright Office, PTO has no jurisdiction over questions relating to enforcement of patents, nor over matters that concern the promotion or the utilization of patents. PTO's major function is to administer the patent laws as they relate to the granting of patents. It examines applications for patents to

²⁰Donald Curran, Acting Register of Copyrights, for example, speaking before the Patent, Trademark, and Copyright Section of the American Bar Association, said that "the Federal Government does not now in any but the most tangential way 'regulate' the copyright industries. . . ." *Information Hotline*, vol. 17, No. 10, November 1985, p. 4.

Regulation can be defined as:

Federal laws or rules which impose government standards and significant economic responsibilities on individuals or organizations outside the Federal establishment. . . . Regulation is carried out by Federal agencies through such means as setting or approving prices, rates or fares, profits, interest rates, and wages; awarding licenses, franchises, certificates, and permits; or establishing and enforcing standards of behavior such as worker safety rules, air quality levels, public disclosure of financial information, or prohibitions of price, racial, religious, or sexual discrimination.

Although almost all government activities involve a rule or a regulation, there are varying degrees of regulation. The administration of intellectual property rights, for example, relies on the law to define property rights and lets those who possess them negotiate their value either in the marketplace or in a private, decentralized fashion. A more regulatory approach would rely on public authorities to directly determine and allocate the value of intellectual property. Domestic Council Review Group on Regulatory Reform, "The Challenge of Regulatory Reform: A Report to the President" (Washington, DC, 1977), p. 47.

²¹The functions have become more regulatory in the sense that the government is actively deciding the value of royalties for intellectual works. The first time that an exception was made to the traditional copyright approach was in the Copyright Act of 1909 which required copyright proprietors of musical works to license their use in mechanical recordings for a royalty of 2 cents. Since 1909, three other exceptions have been made for cable retransmissions, musical recordings used in juke boxes, and noncommercial broadcasters use of music and other creative works.

ascertain whether the applicants are entitled to patents under the law and grants the patents when they are so entitled. PTO also administers the trademark laws and reviews trademark applications to determine whether they meet statutory criteria for registration.²²

Furthering the goal of increasing public access to knowledge, PTO also publishes issued patents and various publications about patents and patent laws. It also maintains public search rooms for the public to use to examine issued patents and records and supplies copies of records and other papers on demand.

In addition to the examining groups, PTO has a number of sections, divisions, and branches that perform various other services, such as receiving and distributing mail, receiving new applications, handling sales of printed copies of patents, copying of records, inspecting drawings, and recording assignments.²³

PTO has grown tremendously since it was first established. At present, it has approximately 3,100 employees, of whom about half are examiners and technical and legal staff. Over 100,000 patent applications are received annually. Because of the large number of applications, there is a 25-month backlog of 440,000 cases. To remedy this situation, PTO is in the process of automating its search files. The goal is to complete automation by the early 1990s.²⁴

Copyright Office

The U.S. Copyright Office is located in the Library of Congress. As noted earlier, its location is important to both the Library and the Copyright Office, representing a symbiotic relationship between the two. The Copyright

Office, through its deposit requirement, collects copies of all the works it receives which it then makes available to the Library of Congress' collections. This function, sometimes referred to as "America's cultural policy," has been critical in developing the Nation's storehouse of intellectual material.²⁵ The Library of Congress in turn supplies the Copyright Office with administrative support. This cooperative arrangement has existed for over 150 years and helps to accomplish a major goal of intellectual property protection—the dissemination of knowledge to the public.²⁶

The divisions of the Copyright Office are organized by function. In addition to the Register's Office, there are *six* operational divisions:

1. the Acquisitions and Processing Division—which performs the general housekeeping and accounting work of the office and the enforcement of the mandatory deposit provisions of the copyright law;
2. the Examining Division—which determines whether the requirements of the law have been met for materials submitted for registration;
3. the Cataloging Division—which catalogs all copyright registrations and recorded documents;
4. the Information and Reference Division—which provides the public with general information on copyright, conducts searches for the public in the Copyright Office catalogs, and produces on request certified copies of office records;
5. the Records Management Division—which maintains the records of the Copyright Office; and
6. the Licensing Division—which deals with payments made to the office under the compulsory licensing provisions of the law

²²U.S. Department of Commerce, Patent and Trademark Office, "General Information Concerning Patents: A Brief Introduction to Patent Matters" (Washington, DC: U.S. Government Printing Office, 1984), p. 5.

²³U.S. Department of Commerce, Patent and Trademark Office, "General Information Concerning Patents: A Brief Introduction to Patent Matters" (Washington, DC: U.S. Government Printing Office, 1984), p. 5.

²⁴Discussion with Donald Quigg, Acting Commissioner of Patents, March 1985.

²⁵Discussion with Donald Curran, Acting Register of Copyrights, March 1985.

²⁶For an interesting discussion of the relationship between the Copyright Office and the Library of Congress, see Donald Curran, "The Copyright Office and the Library of Congress," remarks of Donald Curran, acting Register of Copyrights to the American Bar Association, Section Patent, Trademark, and Copyright Law, Washington, DC, July 9, 1985.

that relate to coin-operated phonorecord players (jukeboxes) and cable systems.²⁷

The number and types of works registered have grown enormously since the Copyright Office was established. For example, between 1790 and 1869 a total of 150,000 works were registered. Today, approximately 500,000 works are registered annually with the Copyright Office.²⁸ The staff of the Office has grown to 561 with an annual budget of \$16.2 million.²⁹ In addition to expanding its organization with increased registrations, the Copyright Office has recently begun to use information technologies to automate many of its functions. This has greatly improved its efficiency, particularly in the registration process.

Copyright Royalty Tribunal

The Copyright Royalty Tribunal (CRT) is the most recently established government agency that deals with intellectual property rights. It was established by the 1976 Copyright Act as an independent agency within the legislative branch. CRT was created to administer several compulsory licenses that Congress, partly in response to new technological developments, also set forth in the 1976 act. A compulsory license permits the use of copyrighted material under certain circumstances without the permission of the copyright owner, provided a government-set payment is made to the copyright owner. Such licenses are:

- retransmissions by cable systems of distant broadcast signals by television and radio stations;
- the use of musical records in jukeboxes for profit;
- the use of music and certain other creations by noncommercial broadcasters; and

• the use of music on phonorecords.³⁰

CRT has six responsibilities for the administration of the four compulsory licenses:

1. adjust the compulsory license rate for retransmission by cable systems of distant, non-network broadcasts by television stations;
2. determine the distribution of fees deposited with the government by cable systems;
3. determine the compulsory license paid to the Register of Copyrights for the performance of non-dramatic musical compositions by jukebox owners;
4. determine the distribution of fees deposited with the government by jukebox owners;
5. adjust the mechanical compulsory license rate on the sale of non-dramatic musical works embodied in phonorecords (these fees are paid to copyright owners without government involvement, via the Harry Fox Agency); and
6. determine reasonable terms and rates for public broadcasting entities' use of musical, pictorial, graphic, and sculptural works (these fees are paid without government involvement).³¹

Five appointed commissioners are responsible for holding hearings to determine rates and distribute royalties.

Because CRT performs functions that are much more regulatory in nature—that is, its rulemaking proceedings to set royalty rates and its adjudication function which entails distribution of collected royalties to claimants—it diverges sharply from the traditional role of

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²⁷Statement of Wilbur Campbell, Deputy Director, Accounting and Financial Management Division, General Accounting office before the Subcommittee on Courts, Civil Liberties, and the Administration of Justice, Committee on the Judiciary, U.S. House of Representatives, "The Operation of the Copyright Royalty Tribunal," June 11, 1981, p. 3.

²⁸Statement of Wilbur Campbell, Deputy Director, Accounting and Financial Management Division, General Accounting Office before the Subcommittee on Courts, Civil Liberties, and the Administration of Justice, Committee on the Judiciary, U.S. House of Representatives, "The Operation of the Copyright Royalty Tribunal," June 11, 1981, p. 4.

²⁹"86th Annual Report of The Register of Copyrights, 1983" (Washington, DC: Library of Congress, 1984), p. 1.

³⁰"86th Annual Report of the Register of Copyrights, 1983" (Washington, DC: Library of Congress, 1984), pp. 32, 34.

³¹"Appendix to the Budget of the United States Government for Fiscal Year 1986.

the Federal Government in the administration of intellectual property rights. For this reason, CRT has recently run into some sharp criticisms.³²

Other Supporting Agencies Within the Federal Government

Department of Commerce

Four offices and agencies within the Department of Commerce support intellectual property activities in various ways. The growing need for support reflects the increasingly complex technical, political, and economic dimensions of intellectual property rights issues brought about by technological development. Such support draws on the industrial, technical, and scientific expertise of the following agencies.

International Trade Administration. The International Trade Administration (ITA) was established by the Secretary to strengthen the U.S. international trade and investment position. ITA provides counseling to members of the business community on export opportunities and problems. ITA offices abroad help to identify potential markets. A recent reorganization along lines proposed by the Grace Commission has brought together industrial specialists in such areas as computers and telecommunications with trade promotion staff to bring more specialized knowledge to trade negotiations.³³ ITA administers the Export Administration Act to ensure that export activity is consistent with national security and foreign policy objectives. A current priority is prevention of the illegal transfer of technology. Control of technical data poses enforcement problems because such intangibles as consulting arrangements and training of foreign nationals are covered. In issuing export licenses, clearances are routinely required from the Departments of State and Defense.

³²See for example, hearings held before the Subcommittee on Courts, Civil Liberties, and the Administration of Justice, Committee on the Judiciary, U.S. House of Representatives, "The Copyright Royalty Tribunal," July 11, 1985.

³³President's Private Sector Survey on Cost Control, "Report on the Department of Commerce" (Washington, DC: U.S. Government Printing Office, 1983), p. 24.

National Telecommunications and Information Administration. NTIA is the executive branch agency principally responsible for the development of domestic and international telecommunication and information policy. The agency also manages the various government agencies' use of the electromagnetic spectrum and has research laboratories for technical support. Because of the close relationship between telecommunications and intellectual property and its role in developing information policy, NTIA participates in U.S. Government delegations to international intellectual property negotiations. NTIA also makes recommendations on legislative and regulatory issues regarding intellectual property and communication issues.

National Technical Information Service. NTIS serves as a government clearinghouse for technical information. NTIS issues notices to the public that a government agency has applied for a patent. Private organizations and individuals can then determine whether to apply for a license.

NTIS acts as an agent in support of the patent process for nine departments and agencies. These are the Departments of Commerce, Health and Human Services, Interior, Agriculture, Army, Air Force, Transportation, Veterans Administration, and the Environmental Protection Agency. NTIS makes special promotional efforts to encourage licensing and also licenses those agencies' patents.

Office for Productivity, Technology, and Innovation. OPTI, headed by an Assistant Secretary of Commerce, was created to develop measures to improve the competitive position of the United States in world markets. The passage of legislation (Public Law 96-517) in 1980 provided nonprofit organizations and small businesses with the first right of refusal to title in inventions made under government contracts and grants. Authority to implement this policy was transferred to OPTI from the Office of Federal Procurement Policy of the Office of Management and Budget by Public Law 98-620. A Presidential memorandum issued in 1983 directed agencies to permit all contractors and grantees to take title in inventions

to the extent permitted by law. Implementation of this directive is monitored by OPTI, which works with agencies in preparing procurement regulations. OPTI is also developing policy to cover the ownership and the use of technical data arising from federally supported research and development. This is a highly controversial area with little precedent for guidance.

Department of Justice

The Antitrust Division of the Department of Justice includes an intellectual property section that monitors the interface between antitrust and intellectual property matters. The section helps develop legislation with potential antitrust implications, such as the recently passed National Cooperative Research Act, which removes certain antitrust barriers to cooperative R&D. It also provides the Administration's position on intellectual property matters to other regulatory agencies, and presents the Administration's opinion to the courts, if requested in a pending case.

The Department of Justice also represents the Patent and Trademark Office in civil cases when, for example, it is alleged that the agency acted improperly in approving or refusing a patent application. It also represents the Copyright Office in similar circumstances.

Department of State

The Department of State's international activities in the protection of intellectual property are carried out through its Office of Business Practices. The Department of State coordinates U.S. participation in the international intellectual property treaties to which the United States is a party, such as the Convention for the Protection of Industrial Property and the Universal Copyright Convention. Within the Federal Government, the Department of State initiates or participates in the approval of papers circulated among agencies to achieve coordinated positions in multilateral and bilateral negotiations on intellectual property issues. To elicit industry viewpoints, the Department of State has created an Advisory

Committee on International Intellectual Property.

Office of the U.S. Trade Representative

The Office of the U.S. Trade Representative (USTR), created by statute in 1975 in the Executive Office of the President, is responsible for setting and administering trade policy. USTR also administers part of the Trade and Tariff Act of 1984, which refers specifically to the protection of intellectual property. Under this act, the President is authorized to determine which developing countries may export goods to this country duty free, on the basis of each country's efforts to protect U.S. intellectual property products as well as other criteria. USTR is also responsible for issuing a statutorily required annual report to Congress on trade problems, including a report on nations that are not respecting U.S. intellectual property rights.

International Trade Commission

The International Trade Commission (ITC) is an independent quasi-judicial agency that determines whether unfair acts related to imports harm U.S. industries. Investigations often involve allegations of patent, trademark, or copyright infringement. The intellectual property owner or licensee usually initiates action by making a complaint to ITC. ITC may then conduct hearings before an administrative law judge. A final decision is rendered by the Commissioners. The agency is authorized to issue orders excluding goods from entry and/or cease-and-desist orders. Exclusion orders are enforced by the Bureau of Customs. ITC works closely with the Department of Commerce's International Trade Administration, which maintains information on industries that might be harmed by unfair trade practices.

Policy Coordination

Reflecting the growing number of economic, political, social, and international factors surrounding intellectual property issues, various Federal agencies have recently begun to coordinate their efforts to deal with these multifaceted questions. Responsibility for policy co-

ordination on intellectual property is mainly vested in four interagency coremittees that are described below.

Cabinet Council on Commerce and Trade. The Cabinet Council on Commerce and Trade is chaired by the Secretary of Commerce, who has appointed the Commissioner of Patents and Trademarks as Chairman of its Working Group on Intellectual Property. The basic task of the Working Group is to coordinate the positions of Federal agencies, especially in developing U.S. positions in foreign negotiations. Seven agencies of the executive branch are represented on the working group. The Copyright Office representative also participates in the meetings.

The working group is concerned with both international and domestic issues that require a unified government position. These have included:

1. obtaining a coordinated position for the Brussels Satellite Convention, which was subsequently ratified;
2. proposing controls for imports from third parties that do not respect U.S. trademarks;
3. recommending changes in the Freedom of Information Act to protect trade secrets;
4. coordinating agencies' positions on the recently passed semiconductor chip legislation; and
5. assessing needed changes in the "first sale" doctrine.

Trade Policy Committee. The Trade Policy Committee is chaired by the U.S. Trade Representative and has a subcommittee on intellectual property chaired by USTR. In compliance with the Trade and Tariff Act of 1984, it examines international protection of intellectual property as a trade barrier. In trade matters, the committee's focus is on bilateral negotiations. Seven executive branch agencies are members of the subcommittee.

The subcommittee facilitates cooperation among agencies in carrying out responsibilities assigned to USTR under the recent legislation. These include:

1. identifying the kinds of trade barriers that result from protection of intellectual property;
2. identifying the policies and practices of individual countries that cause serious problems in the United States;
3. compiling information in support of bilateral negotiations; and
4. preparing the annual report to Congress that highlights problem areas and U.S. efforts underway to improve them.

Senior Interagency Group on Communication and Information Policy. The Senior Interagency Group on Communication and Information Policy was created in 1980 and is co-chaired by representatives from the Departments of State and Commerce. Its Working Group on Copyright and Intellectual Property, which includes representatives from nine government agencies, is chaired by a representative of the Department of Commerce's National Telecommunications and Information Administration.

The task of this working group is to coordinate and exchange information on each of the agency's efforts to improve international protection for U.S. intellectual property rights. The working group has recently been working to ensure that U.S. programmers receive remuneration for the cable retransmissions of their material by Canadians and Mexicans. A separate Working Group on Transborder Data Flow, chaired by a representative from the Department of State, coordinates U.S. positions in the Organization for Economic and Community Development (OECD) Committee on Information, Computer, and Communication Policy.

Federal Coordinating Council for Science, Engineering, and Technology. The Federal Coordinating Council for Science, Engineering, and Technology is chaired by the director of the Office of Science and Technology Policy (OSTP). Its Working Group on Intellectual Property is chaired by the Assistant Secretary of Commerce for Productivity, Technology, and Innovation. This group addresses issues that arise in the process of carrying out legislative and administration policy on the owner-

ship of intellectual property created during government-sponsored research and development. Nineteen agencies are represented on the working group.

This working group is used by the Assistant Secretary to help coordinate the execution of responsibilities assigned to Commerce by Public Law 98-620. Guidance is provided to agencies that are drafting Federal Acquisition Regulations that authorize vesting title to intellectual property in small businesses and non-profit organizations performing research and development for the government. Similar efforts are underway pursuant to the Presidential directive that encourages all government contractors and grantees to take title to the extent permitted by law. The working group is drafting guidelines for the disposal of technical data arising from government-supported research and development, and is preparing model agreements that include provisions for intellectual property for use by government laboratories undertaking cooperative efforts with private companies.

Federal Courts

From the very beginning of Federal intellectual property protection, courts have played a central—albeit not highly visible—role in the implementation of intellectual property laws. Although the availability of courts for the resolution of private disputes is generally taken for granted, and not often considered part of the system, it is clear that access to the Federal judicial system has always been a crucial element of intellectual property policy. As forums for intellectual property dispute resolution, courts have: 1) developed doctrines defining the scope of protections; and 2) provided official sanctions for misallocation of rights and rewards under intellectual property law.

The role of the courts in resolving private disputes and in developing legal doctrines may become more central with the advent of new

information and communication technologies.³⁴ The volume of legislation dealing with technological intellectual property is growing rapidly and is likely to be matched by an increasing volume of litigation.³⁵ The economic stakes involved in the allocation of technological property rights by the courts are large and will assure the availability of extensive resources for litigation.³⁶ The resulting surge of scientific and technological disputes into the judicial arena is likely to put substantial strain on the institutional resources of the judiciary and to raise questions about judicial expertise in resolving

³⁴Judicial decisions on the allocation of proprietary rights in new information technologies and on access to new forms of communications occupy position of singular importance. What Justice Cardozo said about the "preferred position" of the First Amendment—"that it is the matrix, the indispensable condition, of nearly every other form of freedom"—may well be said about access to information and the means of its communication. At a time when the dimensions of advance in these technologies are seen as equal in importance to the advent of the industrial revolution and when the potential for the monopolization of control they embody surpasses anything organized societies have known so far, the power of courts to demarcate rights of ownership in and access to knowledge is the power to decide whether or not the new information and communication technologies will be used to increase the public dissemination of information. The shortcomings of intellectual property rights adjudication must be seen against that challenge. See *Palko v. Connecticut*, 302 U.S. 319 (1937).

³⁵For a comprehensive list of legislation in the 98th Congress dealing with various aspects of the new information technology, see Report, 8th Annual Copyright Law Conference, Mar. 7, 1985, Washington, DC. The volume of litigation over questions of copyrightability has increased dramatically. Although the available data on copyright litigation does not distinguish between traditional copyright disputes and those involving new technologies, the number of copyright cases filed in Federal courts increased from 899 in 1976 to 2,226 in 1983. Annual Report of the Director of the Administrative Office of the United States Courts, 1984.

³⁶In 1982, an estimated 2.8 million personal computers were sold in the United States. Another 5 million, for a total of more than \$24 billion in sales, were expected to be sold in 1983. By the end of the century 80 million personal computers will be in use. Estimates of total software revenues for 1982 run as high as \$45 billion, by 1987 packaged personal computer software sales alone are expected to reach \$4.8 billion. In 1984, gross revenues from the sale or license of computerized databases surpassed \$3 billion. Pamela Samuelson, "CONTU Revisited: The Case Against Copyright Protection for Computer Programs in Machine Readable Form," *Duke Law Journal*, No. 4, 1984, pp. 705-712.

novel and ever more complex scientific and economic issues raised by the regulation of new intellectual property .37

Non-Federal Agencies: Collecting Societies

Traditionally, many copyright owners have licensed use of their literary, dramatic, musical, and artistic works, as well as other forms of intellectual property, on the basis of transaction contracts worked out between individuals. The introduction of commercial broadcasting technologies, beginning in the 1920s, gave copyright owners new opportunities for presenting their works and new difficulties in collecting fees for use. Copyright owners have found it increasingly difficult to control or administer their rights on a case-by-case basis. Users also have faced difficulties in identifying and remunerating creators of works. As described below, these problems provided significant pressure for the establishment of systems of administering rights on an aggregate basis through collecting societies.

Music

The use of a collective system of administering intellectual property rights in the music industry was prompted by two events. First, the 1909 revision of the Copyright Act extended to the owners of music copyrights the exclusive right to authorize the public, for-profit performance of their works. Soon after, radio extended once-local performances to a much larger audience. Film and television followed, bringing further increases in the scale and scope of public musical performances.

What copyright owners lacked in the face of these new opportunities for performance and profit was an efficient mechanism for collecting the money to which the law entitled them. To setup such a system, a group of prominent composers formed the American Society for Composers, Authors, and Publishers (ASCAP). Established to collectively license use of musical works and to monitor performances and infringements of the law, ASCAP was successful in lowering the cost and simplifying the process of licensing transactions.

A second, much smaller, collecting society was founded in 1930 by Paul Heinecke. Called the Society of European Stage Authors (SE SAC), the organization's membership was made up mostly of Europeans. Today, SE SAC has a large repertoire of American music.

In 1940, a dispute between ASCAP and a group of broadcasters produced the third music collecting society, Broadcast Music Inc. (BMI). The broadcasters charged that ASCAP's licensing fees were too high, and so split off to form their own society. BMI supplied its member broadcasters with music from sources not controlled by ASCAP. Although the broadcasters resolved their dispute with ASCAP in 1941, BMI continued to operate and is still a major competitor to ASCAP.

Print

In print publishing, the pressure for a collective approach began to build in the 1950s, when authors and publishers saw a threat to their traditional sources of income from photocopying technologies. Micrography was the first such technology, and it was followed in the 1960s by advances in photocopying techniques and mechanical paper-handling capacity.

During the process of revising the Copyright Act, Congress suggested that publishers and authors might set up a cooperative mechanism for collecting and disbursing revenues. Upon

³⁷The practical value of the categorical copyright protection for computer software, for example, will be determined largely by judicial decisions on the copyrightability of particular forms and types of programs and by judicial definition of the scope of the protections that will be accorded by software copyright.

passage of the 1976 act, a group of publishing and other associations formed the Copyright Clearance Center (CCC). Established in 1977, CCC was designed to monitor and collect from consumers who want to photocopy copyrighted works and to distribute revenues to the copyright holders.

Film

With the introduction of cable and satellite transmission, the film industry followed the example of the music and publishing industries and set up a collecting society. Before that time, the reproduction of film prints was expensive, and profitable exhibition was generally visible, so illicit use was easily discouraged. But with satellite and cable, the film industry faced greater difficulties, particularly in foreign countries, in collecting fees for use of their works.

In response to these new technologies, an international collecting society called L'Association de Gestion Internationale Des Oeuvres Audio-Visuelles (AGICOA) was organized in 1982. The society was founded to negotiate use of films between national collecting societies and copyright holders, to monitor the use of films, to collect royalties from those who use them, and to distribute royalties to copyright holders around the world.

Collecting Societies in Practice

Generally speaking, the main purpose of collecting societies has been to alleviate the problems of administering individual property rights by setting up a central clearinghouse mechanism. Easing the cost and complexity of licensing is also important; users can obtain a blanket license to use any of the registered works.³⁸ Collecting societies, moreover, attempt to serve as forums for negotiations between the various interested parties and try to educate the general public about intellectual property protection.

³⁸In some cases, however, users prefer to pay on a per-use basis. ASCAP, BMI, and the CCC each offer these types of transactional licenses. AGICOA generally operates on a pay-per-use basis.

To accomplish these objectives, each collecting society performs similar functions. For example, each has a department responsible for licensing users of copyrighted works. They try to identify new users and see that both new and established users are properly licensed and pay the required fees. Their responsibilities also include convincing users that they must in fact pay user fees; this is sometimes difficult. In some cases, some collecting societies have resorted to lawsuits to exact payment and enforce licensing terms.³⁹ Although the blanket license entitles users to access to all of the society's works, the fees charged vary according to particular classes of use.⁴⁰ The negotiation of fees is conducted with various industry groups, such as the American Hotel and Motel Association, the National Association of Broadcasters, the Association of American Publishers, and the Authors League of America. Each collecting society has some mechanism for adjudicating disputes in cases where users feel the fees are too high.

In addition to maintaining lists of licensees, the collecting societies have departments that are responsible for recording and updating the list of works registered with the society. Most of the collecting societies maintain these files in an electronically accessible database. The staff members in this section also respond to inquiries from the public, users, or rights holders.

Because it would be uneconomical to log and monitor every use of every registered work, collecting societies generally rely on sample

³⁹ASCAP brings, for example, approximately 400 to 500 such infringement actions every year. Over 99 percent of these cases are settled before trial.

⁴⁰The musical performance rights societies, for example, use different methods but similar criteria for determining user license fees. The criteria for broadcast users include, for example, advertising revenues and the size of their markets. For nonbroadcast users such as "general establishments," the societies use factors such as the price of a drink, seating capacity, the frequency of music performances, and the type of rendition. Hotel and motel fees take into account total entertainment expenditures; concert rates depend on admission price and seating capacity; background music users such as Muzak pay a fee based primarily on the number and character of subscribers.

surveys of use for determining the distribution of revenues to their creator and publisher members.⁴¹ The exact distribution of revenues to individual rights owners is calculated by formula.⁴²

⁴¹This is usually performed in a special survey department. Although the music collecting societies and the CCC and AGICOA all use different survey methods, the overall intent of the survey is similar. Upon receipt of the survey data, the societies identify writers and publishers of the registered works. Some of the societies report that the use of information technology has greatly improved the efficiency of the survey and identification process.

⁴²In the case of the music performance societies, these calculations are made with weighting formulas, whereby different uses of works earn different amounts of performance credits. For uses of printed works, the CCC uses rates determined by each of the copyright holders for calculating its survey data.

Most of the collecting societies have separate international departments that have reciprocal agreements with individual collecting societies abroad. These agreements provide for the exchange of revenues that foreign societies collect for American societies' registered works. Collecting societies also belong to the relevant international associations.

After calculating the credits, the music performance rights societies divide 50 percent of their revenues among writers according to the credits they earned and 50 percent to publishers according to the credits they earned. The CCC pays all of its collected revenues (less overhead) to its publisher members (who may or may not have agreements to share these revenues with authors) according to calculations made with the usage survey data. Automated information systems have also greatly streamlined the remuneration process.

EMERGENCE OF NEW TECHNOLOGIES AND THEIR IMPLICATIONS FOR THE PRESENT FEDERAL INSTITUTIONAL ARRANGEMENTS FOR THE ADMINISTRATION OF INTELLECTUAL PROPERTY RIGHTS

As illustrated above, the Federal institutions established to administer intellectual property rights have shown a resilience to technological developments over time. Today, however, new information and communication technologies are of a new order of magnitude and scope, and so are placing correspondingly greater pressure on the entire intellectual property system. The present institutional arrangements were not designed to deal with the many kinds of problems generated by these technologies. To explore how new technological developments are affecting the viability and effectiveness of the institutions now involved with intellectual property issues, a brief characterization of such developments and their potential institutional implications is provided below.

Rapidly of, and Uncertainty With Respect to, Changes in Information and Communication Technologies

Technological advances in, and the growing convergence of, computer and communication technologies, have combined with the deregulation

of the telecommunication industry, to greatly enhance the public's access to information products and services. These same two developments significantly affect the processes of creating, producing, and using intellectual properties. As a result, they are likely to have a somewhat disruptive effect on the nature of the intellectual property system as it exists today.

The unprecedented speed and unpredictability of these changes confound efforts to design legislation that will continue to be relevant and useful. It was for this reason, for example, that technological gaps soon developed in the 1976 copyright law and its 1980 amendments were enacted, although the law itself was specifically designed to take emerging technologies into account. As illustrated in the case of *Apple Computer, Inc. v. Franklin Computer Corp.*, for example, the law failed to address the important question of whether copyright law applied to operating code that is readable for the most part only by machine, or to information embedded in hardware. And as the case of *Sony Corp. of America v. Universal City Studios*

demonstrates, the law failed to anticipate the rapid growth of the home market for videocassette recorders (VCR) and how this widespread use of VCRs might affect the intellectual property rights of the film industry. It is not surprising, therefore, the past few years have brought greater demands on the courts and many more bills related to intellectual property which seek to accommodate legislation with changing technologies.

Given the rapidity of, and uncertainty with respect to, changes in information and communication technologies and their impact on the intellectual property system, the question arises as to whether the existing institutions that were established to address intellectual property issues are either equipped with or are capable of developing an ongoing process to assess and plan for technological change.

Growing Demand for Nontraditional Copyright Solutions Requiring a Regulatory Approach

The rapid development of information and communication technologies, combined with greater public access to them, has strained many of the traditional mechanisms for protecting intellectual properties. This growth and development has also stressed the system by which creators, producers, and distributors of intellectual properties are remunerated. For example, because many of these technologies permit decentralized access and require electronic handling of information, their use can be carried out privately and is, therefore, less subject than in the past to monitoring and control. Moreover, by generating new uses and users of intellectual properties, these technologies are convoluting the process by which intellectual properties are created, published, distributed, and used. Similarly, they are altering some of the traditional roles, and relationships of actors in the intellectual property system. As a result, many of those involved are seeking new kinds of rights and forms of remuner-

ation.⁴³ Directors, for example, are looking for ways to receive property rights protection for their individual contribution to stage and film production.⁴⁴ The Motion Picture Association of America, moreover, is seeking the right to be paid a fee by owners of satellite dishes who receive transmitted broadcasts.⁴⁵

To overcome some enforcement problems generated by the new technologies and take into account the new kinds of claims for rights, a number of laws and bills have been enacted or introduced that depart from the traditional intellectual property scheme and require significant government involvement for their implementation. Under a compulsory licensing scheme, for example, Section 116 of the 1976 Copyright Act requires jukebox operators to pay royalties to the copyright owners of non-dramatic works. To execute this requirement, the law obliges the Copyright Office to register and license operators of jukeboxes and the Copyright Royalty Tribunal (which at the time was not yet constituted) to determine which claim for fees are legitimate and allocate royalty payments equitably. Similarly, the proposed Home Recording Act of 1983, designed to circumvent the problems of enforcement by compensating copyright owners with a royalty payment, calls on the Copyright Office to initiate arbitration proceedings to determine the royalty schedule and requires the Copyright Royalty Tribunal to determine and allocate the funds collected among competing claimants.

⁴³This is not the first time that technology has given rise to new kinds of rights. Looking back at the history of intellectual property laws and practices, one can see that, with the development of new technologies, pressure for the establishment of new kinds of rights emerged. Recording technology, for example, gave rise to the demand for a "mechanical recording right." Unlike traditional rights which were granted to an entire class of work, such as a book or a motion picture, these new kinds of rights were designed to remunerate the specific use to which a work was put.

⁴⁴OTA Workshop, "The Impact of Technology on the Creative Environment," Apr. 24, 1985.

⁴⁵See Public Law 94-549, Communications Act Provisions for Earth Stations.

With the exception of the fledgling Copyright Royalty Tribunal, however, U.S. institutional arrangements for addressing intellectual property issues were designed, for the most part, to function within a free market, non-regulatory framework. To the extent that new legislative initiatives call for a more regulatory approach to solving intellectual property problems, the question is raised as to whether and as to how well the existing set of institutions will be able to take on new roles and adapt to a new environment.

Need for Greater Understanding of and Information About the Processes By Which Intellectual Properties Are Created, Published, Distributed, and Used

Under the traditional copyright scheme, there is little need to know the precise economics of the process by which intellectual properties are created, published, distributed, and used. For under such a system, property rights are defined and granted to authors by law, and the economic value of those rights is determined and distributed by market forces. To the extent that intellectual property law is tending towards a more regulatory approach, however, more information and a greater understanding of this process will be needed.

The widespread deployment and use of the new information and communication technologies has complicated the traditional intellectual property process, making it difficult—but perhaps also more important—to know where economic value is added, and thus, how to determine economic incentives and rewards. These technologies, for example, have not only permitted more people to use intellectual properties in new and different ways, they have also extended the process and the opportunities throughout to enhance the value of creative and innovative works. No longer is there one “author,” but rather a series of “authors” whose claims to intellectual property rights must be sorted out. No longer does one pub-

lisher put out a book, or one producer release a film, but rather a variety of publishers and producers whose economic stakes need to be taken into account.

To resolve the numerous and varied competing intellectual property claims within a regulatory framework, as opposed to within a market framework, will be very difficult. It will require policy makers to develop an analytic rationale for the optimum charging of fees and the economically efficient and socially equitable distribution of rewards. To do so, they will need to know about all of the parties at stake in relatively great detail, and also understand their roles in the intellectual property process, and how each might fare under alternative scenarios. The considerations specified in the Home Recording Act of 1983 for setting royalties illustrate the kinds of information that might be required to develop such a rationale. No less than 10 factors are cited, including:

- the value to an individual of the right to reproduce copyrighted works;
- the projected effect of royalty fees on the structure and financial condition of the motion picture and audiovisual production industries and the video recording device or media importing and manufacturing industries; and
- the relative roles of copyright owners and importers and manufacturers of video recording devices or media with respect to creative and technological contribution to the development of motion pictures and other audiovisual works.

At present, reliable information of this kind is not readily available. Given the growing complexities in the intellectual property process, brought about, in part, by technological developments, it is exceedingly difficult for example, to determine such things as authorship; the point at which new value is added on to an existing intellectual property and who has added it; and what actually constitutes copying or use and, therefore, might require re-

muneration.⁴⁶ Accurate estimates of damages due to infringement of intellectual property rights are also difficult to obtain. Most of those available are not only unsystematic in their approaches; they are also somewhat suspect insofar as most have been commissioned by the very parties whose interests are at stake.⁴⁷

When legislation calls for a regulatory approach instead of a market approach for addressing intellectual property issues, provisions may be needed to increase the analytic and expert support available to those organizations called on to implement and administer the law. One recent legislative proposal that moves in this direction is the proposed Free Market Copyright Act of 1983, which abolishes the offices of two of the five commissioners attached to the Copyright Royalty Tribunal and requires the Tribunal to appoint a general counsel and chief economist.

Development of Technologies That Do Not Correspond to Traditional Intellectual Property Categories, and the Creation of *Sui Generis* Intellectual Property Legislation

The framers of the U.S. Constitution distinguished between writings and inventions, and set up separate rules and incentive systems for each. This distinction was relatively clear cut as long as the term writing merely described an art, rather than embodying the art itself. Today, however, this distinction is harder to maintain as new technologies emerge that do not clearly fit into either one or the other category. Because information technologies allow symbols to define a process and function as part of a machine, for example, they tend to blur the boundary between writings and inventions, between ideas and their expressions, and between functions and their repre-

sentations. This blurring of the boundaries has raised the question of what kind of intellectual property protection is most appropriate for these technologies and led to the establishment of *sui generis* intellectual property legislation.

Computer software was one of the first of the new information technologies to raise questions of this kind. Controversy surrounded the issue of the copyrightability of computer software since the mid-1960s, when the Copyright Office first began to register programs in their object code form under its "rule of doubt." Much of the controversy was rooted in the 1909 Supreme Court decision in *White-Smith Publishing Co. v. Apollo Co.*, which held that a player piano roll was not copyrightable since it did not embody a system of notation that could be read and, thus, was not a copy of a musical composition but rather a part of a device for mechanically performing music. Because program object code was said to resemble a piano roll in its unperceptibility, questions were raised as to whether it could be copyrighted. After considerable controversy and litigation, this issue was finally resolved within the traditional intellectual property scheme by including computer programs within the domain of copyright protection.⁴⁸

Unlike the case of computer software, the question of how semiconductor chips might best be protected was resolved not within the framework of existing intellectual property law, but rather with *sui generis* legislation. Under traditional intellectual property law, the

⁴⁶For a discussion of these problems, see Christopher Burns, Inc., "The Economics of Information," contract report prepared for OTA, 1985.

⁴⁷Stan Besen, *Economic Issues Relating to New Technologies and Intellectual Property*, contract report prepared for OTA, 1985, pp. 45-55.

⁴⁸The 1980 Amendments to the 1976 Copyright Act, for example, specifically included computer programs, databases, and works created by the use of computers within the realm of copyright protection. Many of the remaining issues were resolved with the court case, *Apple Computer Inc. v. Franklin Computer Corp.*, in which the Third Circuit Court of Appeals held that computer programs, whether in object or in source code, whether written or embedded in ROM, and whether an applications program or an operating systems program, are "literary works" within the meaning of the 1976 Copyright Act, and hence subject to copyright protection.

This is not to say that there are no alternative views about this decision. See, for example, Pamela Samuelson, "CONTU Revisited: The Case Against Copyright Protection for Computer Programs in Machine-Readable Form," *Duke Law Journal*, No. 4, 1984.

semiconductor chip was unprotected. Because it was a utilitarian article, it did not fit within the traditional concept of copyright. On the other hand, the level of originality embodied in a chip mask did not meet the standards required for patent protection. To provide protection for this new technology without undermining the integrity of the law and the historical principles underlying the distinctions between copyright and patent protection, Congress created a new class of protection with the passage of the Semiconductor Chip Protection Act of 1984. Although similar in many respects to existing copyright law, it differs insofar as it provides protection for only 10 years, requires mandatory registration, permits reverse engineering, and excludes from protection designs that are commonplace, stable, or familiar. Because the registration procedures resemble those for copyright, the Copyright Office was given the responsibility for administering the new law.

The organizational structure was established to administer intellectual property law evolved in accordance with the distinctions that had been made between patent and copyright protection. To the extent that new technologies require intellectual property protection that falls outside of the traditional realms, they may require significant institutional changes.

Growing Convergence of Intellectual Property Issues With Other International Issues

Historically, intellectual property laws and practices in the United States developed with little regard for what was taking place in the rest of the world. For example, although many other countries granted copyright protection to foreign works or authors, the United States withheld such rights throughout its first 100 years.⁴⁹ And while other European states un-

dertook to regulate their copyright relations multilaterally through the Berne Convention of 1886, the United States continued until 1955 to act bilaterally in its intellectual property dealings with foreign governments.⁵⁰

Presently, however, the new technologies have greatly increased the flow of information and information products and services across national boundaries, thus enhancing their value in international trade. Because intellectual property protection is needed to preserve this value, intellectual property policy is increasingly being brought to bear in matters involving international trade policy. The Trade and Tariff Act of 1984, for example, requires that the protection of U.S. intellectual property rights be one of the elements considered in the renewal of the benefits of the generalized system of preferences (GSP). Similarly, the Caribbean Basic Economic Recovery Act of 1983 withholds foreign aid from those countries who fail to honor intellectual property rights.

The growing importance of information products and services has also linked intellectual property policy with general matters of international politics. Viewing information technologies and information products and services as a means to social and economic development, many developing countries view U.S. intellectual property policies as a barrier to their own advancement.

To the extent that intellectual property issues continue to converge with those of international trade and international politics, questions arise as to whether the present organizational structure, designed to consider intellectual property from a domestic frame of reference, is adequate or whether some more formal coordination among agencies dealing with international issues may be necessary.

⁴⁹It was only in 1891, with the passage of the Chace International Copyright Act that the United States extended copyright relations to any nation found and proclaimed by the President to afford adequate protection to American works—subject, as stated, to a domestic manufacturing requirement and various unfamiliar formalities in this country.

⁵⁰In 1955, the United States acceded to the Universal Copyright Convention (UCC). The UCC was created for the express purpose of bringing the United States into the international copyright community. Negotiated and established under the auspices of UNESCO, it provided a ‘low bridge to the’ Berne Convention by a combination of minimal substantive requirements and the supercession of U.S. formalities by a simple ‘UCC notice’ consisting of the familiar ‘c’ inside a circle.

Growing Convergence of Intellectual Property Issues With Other Information Policy Issues

The structure and the basic assumptions underlying American intellectual property laws and practices were designed when the United States was an agrarian society, in which communication and information use and exchange played relatively minor roles in society. In this society, decisions about intellectual property could be made relatively independently from other policy issues. For it was assumed that, through the operation of the law, social and economic goals would be jointly served, thus maximizing the benefits to society.⁵¹

Today, however, the role of information technologies and information products and services have grown dramatically. These technologies and their applications are being used not only by individuals to enrich their lives, and by businesses to enhance their productivity; they are also being used by governments as a means to achieve major societal goals. For example, the French Government likens the growing connection of information-processing and communication technologies throughout the world to a change in "the entire nervous system of social organization," and plans to play a major role in their development, direct-

⁵¹Leon Seltzer, *Exemptions and Fair Use in Copyright: The Exclusive Rights Tensions in 1976 Copyright Act* (Cambridge, MA: Harvard University Press, 1978), p. 12.

ing it to be consistent and supportive of the Nation's overall societal goals.⁵²

[In the information society, such as it has been envisioned, information and communication technologies will be more interdependent, and intellectual property issues may increasingly converge with other matters of information policy—such as telecommunication policy or privacy policy.⁵³ Anticipating such connections, S. 786, a bill entitled the "Information Age Commission Act of 1985, was recently introduced into the Senate. If passed, this legislation would establish a commission to investigate comprehensively, issues relating to the information age, such as intellectual property rights, computer education, computer crime, and privacy.

To the extent that intellectual property issues converge with other information policy-related issues, the question is raised as to whether the present set of intellectual property institutions are capable of dealing with these issues as they cut across one another.

⁵²Simon Nora and Alain Mine, *The Computerization of Society* (Cambridge, MA: MIT Press, 1980).

⁵³See U.S. Congress, Office of Technology Assessment, *Computer-Based National Information Systems, Technology and Public Policy Issues*, September 1981, and OTA staff memorandum, *Institutional Options for Addressing Information Policy Issues: A Preliminary Framework for Analyzing the Choices*, November 1983. For other discussions and characterizations of the information society, see, for example, Susan Artandi, "Man, Information, and Society: New Patterns of Interaction," *Journal of the American Society for Information Science*, January 1979; and Daniel Bell, *The Coming of Post-Industrial Society* (New York: Basic Books, 1973).

IMPLICATIONS FOR FUTURE INSTITUTIONAL ARRANGEMENTS FOR THE ADMINISTRATION OF INTELLECTUAL PROPERTY RIGHTS

As described throughout this chapter, new technologies are placing considerable burdens on the Federal agencies responsible for administering intellectual property rights. To manage these stresses, Congress has several options that it could pursue. These options range from leaving the agencies as they exist to completely restructuring them.

No Action: Leave Major Decisions to the Courts

Congress, of course, does not have to act and might leave the agencies responsible for intellectual property rights as they currently exist. Although the intellectual property system would not experience devastating effects, the

burdens would remain and would perhaps increase over time with new technological developments. These burdens, moreover, would most likely fall to the courts.

The ability of the courts to deal with the emerging intellectual property issues will be determined by several factors:

1. the increasing volume of intellectual property legislation and the extent to which it departs from traditional legal concepts;
2. the limited resources available to the courts and the confining attributes of adjudication; and
3. the inadequacy and bias of adjudicative information.

Volume of New Intellectual Property Legislation and Novelty of Legal Issues

Compared to the relative stability of copyright law during the 66 years which elapsed from the enactment of the 1909 Copyright Act to the 1976 Revision of the copyright law, legislative activity on intellectual property issues has increased significantly during the last 10 years. Altogether 54 bills dealing with new intellectual property issues were introduced in the 98th Congress, 1983-85.⁵⁴ The Software Copyright Act of 1980, for example, amended Section 117 of the 1976 act to allow for the copyrightability of computer programs without specifically enumerating computer programs.⁵⁵ Another 4 years later the Semiconductor Chip Protection Act of 1984 established an entirely new class of protection for an information technology that does not fit comfortably into either the patent or copyright categories of traditional intellectual property law.⁵⁶ Additional legislation dealing with such diverse new technology subjects as commercial lending rights, home taping, cable copyright, aspects of the operation of the Copyright

Royalty Tribunal, the compensation of copyright owners through royalty payments, "work-for-hire," or computer software piracy and counterfeiting has been enacted or is under consideration. This volume of new legislation is matched by the novelty of some of the major issues raised by it. For example, the protection of software under copyright law raises a number of definitional problems that call for the interpretation of statutory language and its application to new technological and scientific processes.

Because some of the legislation on new intellectual property reflects a tendency to establish regulatory policies and institutions, courts will find themselves in the familiar-but nevertheless burdensome—position of having to review a host of administrative law issues arising out of administrative rules concerning licensing or the mechanics of copyright registration.⁵⁷ As the Copyright Office becomes the central institution responsible for copyright registration and administration, courts will have to resolve issues of regulatory policy.⁵⁸ To the extent that registration of computer programs and computerized databases will necessitate the adoption of new procedures and policies by the Copyright Office, that agency's substantive decisions and rulemaking process are likely to be subject to extensive challenges before the courts.

Unavoidably, enforcement of copyright in computer programs will involve courts in adjudication over the enforcement process itself. Since it is likely that computer copyright protections will be less self-executing than traditional copyright, new enforcement schemes will become necessary for the application of civil

⁵⁴OTA staff memorandum, Feb. 26, 1985; and American Bar Association, 8th Annual Copyright Law Conference, Washington, DC, Mar. 7, 1985.

⁵⁵Jon Baumgarten, "Copyright and Computer Software, Databases, and Chip Technology," Proceedings, 8th Annual Copyright Law Conference, Washington, DC, Mar. 7, 1985, p. 289.

⁵⁶Public Law 98-620, November 1984.

⁵⁷Inclusion of object-or machine-code within the reach of copyright protection under the Act raises novel questions about the existence of a prerequisite of human interaction with copyrightable material. It poses the problem of how to reconcile the fact that computer programs can be published with the fact that they can-at the same time-be kept secret to protect their commercial value. It demands distinctions between "utilitarian" workers and those conveying information or displaying an appearance.

⁵⁸The Semiconductor Chip Protection Act of 1984, Public Law 98-620, though not applying copyright protections, makes the Copyright Office responsible for registration and deposit of semiconductor chip design (mask works).

or possibly criminal sanctions.” Investigations of suspected infringement will affect areas protected by privacy expectations and fourth amendment guarantees and are likely to come within the reach of first amendment protections. Computer crime legislation-like that enacted at the end of the last Congress-has already been criticized by the U.S. Department of Justice as too difficult to enforce.

Judicial Resources and Capacity: Attributes of Adjudication

The capacity of the Federal courts to deal with a significant increase in their workload on a complex new subject is circumscribed by the limited resources of the courts, already short on machinery and staff, and already struggling with a growing backlog of cases.

In addition to the purely quantitative problems it poses, the increasing volume of litigation over new intellectual property rights raises substantive questions of how well the special attributes of the adjudicatory process are suited to this task. Courts will have to decide copyright questions in the context of imperfect information about the course of technological change, of doubt over the economic consequences of the allocation of new proprietary rights in information technology, of lack of public support or understanding, and in the absence of comprehensive legislative guidance.

Courts as Decisionmakers Without Control Over Their Agenda. The very fact that courts do not control their own agenda explains why the judiciary is sought after as a decision-making institution and why its decisions may at the same time be unsatisfactory from a large policy perspective. As long as legal questions are presented in the right form and forum and at the right time—conditions of adjudication defined with precision in advance—they will

“Imposition of criminal penalties for software piracy introduces difficult factual problems about intent and innocent infringement. Legislators themselves are concerned over the civil liberties implications of criminal laws which grant “broad Federal jurisdiction that permits Federal agents to traipse about with impunity in the data banks of individuals and corporations.” In addition computer crime legislation is likely to raise Federal-State jurisdictional issues.

get answers. Answers are justified by reference to evidence, reasoning and legal doctrine. Once the judicial process has been set in motion, decisions must be made.

Yet from a larger policy perspective the accessibility of the judicial process may be a liability. Since judges must respond to complaints and reach decisions one case at a time, they cannot devise a coherent program or policy; they cannot await congressional action, they cannot ask for legislative clarification of unclear language, they cannot anticipate the course of future action even where evidence indicates that the course of events will undermine the basis of their decision.⁶⁰

Because accessibility to particular courts is random, determined by jurisdictional rules and idiosyncratic characteristics of an individual litigant residence or business operation, and because courts are generally not specialized according to subject matter, different courts in different regions of the country may deal with the same legal question at the same time without a method of coordination and consolidation. Until the Supreme Court chooses to decide between contradictory or conflicting lower court outcomes in such cases, inconsistent practices maybe pursued in different areas or by different computer industries during the not inconsiderable period of time which may elapse before a “unifying” Supreme Court decision is reached.

Judicial passivity precludes courts from influencing-much less re-directing—policy developments questionable on legal or constitutional grounds, if no litigants come forward to challenge such policy. Thus the copyrightability of machine-readable forms of computer programs became established policy despite the fact that the Copyright Office had profound questions about the statutory and constitu-

⁶⁰% 1979, after the CONTU Final Report had been issued but before the Report recommendations had been enacted by the 1980 Software Amendments, one court applied the 1909 Act to hold that machine-readable versions of computer programs were not copyrightable subject matters. There was no way a court, equipped to see only the past, could have decided that case by reference to legislative action yet to come, no matter how certain or how soon.

tional validity of the practice, when it first began to register computer programs under its “rule of doubt” in 1964.⁶¹ From a policy perspective the nonsystematic invocation of judicial controls not only allows procedures and policies of doubtful legal validity to continue, but also judicial silence may serve as a signal of approval when, in fact, courts did not have the occasion for judgment.

Inadequacy of Adjudicative Information

Among the resources at the disposal of institutions explicitly designed to make social policy is the availability of expert or specialized knowledge, of procedures for the evaluation of alternative strategies or policies and of studies projecting the consequences of alternative choices. Courts lack most of these resources.

Judicial Expertise. Judges are not experts, they are generalists par excellence.⁶² They are, by and large, “lawyer-generalists” before their appointment and must remain so to serve fundamental goals of equality and neutrality within the legal system. To discourage judge-shopping, cases are assigned on a random basis. Sitting alone in courts of general jurisdiction district judges must be prepared for any subject matter. While appellate courts operate as collegial bodies, the continuous re-assignment to different panels provides little opportunity for a lasting division of labor or the development of expertise. Yet while the generalist judge is an essential-even necessary-part of the legal system, the lack of expert knowledge and specialization leaves judges unprepared for dealing with matters calling for expertise and skills in particular fields. In part, the difficulty stems from the scale and complexity of technical issues. In part, it results from the fact that judges have to deal with cases quite isolated from their

larger context and on the basis of nonprobabilistic legal reasoning. Both factors create gaps in decisions and make them uncertain guides for the policies they inevitably build.

The tension between the conflicting needs of the judicial system for generalists able to address all subjects and specialists with particular subject expertise could, in theory, be resolved by providing judges with informational resources which would allow them to become sufficiently expert to deal with new issues as they arise. A good argument can be made, however, that the adjudicatory process does not serve that need.

The Informational Bias of the Adjudicatory Process. From a policy perspective information produced in the course of adjudication is partial in the dual sense that it is both incomplete and biased. Information is incomplete and fragmented, because the judicial focus tends to be delineated by the issues which the litigants choose to raise.⁶³ Litigation over the copyrightability of computer programs has produced judicial decisions which holds as a matter of statutory interpretation that communication with a human audience is no longer required under copyright law⁶⁴ without, however, dealing at the same time with the constitutional implications of the nondisclosure which results from registration of machine-readable programs only.⁶⁵

Adjudication does not provide mechanisms for routine feedback on the consequences of decisions and it provides only limited opportunities for locating specific issues in their broader *social* context. The judicial process makes little or no provision for reviewing the consequences of decisions. The contrast be-

⁶¹CarY, “Copyright Registration and Computer Programs,” *Bulletin of the Copyright Society*, vol. 11, No. 362, 1964.

⁶²Grossman, “Social Backgrounds and Judicial Decision-making,” *Harvard Law Review*, vol. 79, No. 1551, 1966, and Carp and Wheeler, “Sink or Swim: The Socialization of a Federal District Judge,” *Journal of Public Law*, vol. 29, No. 359, 1972.

⁶³In the controversy over the patentability of living microorganisms legal arguments focused on the intended coverage of the patent laws and the distinction between a living organism and an invention, but not on the consequences of extending the concept of proprietary rights to the creation and commercial use of new life forms.

⁶⁴*Apple Computer, Inc. v. Franklin Computer Corp.*, 714 F.2d 1240, 1247-48, 3d Circuit, 1983.

⁶⁵Pamela Samuelson, “CONTU Revisited: The Case Against Copyright Protection for Computer Programs in Machine Readable Form,” reprinted from *Duke Law Journal*, No. 4, 1984, pp. 705-712.

tween the intensive examination of antecedent facts and the near total neglect of subsequent or consequential facts—i.e., the impact of a decision on economic, social, or scientific behavior and developments, is striking. Judges have no mechanism for assessing what the consequences of keeping source codes secret are for that free flow of information which courts have in the past always found to be essential in order to promote the Progress of Science and the Useful Arts.⁶⁶

Information is biased in the sense that the adversary process subjects virtually all of the information brought before a court to the service of stakeholders. Not all interest groups with stakes in the outcome of a particular case are represented and those interests which are represented are not necessarily balanced in the resources they can bring to bear on litigation. Although conclusive data are not available, it is clear that lawsuits over software copyright are almost elusively fought between corporate interests; so far neither individuals—as creators or consumers—nor other public or private entities representing nonproprietary public interests have played a role in the decisive cases. The litigation pattern thus reflects the early prominence of major corporations in the registration of computer programs.⁶⁷

Confining Conditions of Judicial Decisionmaking

The rapid rate and complexity of technological change aggravate the inherent liabilities of the judicial process and may make intellectual property law issues less manageable for the courts and may, by extension, make the outcome more counterproductive from a science and social policy perspective. It is in this sense that superimposing technological infor-

mation policy issues on judicial institutions primarily structured to decide individual cases in the context of traditional intellectual property law may prove detrimental to both the courts and those with large stakes in litigation over these issues. Future changes in information and communication technology are likely to leave courts perpetually a step behind the task they must perform.

Encourage the Use of Collecting Societies

Congress might also encourage the use of collecting societies to deal with some of the institutional problems presented by new technologies. A number of indicators suggest that collecting societies have been quite successful in meeting their goals. The longevity of the musical performing rights societies, and the modeling of other collecting societies after them, suggest that both users and creators have been generally satisfied with their performance over time. Collecting societies have also increased the size of their repertoires, the number of users, and the amount of revenues over the years.⁶⁸ Decreasing operating costs and increasing efficiency further indicate that collecting societies are accomplishing their stated objective of reducing transactional costs for both users and creators.⁶⁹

⁶⁶The combined annual collections of ASCAP, BMI, and SESAC, for example, grew from \$13.5 million in 1946 to \$190.5 million in 1976. BMI reports an annual increase in their repertoire of approximately 100,000 and an increase in revenues from \$53.1 million in 1975 to \$150 million in 1984. In the year 1984-85, the number of writer members has increased from 43,000 to 45,000 and the number of publisher members increased from 25,000 to 26,000. Although the CCC and AGIOCA are both too new to determine such overall trends, both currently report increases in the participation of users and proprietors. Leonard Feist, *An Introduction to Popular Music Publishing in America* (New York: National Music Publishers Association, Inc., 1980), p. 59; and discussions with BMI representatives, March 1985.

⁶⁹BMI, for example, decreased its operating costs from 19 percent of total revenues in 1975 to 15 percent in 1985. Collecting societies have been able to lower the cost per transaction in part because an increasing number of users and creators are using their services. The major factor in lowering costs, however, has been the introduction of information technology, now used at various points in their operations.

⁶⁶See for example, *Graham v. John Deere Co.*, 383 U.S. 1 at 5-6, 1965.

⁶⁷Between 1964 and 1976, 1205 programs were registered with the Copyright Office; 971 or 80 percent were owned by corporations—IBM and Borroughs Corp, Hersey disent, National Commission on Technological Uses of Copyrighted Works (CONTU), *Final Report* (Washington, DC: Library of Congress, 1978).

Although successful and effective in many ways, collecting societies also have problems that could limit their usefulness as a model for a broader range of information market situations. In particular, because collecting societies administer the rights for many creative works, they have been accused of monopolizing the markets and exercising unreasonable restraint on trade. These concerns have prompted antitrust suits; since 1941, both ASCAP and BMI have been operating under consent decrees.⁷⁰ In addition, problems of developing sufficient transactional volume to efficiently collect and disburse funds, and problems of equitable representation of members with disparate claims to compensation have plagued their otherwise smooth and effective operation.⁷¹

During the congressional hearings that led to the 1976 revision of the U.S. copyright law, many discussions focused on how new technologies undermine copyright owners rights. The enormous difficulties these technologies created for both users seeking licenses and creators seeking remuneration for their works were usually cited as the basis for establishing broader exemptions or conditions in the new legislation. As an alternative, many of the

participants in their 1976 hearing process proposed that a collective approach might be feasible for literary works and other types of intellectual property where reprographic, performance, and recording rights were becoming more relevant in light of new technologies.⁷²

As new information and communication technologies give rise to new creative works and new uses of traditional creative works, similar difficulties will arise for both users and creators. For example, amplification of distant signals and their distribution by cable to users, or the distribution of computer programs via videotex systems to users, will increase the access, distribution, and use, of creative works, thus creating enforcement problems and larger transactional costs. Given these new challenges to the administration of intellectual property rights, collecting societies may be one alternative to institutional problems posed by new technologies.

Strengthen and Increase the Responsibilities of Existing Agencies

Strengthening the capabilities of the current agencies involved with intellectual property rights is another option that Congress might consider. The Patent and Trademark Office, the Copyright Office, and the Copyright Royalty Tribunal could each be given additional resources for research and policy planning, and the authority to regulate and adjudicate. Other agencies' responsibilities for intellectual property rights could be strengthened and made more explicit. For example, creating a position of Assistant Secretary for Intellectual Property Right within the Office of the U.S. Trade Representative, could provide a higher level of attention to this aspect of international trade, within the U.S. Government and in negotiations with other nations.

⁷⁰ In 1941, the antitrust division of the Department of Justice filed a civil complaint against ASCAP charging the organization with violations of the Sherman Act. The result was a consent decree that significantly altered three components of ASCAP's operations. First, ASCAP was prohibited from discriminating against similarly situated licensees. This order was prompted by the society's practice of withholding certain music in an attempt to extract higher fees. Second, the consent decree prohibited ASCAP from acquiring exclusive rights to license members' performance rights. Third, ASCAP was required to offer other licenses in addition to blanket licenses.

The consent decree was amended in 1950 following numerous problems with license terms, membership restrictions, and uneven royalty distribution, as well as new problems arising from motion pictures and television. Among other things, these amendments gave users more options, set up procedures to handle fee disputes, and established more objective criteria for distributing royalties. More amendments followed in the 1960s.

Collecting societies have been criticized by some copyright holders who feel that the distribution of royalties is often unfairly biased in favor of a few very popular and powerful members. Because of alleged inequities in these sampling or royalty-calculation methods, some believe they are inadequately represented in the bargaining process. Economies of scale enjoyed by large, powerful societies serve as effective barriers to weaker creators' formation of competing collecting organizations.

⁷² Leonard Feist, *An Introduction to Popular Music Publishing in America* (New York: National Music Publishers Association, Inc., 1980), pp. 56-57.

Establish a Central Federal Intellectual Property Agency

To comprehensively address the new institutional needs, Congress might consider restructuring the institutional arrangements for intellectual property rights. Congress could, for example, establish a new Federal agency that would administer all aspects of intellectual property rights. Given the new institutional needs, this central intellectual property agency could assume the following responsibilities:

- all of the current responsibilities of the Copyright Office, the Patent Office, the Copyright Royalty Tribunal, and other agencies that are involved with intellectual property rights (this would exclude, however, the deposit function of the Copyright Office which would remain with the Library of Congress);
- rule-making and determination of rates such as compulsory license fees and distribution percentages as required by legislative mandates;
- standard administrative adjudicatory functions (similar to those of other government agencies) where preliminary disputes involving patent, copyright, and *sui generis* protections, licensing fees, distribution percentages, etc., could be resolved;
- administration of all *sui generis* protection schemes that fall between copyright and patent protection;
- development of international policy positions and representation of the United States at all international intellectual property rights negotiations and conferences;
- collection and analysis of information on markets and damages, solicitation and analysis of industry viewpoints, and solicitation and analysis of the public's views and evaluation of their access to information products and services;
- policy planning and research on technological developments and their effects on the intellectual property system; and
- advice to Congress on developments in intellectual property and suggest legislation as needed.

This central agency would be particularly effective in implementing any short-term solutions that Congress might choose to address current intellectual property issues. It could, moreover, plan and oversee any longer term solutions that Congress might wish to select. In addition to relieving many of the stresses on the Federal institutions, such an agency would also alleviate many of the continual pressures due to rapid technological change currently facing both Congress and the courts.

On the other hand, centralizing responsibilities might also have negative impacts. Many government agencies, for example, currently rely on the proximity of the intellectual property rights agencies for needed information and expertise. Consolidating the responsibilities for intellectual property rights under one agency, therefore, could deprive other parts of the U.S. Government direct access to needed information to carry out their functions. The intellectual property agencies, moreover, would be deprived of direct access not only to administrative support but to other areas of expertise, such as international affairs and trade.

Considerations for the Choices of Institutional Arrangements

Before considering institutional arrangements for the administration of rights, Congress must first make overall decisions about the intellectual property system itself. For as this report has shown, institutional arrangements must reflect the goals they are designed to promote. Congress, therefore, must determine which goals it wishes to promote, which laws and practices to establish, and how to balance competing interests in light of the effects of new technological developments. It must also determine whether the role of government in the intellectual property system should be regulatory or nonregulatory. Only after such decisions are made, can Congress begin to construct institutional arrangements for the administration of intellectual property rights.