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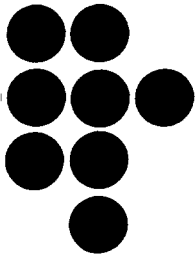
COMMUNICATIONS
FORUM

"Protecting Intellectual Property in the Electronic Environment"

April 29, 1993
4:00 to 6:00 p.m.
Bartos Theater
20 Ames Street
Massachusetts Institute of Technology
Cambridge, Massachusetts

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Speakers:

Ed Valauskas
Superconducting Supercollider Library

Karen Hunter
Elsevier Science Publishers BV

Brian Kahin
John F. Kennedy School of Government
Harvard University

Moderator:
Greg Anderson
MIT Libraries

Rapporteur: Kelly M. Greenhill, M.S. Candidate
Political Science Department, MIT

Introduction by moderator GREG ANDERSON [GA]: Welcome to the M.I.T. Communications Forum. I am Greg Anderson from the M.I.T. libraries. We are happy to have such a good turn out for our topic today, *Protecting Intellectual Property in the Electronic Environment.* We anticipate a lively discussion from our three speakers and also from you in the audience.

An interesting aspect of publicizing today's Forum was that a large portion of the publicity was conveyed electronically, in addition to the paper copy that Ann Robowtham of the Forum always sends out. I posted this announcement to only three lists, and by the following day, I had responses back from the U.K., New Zealand, and Australia asking about the Forum, how people might participate or follow up on its findings. So there was a tremendous amount of interest throughout the network by numerous cybernauts. One interesting thing is when I received messages back from New Zealand and Australia, people were so eager that they were date stamped the next day because of the international dateline. So it is nice to see that people are particularly eager.

Before turning the program over to the speakers, I would like to give you a little bit of background about the Communications Forum itself. Then I will introduce the topic and the speakers themselves. I think it is particularly appropriate to talk about the Forum at this, the last meeting of the year, because in many ways this celebrates the ten year anniversary of the establishment of the M.I.T. Communications Forum.

In preparation for this, I went back to the files in the Forum office and to the Institute archives, and there I found some early descriptions and documents relating to the establishment of the Forum. As you know, it is an interdisciplinary seminar series that reviews the full range of communications-related issues of interest to the M.I.T. community and beyond. In fact, the Forum was first founded as a mini liaison program that linked the efforts of the research program on communications policy and the M.I.T. Industrial Liaison program.

The first real mention of the Communications Forum as a formal entity was in a January 1983 memo from Dr. de Sola Pool, who was director of the research program on communications policy. He wrote to Jim Bruce, who was at that time head of the Industrial Liaison program, and is now the M.I.T. vice-president for information systems. In that memo, Dr. Pool proposed the establishment of the Communications Forum, and because of his stature as a pioneer and true giant in the field of communications policy, it came into being. Dr. Pool served as the first director of the Forum, and as he stated (and as we continue to state today), the Forum seeks to illuminate the issues, but it does not take actions or positions of any kind. I think we will see in today's lively discussion that many of these issues raise, perhaps, more questions than answers.

Since its inception, the Forum has presented programs across the entire spectrum of communications, and it is normally held about every two weeks. As I look back, I see that our program has quite a distinguished lineage. Going back to November 1983, I found mention of a seminar on cross-ownership policy in a changing media environment. In February 1984, the issue was personal privacy. A March 1984 forum was on the effect of reproduction technologies on intellectual property. We had an electronic publishing forum in 1986, which was quite early as the network was still in its early stages. The following is my favorite topic for all Communications Forums: *Software Patents: A Horrible Mistake.*; that was held in 1989. There was one on electronic libraries that year as well.

So, we come to you with a bit of this history and momentum gathering, but also clearly with a high current interest in the program. I think the advances of the electronic networks have transformed scholarship, and this is the real reason we see today the issue of intellectual property in the electronic environment as one that is very real to us. In fact, it is now bumping up against all of the other projects we undertake.

We have gone beyond the field of dreams of networks. We have indeed built them, and today we are asking the question of just what kind of game are we going to play: who are the players and what are the rules? To go a long way back to establish something about the issue today, the Constitution establishes that "the Congress shall have power to

promote the progress of science and the useful arts by securing for limited times, to authors and inventors the exclusive rights to their respective writings and discoveries." So the real impetus for the protection of intellectual property is the promotion of the distribution of information for the progress of science and the useful arts. How do we go about furthering this public goal, while at the same time, continuing to respect those individual rights? I think that is really the crux of the question at hand, since electronic networks truly facilitate the primary impetus for this creation, that is, the distribution of information.

But what harm might it do? And do we care if it does harm to those creative rights we tend to grant individuals? Recently I was in Washington, and found that the Library of Congress Copyright Office has a full display of an exhibit called *To Secure Commerce and Creativity: The Copyright Office*. Are those two issues of commerce and creativity truly compatible in the electronic environment, or at some point, must something give way? Is it commerce? Is it creativity? How do we continue to balance the two in this dynamic and transforming environment?

With that setting the stage for the speakers, I would like to tell you a few logistics about the Forum, and I will go forward with the introductions. I will introduce all three speakers now, so they can then speak in turn. As they finish, we will then allow the speakers to discuss the presentations among themselves, any issues that they may have. Then we will open it up to the audience.

The first speaker today is Ed Valauskas, who is the head of Library Public Services at the Super Conducting Supercollider Laboratory in Texas. Ed brings the library perspective in today's topic. He has his feet in several camps. First of all, he is a writer and author. He is a columnist for *Library Journal*, for the journal *On-line*, and the journal *Database*, as well as for the newsletter of the Apple library users group. He is the founder and co-editor of an annual collection of case studies on computers in libraries, called *Macintosh Libraries*. It was one of the first books to simultaneously appear in a traditional paper form as well as a hypercard stack. It is now currently in its fifth edition.

In terms of his education, Ed has one foot firmly in the humanities and the other firmly in the sciences. He received an undergraduate degree from the University of Illinois at Chicago, in Art History. But at the same time, he had fellowships in geology from the Field Museum of Natural History, and in geochemistry from Woods Hole. He completed his graduate work at the University of Chicago in the now demised Graduate Library School as well as doing work in the geophysical sciences area with fellowships for teaching and research.

In terms of biographical notes, he states that he is an avid collector of children's books on dinosaurs as well as fossil Apple computers that are both compatible and complementary hobbies, and a portion of his collection of hundreds of dinosaur books was on display at the Grollier Club in Manhattan in 1991. Ed is a member of the Grollier Club. He notes that it is the oldest society of bibliophiles in the U.S., but that at present there is no equivalent society for collectors of extinct computers. Maybe we should take you over to Albany Street to show you what LCS has left behind.

The next speaker, presenting the publishers' perspective is Karen Hunter. She is the vice-president and assistant to the chairman of the Elsevier Science Publishers Group. Karen has been with Elsevier since 1976, and her primary areas of concentration have been on strategic planning for journals and the electronic delivery of journal information. Before coming to Elsevier, Karen worked for Baker and Taylor, and for the Cornell University Libraries. She has a B.A. in history from the College of Worcester as well as masters degrees in history, library science, and business administration.

Some of her recent professional activities have included membership on the board of the Society for Scholarly Publishing. She is a member of the copyright committee of the Association of American Publishers [AAP], and the Committee on Electronic Information of the Professional and Scholarly Publishing Division of the AAP. She also is a member of various committees of the international group of scientific, technical, and medical publishers. Karen is also the originator of the Tulip Project. Tulip is a multi-institutional

project coordinated through Elsevier to explore the possibilities of using mapped images of their journals on materials science on-line. M.I.T. is a participant in that project.

The last speaker, who will speak to us about the electronic environment and what it might hold for the future, is Brian Kahin. Brian is an adjunct lecturer and director of the Information Infrastructure Project in the Science, Technology, and Public Policy program at Harvard's JFK School of Government. His research centers on legal, institutional, and policy issues in the development of new communications and information environments. He is also the editor of *Building Information Infrastructure*, which is based on the project's work. Some of the new project activities, in which he participates, include work on public access to the Internet, enterprise integration, industrial extension, and in conjunction with the Coalition for Network Information, the study of principles and policies for scholarly communication.

Brian is Harvard-grown, with a B.A. from the College as well as a J.D. from Harvard Law School. As an attorney, he serves as general counsel for the Interactive Multi-Media Association, which is a 300 member trade association. He also directs the Association's intellectual property project, which takes a multi-faceted approach to the problems of managing proprietary rights in the multi-media environment. He is on the editorial boards of the *Edge-Comm Review* and the *Journal of Electronic Networking*, and he is also on the board of the Center for Electronic Text in the Humanities. He was also on the original steering committee for the Software Patent Institute. For the Communications Forum, Brian is in some ways coming home. Early in the establishment of the Forum, he served as the Communications Forum coordinator.

So, I will now turn the program over to Ed, then Karen, and Brian, to the discussion they will have among themselves, and then open it up to the audience.

ED VALAUSKAS [EV]: I would like to start with a perhaps radical way of looking at this whole issue. How do we really use information on paper? How do we use information on a computer screen? We know that, at least in a qualitative way, we use text in print differently from text on a screen. What are these differences, and why do they really exist? Suppose we try to understand these differences in using text on paper and text on a screen as a way of building some new rules or ways of making information available. Not with the old rules for paper, but with new rules, based on how we actually use computers and text. Suppose we try to create these rules so they will satisfy everyone--librarians, publishers, lawyers, judges, and perhaps even readers. We can't make new rules without understanding some of the fallacies that exist in some of our current assumptions about digital text.

Nearly everyone involved in these questions about access and control assumes that digital information is as intellectually and physiologically digestible as information on paper. Many assume that digital text will destroy paper text. Many assume that digital information will become more economically attractive than paper information. Many assume that readers will actually prefer digital information to paper. I would like to argue that all of these assumptions are erroneous. There is a growing body of evidence from experiments to prove it. These experiments will really shape the way in which we will make information available in the future. To start out, let's look at paper and how we use it.

We read constantly and endlessly from paper. It's impossible to imagine a paperless classroom, office, home, car, or plane. We are addicted to paper. Each year the average American uses 700 pounds of paper. Ninety years ago, our ancestors, who were not blessed with as many electronic devices as we are, used on average only 60 pounds per year. Even though the United States accounts for less than five percent of the world's population, we consume a third of the Earth's paper supply.

Paper is part of our intellectual life, its cellulose fibers carry black ink and colored illustrations and penciled marginalia like nothing electronic. We all know that computer monitors are really a nuisance to read anything of any length. All of us have learned

painful lessons of writing with a computer and word processor and not proofing our work on paper until it is too late. As a writer, monitors and computers have found a way to embarrass me in print because of the way they make me think I read. Let me explain.

Many years ago when I abandoned the Olivetti for the computer to wordsmith, I was absolutely confident in the security of my words on the screen. What I saw on the screen, I thought was reality. Errorless reality. I remember my first computer generated article. I hubristically constructed it and electronically shipped it off to my editor. She in turn examined it on another monitor, and turned over after her work to page layout staff. Again, on more computers. The deities of word processing were obviously full of mirth over this compound digital arrogance. Eventually, the results of this hubris appeared in the form of an actual printed article, on paper. Only then did we all see collectively all of the typos and mistakes. We never saw them on our screens, even with the most serious stares. In print, on paper they appeared for all of the world to say, "Did anyone actually read this before it was published?"

All of our trained eyes did not see the article. We imagined that our eyes captured every letter. Instead, our eyes and minds were busy multitasking, that is, watching the computer create an image on the screen, while at the same time trying to understand the displayed message itself. My words were no match for the hypnosis of my monitor. Distracted by the monitor's construction of text on the screen, I didn't spot errors literally right in front of my eyes. Now, of course, I print everything before shipping it off electronically. Paper contributes to the health of my writing, and the faith of my readers, wherever they may be.

Why is paper so successful? Just observe how you use a multi-page document on paper compared to how you use it on a computer. On a monitor, I have to depend on my memory for a lot of processing. Or I have to concede that I have no short term memory, which I quite readily will do, and spend a lot of time scrolling up and down to study text. On paper on my desk, it is all before me. I can compare and edit as I see fit, with a flip of my wrist. It is impossible to achieve the same effect at the same cost on a computer. Paper gives me the luxury of concentrating on words, rather than trying to remember what I saw screen display or so ago.

There are basic anatomical reasons why we read so poorly from a computer monitor. I do not want to bore you with details of optics when you expected fireworks on copyright. But the ways in which our eyes deal with text on monitors has a lot to do with how we resolve legal and economic issues over putting the latest issues of *Time* or *Nature* or *Physical Review Letters* in our electronic mail in boxes. How do our eyes see a screen? We have two sets of photoreceptors that catch light from a monitor. Some of this light is focused on photoreceptors on your retina, but there are other photoreceptors responsible for the periphery. They are responsible for night vision, and up to sixty percent of the information that we pick up. These peripheral receptors are really at fault in some way for everyone's inability to read from a monitor, as they are attracted by the antics of the monitor, the flicker of the monitor. All of the work on computer display technology over the past decade has done little to resolve this natural optical problem. It is impossible to substitute a computer monitor for paper, in terms of utility, convenience, and cost. Paper can hold up to 50 times more information for a given area than a computer monitor. We lose up to 40% of the information presented on a computer screen compared to paper, thanks to flicker. In fact, better readers actually lose more information when studying text on a screen than when they are studying the same text on paper. We also read more slowly on a computer compared to paper, up to 25% to 30% more slowly.

There are ways we can improve the performance of computers to act as temporary substitutes for paper. We can use color in documents. Reading comprehension increases by 70% with the use of color, and the rate of errors reduces by 80%. The amount of time spent in front of the screen is also crucial. It is not necessary to spend all day with a computer to benefit from the experience. One study, based on 30,000 pupils, indicates that just 20 minutes of interactive work a day with a computer over the course of a school year

yields an increase in reading skills of a year and half. Obviously, we need to consider the results of these studies and experiments in our designs for digital access and control.

Fundamentally, we treat text on a screen much differently than we treat text on paper. It will be some time before computers are as physiologically or aesthetically pleasing as paper. We will never hear of someone curling up with a good monitor to read in bed, or learn of an electronic book that's a real "window turner." The color, texture, smell, and yes, even flavor of paper cannot be duplicated digitally. . . yet. Paper-based text and computer-based text are used differently. In my own library, where I cater to a technologically sophisticated clientele, I have all sorts of digital products, loaded with journals, conference proceedings, industry standards, vendor catalogs, abstracts, and bibliographic citations. Digital text works for my patrons, not because images on monitors produce warm and fuzzy feelings, but because patrons require quick answers that only digital access will provide. If they need a large document, one to exert authority in their office with a combined gravitational and psychological effect, they'll order a paper copy from a publisher. But, if they need isolated facts, they use digital versions of documents.

There is additional proof from other libraries and institutions that digital information is used differently from paper. These studies all prove that digital text has a place as long as readers are not forced to read at any great length from a monitor. There was a study, for example, at the Livermore National Laboratory of the uses of 19,000 pages of online text. The results indicate that readers search documents online only for specific information. They have no intention of digesting hundreds of pages of documents at a terminal. These readers--because of the intolerance of their eyes to the screen--can tolerate parts of a text on a screen only when it satisfies a focused demand.

So how can we use some of the results of these studies and experiments to invent a way of digital access and digital control for libraries? First of all, we have to accept that our readers will not bother to read a great deal of text on a monitor. It actually will be dangerous to their intellectual health to do so because they will lose so much information in the process. We have to make specific answers available quickly in digital form but we will need lots of printers ready to deliver hard copy on demand. So much for reforestation efforts. We have to think about the way we display journals and books and reports on the screen. They will have to look much like printed versions, at least for now. An intelligent interface will be needed for specifics. This same interface will remember the interests of readers, and provide reports on new articles as they appear.

A prototype of this sort of digital library already exists at the Bell Labs, called RightPages. It allows researchers to check 64 journals from 10 different publishers. I examine an issue by clicking on an icon representing a journal. On my screen, a table of contents appears. When I click on an entry in the table of contents, I am taken to the first page of the article. If it looks interesting, I can send a request for a paper copy, which will arrive at a neighboring printer, or through internal mail. Processing of new issues occurs at night, with three issues entered each working day, with an average of 15 pages per issue. In this first phase of the project, 40 researchers have access to the system. On average, they ask for printouts of two articles a day. More importantly, they only look at a selected page for an average of just two minutes. Those who use RightPages particularly like the alert feature in the program, which points them to articles in their areas of interest, sometimes in journals they would ignore in paper.

So we have a design, perhaps, for our digital library that might work. There are other experiments with digital access such as the Chemistry On-line Retrieval Experiment [CORE] at Cornell, involving journals of the American Chemical Society and Elsevier's TULIP project with materials science journals. IEEE and IEE make their journals, conference proceedings, and standards available on a large number of CD-ROMs. Many of these efforts take into account the desire of readers and librarians for painless search engines, familiar looking images on the screen, and printing ease. These experiments so far demonstrate that readers do not take advantage of digital files, though we have a very small experimental base upon which to make these conclusions. They do not manipulate

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digital text. Digital readers really use digital text to produce paper. The evidence so far does not justify the need for strict control or severe access rules on digital. But in spite of this evidence, librarians have been quite willing to supply records on the use of digital journals, records unlike anything they now do right now for paper.

For example, at Bell Labs, RightPages maintains a log of pages accessed and requests for printouts. It tracks which journals have been used and in which way. Publishers get information on access time, issues frequented, articles requested, and details on features within the program that are tried. Publishers don't get this sort of information from libraries for paper versions. Why should we do anything differently?

Well, we are willing to make a trade. We are willing to provide records for better access, even though in some way we might compromise the rights of libraries and our patrons in the process. We are really responding to a fear of the unknown with digital. There is this sense of a loss of control over digital access to printed information that paralyzes some publishers. At the recent World Intellectual Property Organization Symposium on Digital Technology, held at a law school down Massachusetts Avenue earlier this month, control was a central theme. One speaker mentioned that, and I quote, new technologies would "lead to conflicts with the normal *exploitation* of intellectual property, *unreasonably prejudicing* the legitimate interests" of copyright owners. Another speaker indicated that digital access meant all rights needed to be revisited, including and I quote from his paper "*the freedom of reading a book*" or viewing a work on the screen. Yet another presenter proclaimed that control and the economic benefits implied by control are societal imperatives if the arts, and, indeed, human civilization is to thrive.

Control of digital text is certainly important for very basic economic and utilitarian reasons. A survey of three dozen creators of electronic journals indicated that they wanted their work to reach the largest possible audience, that it be used with proper citation and context, and that any manipulation occur with the copyright owner's permission. Some of these publishers have discovered problems with the corruption of their files, if they are not properly taken care for. The publisher's control by copyright gives them the right to make sure that these files are correct, and also gives them the right, in their interpretation, to maintain a perpetual license for their products.

Repeatedly, interpretations of copyright have been used with digital media as a means not only to control the market but the user. Official sounding proclamations and documents that appear as licenses try by terror to frighten users, and librarians, into surrendering rights guaranteed by law. These acts by one side try to impose rules on another. Treating customers like thieves has never been good business practice. And the wording of some of these documents assumes that all digital information will be copied en masse by everyone as soon as the opportunity presents itself. As Ray Patterson and Stanley Lindberg point out in their excellent book the *Nature of Copyright*, copying, even the copying of digital products, requires time, effort, and money. To assume that readers will copy massive text files is quite a fallacy because, remember, we have trouble reading these files in the first place. To assume that copyright gives the owner of any digital work an absolute monopoly over access and use ignores the basic intellectual premise that is the heart of the copyright--to promote public welfare by the advancement of knowledge.

But control provides a means for economic gain for publishers. How can we use that? No one will deny the right of publishers to exploit works under the terms of a limited monopoly allowed by copyright. We as the users and distributors of digital works should see this control as an opportunity to prove the value of libraries as marketing agents. Librarians have been derelict in pointing out that our institutions have economically benefited publishers for years. To some extent we already have become promoters for digital entrepreneurs. Let me provide you with just one example. A public library in upstate New York circulates hundreds of software packages to its community. Software stores and computer retailers are not complaining at all about lost sales or dwindling revenues. In fact, they strongly support the library and its software circulation collection. They refer potential customers to the library to test software at home from the library's

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collection with their home based machines. They return the software to the library and make the right educated purchase of their favorite word processor, spreadsheet, and yes, game. Sales of software have actually increased thanks to the public library providing a way for the public to test programs comfortably at home.

Perhaps we should see libraries as special kinds of agents, because access to digital information will open up even more possibilities for sales, especially of paper. Libraries provide a means for publishers to exploit markets in the most targeted kind of way. The kinds of customers who use libraries also use book stores, magazine racks, and other media outlets. Yet not all patrons of libraries have the surplus income to purchase information. Libraries are a haven for the information poor as well, and the cost of digital information is making this audience grow larger and larger. In the United Kingdom, access to 30 minutes of a commercial database would equal half of the salary for a week of a family just making it on an average British income. Here in the United States, the information poor are not just the adults and children with barely the funds to put food on the table and clothes on their backs. They are scholars without a pot of research funds or affiliations with properly endowed institutions. They are undergraduate and graduate students scratching every penny from odd jobs, with not a cent an electronic surf ride in DIALOG or NEXIS. They are writers who lose themselves in institutions like the Boston or New York Public Libraries to do their research, because they can afford to pay with their time what they cannot afford to pay with their wallets. Libraries for these people are the last great bargain in the world.

Libraries can work with publishers to provide universal access to digital information without strangling those who can least afford it. Much as Theodore Vail transformed phone service at the turn of the century by creating a system of revenue that allowed for a modicum of access to telephones around the country to anyone, so can publishers and librarians work together to provide digital access to everyone. There will always be institutions and users who can afford to pay for access, and will even pay a premium. But we have to carefully measure this trade of control and exploitation for access, remembering the results of some of the experiments I mentioned, experiments that test viability of paper relative to text on a monitor, while not surrendering our rights as readers and as libraries. We should not treat intellectual creative products as simple commodities.

A little philosophy may help us work with all this digital information. I would like to quote from a recent decision by Justice Sandra Day O'Connor's opinion in the case of Feist Publications vs. Rural Telephone Service, "the primary objective of copyright is not to reward authors, but to promote science and useful arts. To this end, copyright assures authors the right to their original expression, but encourages others to build freely upon the ideas and information conveyed by a work . . .This result is neither unfair nor unfortunate. It is the means by which copyright advances the progress of science and art." Libraries in this country are unique in the world in their freedom to make information available. The Constitution and Congress in their definition of copyright also define the right of libraries to act as the intellectual agents for everyone, by providing a means of access to information without economic penalty. This right of access could be lost with the appearance of electronic text.

Libraries indeed are the best testing ground for experiments with access, because we know a little bit about our clientele. Thanks to some of the experiments that have been conducted, we know now that readers cannot deal with lots of text on a computer screen, that they prefer paper as a medium for reading anything of great length, and they will tolerate record keeping and controls if it means easier access. The results of experimentation have helped us solve some technical and legal problems that will improve access in the future. We may not be able to overcome the ways in which our eyes react to monitors, or end our dependency on paper, or avoid the seduction of networked resources at our fingertips. But by respecting the rights of publishers, libraries, and users jointly, we can use digital information in ways we barely imagine now. Or so we can hope.

KAREN HUNTER [KH]: Greg asked me to talk about my perspective as a scholarly publisher of scientific and technical journals, and to talk about the new intellectual property issues we see and what issues we anticipate as we continue into an electronic environment.

I want to start by stepping back fifteen years to when the new copyright law took effect, in January 1978. What were the copyright issues that concerned journal publishers at that time? At the risk of over simplification, the concern was really one: library photocopying. Publishers were beginning to see a downturn in the number of subscribers to their journals. At the same time they saw a growing traffic in photocopied articles, that is, articles for which no payment was being made. That left some publishers to come to the conclusion that their single biggest copyright concern was library photocopying. What came out of that were a series of negotiations, and what I would describe as a fairly convoluted or contorted guideline as to how many copies libraries could make, under what circumstances, as well as other wording in the law, which as we all know, is subject to interpretation and was left in part intentionally vague as to what is permissible fair use or not.

Unfortunately, fifteen years later, we as librarians, publishers, and other educational copiers, are still, regrettably, in heated disagreement and litigation over what is permissible and what is not. I mention that only because I believe we are carrying some baggage from our paper world into our discussion of electronics. If we had solved one, it would be easier to go on, but we've got both discussions going on simultaneously, and that is unfortunate.

Having said that, during the 1980s we had the blessed period when copyright seemed to move off center stage. If, at an industry meeting you had a discussion of copyright, you had maybe five people in the room. It was a sure thing to put people to sleep. Then we got the networks, the stakes changed, and all bets were off. Largely, but not entirely because of changes in research in the university environment, publishers feel pushed into a very strong renewed defense of copyright. Now, if you hold an industry session on copyright (and they are held quite frequently), you will have an overflow crowd. The copyright committee within the American Association of Publishers literally overflows the room when it meets.

What, then, are the key issues of the last five years, and what is changing? Four years ago we had a special issue of *Change*, the magazine on higher education, concerned with the issue "Can intellectual property be protected?" The provocative editorial by copyright iconoclast Harlan Cleveland proclaimed, *"How can intellectual property be protected?* The question contains the seeds of its own confusion: it is the wrong verb with the wrong noun."* The same year, the Society for Scholarly Publishing held a top management workshop on copyright in an electronic era. Daniel Schorr was asked to moderate a videotaped discussion of copyright issues. There were twelve participants in that videotaped discussion, each of us representing a different perspective; I happened to represent the publishers' perspective. Before the panel started, Schorr said he'd introduce a hypothetical situation, asking us to accept the hypothetical as real, however bizarre. Schorr laid it out as follows: I'm a guy, just a sleazy guy, in Washington. I'm contacted by the Ministry of Health of Tanzania, who says there was just a journal issue published with articles about AIDS, which are really essential for us as they will help us in combating AIDS in our country. Will you please find a copy of that issue, put it in the computer, send it over to us. We'll distribute it around by computer to all the hospitals and doctors in the country. By the way, we'll pay you $5,000 for it. So, obviously I will find a copy of the journal, put it in the computer, send it over, and they distribute it. I get my $5,000. At that point, he stood back and said, "Karen, it was your journal. What are you going to do about it?"

Well, you can see the videotape. I don't need to tell you what I did or did not say. The reason I bring it up is not just to name drop, but to show that, in 1989, what was running through my head, besides what do I answer, was what a bizarre thing to suggest.

How could he get it into the computer, and send it over there? I mean, the whole thing is silly. Now, if I look at that again today, I say it could happen any day, but you would never have to pay $5,000 for it; there would be a good Samaritan who would do it for free. The world has really changed in very dramatic ways in a very short period of time.

Now, we fast forward to today. What are we as publishers of scientific and technical journals concerned about, and what are we not? I must say that I am speaking for myself, and there are other parts of the company who will not agree with me, and certainly some of my colleagues will not agree with me. But, I want to start by just saying one of the things I am not concerned about is piracy. Maybe I should be, but I am not. In 1991, there was a librarian who wrote, "Computer screens glow late into the night as information vampires raid the electronic library to gain needed sustenance to produce derivative works." Sounds like *Barbarians at the Gate*. What was he talking about? I was afraid he meant publishers when I first saw the article. Was he exaggerating? Is it not a problem?

Well, we have been distributing scholarly information for twenty years. It happens to have been abstracts and indexes, and not full text. But in twenty years, we have not had a problem. If by piracy, I mean the deliberate theft and resale on the network or in print, I have a hard time getting excited about it. It may turn out to be a problem, but scientific journals are rarely even pirated in paper. It has not yet been a problem, and I am just not convinced that with scientific journals that it will be a problem. I remain to be proven wrong. I would also say that the Internet users strike me as a very responsible group, protective of the network, and I feel reasonably confident that if someone were selling my journal, I would hear about it pretty quickly.

So, what is another thing I am not concerned about? I am not concerned about data security or data integrity. Why not? Again, maybe it is one of the blessings of being a scientific journal publisher. It is certainly quite possible that a scientist or a hacker will try to change the data of someone else, and try to reinsert it into the database. It is possible, and technically we can do a lot to try and prevent that and we probably will. But, we have to trade off the cost over the real likelihood that it will happen. What I suspect will happen in the long run is that, in fact, we will do what we do with paper, and that is, rely upon the author and peer group and the scientific community, to detect fraudulent activities when they occur. I am not saying I am not trying to minimize it. I am saying where do we put the resources, where do we spend money. I am not sure that, from the point of view of the scientific publisher, this should be done. In that respect, some of my colleagues in the library community have said think twice or three times before you are sure that the profits are really there.

A third intellectual property issue that I am not concerned with, or maybe not in the way you'd expect, is the question of liability or blame. There was a workshop down at the National Academy of Sciences earlier this month that was based around the number of case studies or scenarios. There were panels on different topics: on privacy, on free speech, on electronic vandalism, and on propriety rights. Virtually all of the questions that were raised had good, lawyer-like sounds to them. If x happens, who is liable, who is responsible, what is the obligation, etceteras, etceteras, etceteras. These are important issues. But from the producer/customer side, in that case, myself and the librarian on the proprietary rights panel, we both said you simply have to deal with things on an ad hoc basis. Perhaps we are, again, underestimating the liability issues and underestimating the questions, but it is not something high on my list of topics.

Then, what am I concerned about? It sounds like I am not worried about anything, and this certainly is not the case. If I had to pick one thing as my lead concern, it would be the overly ambitious expectations about what electronic dissemination and networks should do. Consider this statement that was read last week by Representative Boucher, introducing his applications bill. Basically what he is saying is that everything should be available to everyone everywhere. It is a real nice idea, a wonderful dream, it is indeed the electronic "Field of Dreams," but it makes me real nervous, because if you are really going to do that, what is the mechanism for handling copyright? There are some words and

language in the bill, which are sort of marginally helpful, but it is not totally clear. There are testbed efforts to build copyright management systems, but they are struggling, whether they will get there or not is unclear.

Copyright management is a very complicated issue. Let me give you an example. One of the issues that many of you here might be aware of is that there has been increased activity related to photocopied course material. It is a difficult issue. One of the reasons it is a difficult issue is that, for many publishers, the rights they hold have limits on them. Therefore publishers cannot just say on a blanket basis, okay, do whatever you want. Often if they have the right to a poem or an illustration, it is for a specific time or place, like in an anthology. But they do not have the right to in turn say, you can do whatever you want, or set a price on a blanket kind of basis. Copyright as now maintained is complicated.

This leads to my second concern. If the goal or dream is everything for everybody, everywhere, are we headed for compulsory licensing, or some sort of similar legislative blanket rule of use? It is worth noting that vice-president Gore, champion of the amendment, is from Tennessee, a music state. When you think of copyright in a music state, you think of the ASCAP model, which is different from what we might think of for journals. This is not a gratuitous analogy as there are rumors of compulsory licensing for network delivery. Most journal publishers believe that such compulsory or blanket systems wind up being sort of the lowest common denominator, such as a penny a page, regardless of whiat is on the page. But, what is a page in an electronic environment, I am not sure. That uncertainty will be inadequate to protect their investments.

This leads to my third concern, which is that there is a confusion, or even chaos, over copyright transfers. Let me go through this very quickly because I believe it is an issue for which there is more smoke than fire. In the last year or two, there has been a small group of librarians who have lobbied to change the regular process by which scholars transfer copyright to publishers. One of the suggestions is that scholars should retain copyright, and give publishers a non-exclusive license, perhaps limited to the first paper publication. That amplifies a problem we already have with a number of trade publications. It means we would now have a much larger volume of materials over which publishers are not empowered to grant rights to people who need rights. Given the clear desire of the market for electronic delivery, most publishers I know would absolutely refuse to accept cases if they have any limitations on their ability to use paper electronically.

Another suggestion has been that copyright transfer be limited as to require the publisher to allow unlimited educational copying. It sounds like a good thing. We are here to produce journals for further education usage. The problem is if you permit large scale redistribution for educational purposes, many journals will lose their only viable market. Robin Hood, notwithstanding, the failure not to charge money for a transaction does not sanctify that transaction.

My fourth concern is "What is fair use in an electronic environment?" Will I concede some electronic version of fair use? Will I concede, for example, that there are some things that could be converted from paper to electronic venues without asking my permission? Good questions, but the subject of another talk. I will not answer them right now, but I think they are very important questions, and we have to struggle with them.

My final concern deals with archiving. I think one of the key roles of journals is to provide a final archival record of research. That will be equally important in an electronic era, even more so in many respects, as there may be only one master electronic file. One of the questions we must answer is: "Who in the future is responsible for insuring long term preservation?," a role now provided in print by libraries.

What are the steps scientific journal publishers can take? First, we must remember our mission. It is to facilitate the communication process among scientists. That means, to be sure that information is widely disseminated, readily available, and preserved for the future. So, we must design our commercial relationships, whether for profit or not for profit, to do that. There are three ways we can do that. The easiest way is to provide for

archiving. Perhaps, if we sit down with groups who have archival responsibilities, mainly libraries, we can agree upon secure archival procedures for electronic journal files. Ultimately, there may have to be legislation, but I hope not. In that respect, there have been some early discussions between the Copyright Office and the Library of Congress, and some other archival libraries, such as the New York Public Library.

The second thing we can do is design financial contracts and terms for electronic information which encourage the maximum use with the minimum hassle. For the moment, most of the transactions will be through intermediators, such as libraries. I think the key will be to develop sufficient flexibility in the licensing that the intermediator can serve their end user community. Basically, I am saying that publishers have to get away from the Henry Ford model of doing business, that is, you can have whatever you want as long as it is black. We have to be much more responsive to what the user community wants, and find ways to get that to you in a flexible way. By the way, my feeling is that it will be on a fixed fee sort of basis, not a payment for use.

Finally, in the whole process, we must focus on the creator and reader of journals. To the extent that publishers can add value to the organization, delivery, access tools, and financial foundation of editing and publishing in an electronic environment, publishers will continue to have a role. For that role, we would deserve copyright coverage for that investment. If we don't add enough value, we will be displaced, either directly by others taking over our function, or indirectly, by widespread abuse or disregard of what we do. I think it is worth noting that Microsoft continues to flourish, in spite of shareware, alternatives, and in spite of illegal copying of their software by offering innovative, high quality products to the market, and creating added value to the user. It is up to journal publishers to do the same. We must make information access better and faster, and if we don't do that, then we don't deserve the copyright transfer we ask for.

BRIAN KAHIN [BH]: I am going to say almost nothing about copyright, though I will start off there. I mention the classic bundle of rights that constitute copyright, and it is important to know they range from the classic right to make copies, which is where copyright began (and gets its name), and these are the five rights enumerated in the 1976 act. If something does not fall under those rights, the user has a right to do it. While we are all very familiar with how promiscuously information behaves in a digital environment, in fact, as you move towards a more sophisticated environment, more and more legal mechanisms come into play. You start out with reproduction rights in a print environment, but then as you move into an electronic multi-media environment, all of the bundle of rights eventually come into play. Not only that, patent and contract also come into play.

Actually most of what I am going to be talking about is contract. I will say a few things, however, about patent as well since I actually do agree that software patents are a horrible mistake. Let me show you one. This is a claim for a patent for a document merger: "a method for merging a portion of one document into another document, say method comprising: (a) including a reference in said another document to said portion; and (b) causing said portion to be merged with said another document and displayed in merged form." That means, if this is a valid patent, the company that owns it can keep anyone else in the country from using that process. Now, what can you do with something like that?

Well, in 1988 the Congress passed a document that said this: "Whoever without authority. . .uses within the United States a product which is made by a process patented within the United States shall be liable as an infringer. . ." This was targeted towards companies in other countries that were using processes that were patented in the U.S. to create products, and then shipping those products into the U.S. What this means is if you create a document using somebody else's patented process, it is an infringement to read that document. So if you really want to control your information, make sure you create it with a patented process for which you own the patent.

That is, of course, very different from copyright. During the pre-1976 regime, we had a two-tier system that, until a work was published, there was a common law copyright

that was administered by state courts. So, you did not have to do anything as long as the work remained unpublished; and it lasted forever. Once the work was published, the publisher had to register the work with the Copyright Office, and got statutory copyright. Basically, the user had no constraints on use. This is because in the classical model of distributing text (which applies actually to home video as well), we have an arrangement in which copies are sold, and once sold the first sale doctrine says the copyright owner no longer has any control over those copies, so that they can be resold, they can be rented, and they can be loaned by libraries.

In this model, the publisher and the library perform very different functions. We move from the model where works that are sort of abstract creations that do not get copyrights until they are fixed in something tangible. They embody expression in the form of copies. So, this is a dualistic model, where we still have copies, but we also have works being displayed. The display or performance is the last two of that bundle of rights. Of course, that applied to things like broadcasting where there was not an actual reproduction. In the computer environment, those two forms get very intermingled. One can go very quickly from copies to display, and in fact, copies are made in the course of displays.

Now, one thing that this kind of environment affords is a more direct path from publisher to consumer. The publisher can easily get directly to the consumer in a network. The opposite vision looks something more like a jumble, with all sorts of intermediaries that can add value to the information. . . if they trust each other (which they probably do not). But, in an ideal market, you would like to see this sort of thing going on. That means there are more different forms of information, which suits more people's purposes, and the total market is larger.

So, actually we are going from a model of direct links between publisher and consumer to a model where the publisher has all sorts of options of reaching down the distribution chain. In fact, what happens is that there is no longer the functional distinction that you had earlier because everyone in the whole distribution chain is involved in providing access to information. The role of the library is to provide access to information, and the role of the publisher is to provide access to information. Now what this illustrates is that there are many different roles that can be played, and the rights do not run smoothly down this chain. You have underlying rights; this is the basic problem that multi-media industry faces.

Why is this different from the movie industry, which also has to assemble a number of rights to create an end product? What happens in classic analog media is that you end up with these classic forms, although you do get a lot of feeding into motion pictures and video. But what happens in multi-media is that you get kind of an implosion of these classic forms, and you introduce text and images that do not exist as discrete elements in motion picture, data and computer programming. The programming exists not only as an element, as an object, but as something that brings everything together. What happened to the motion picture industry as it was maturing back in the 1930s is that the distribution chain did not look like a chain at all. This is because all of the creative elements were pulled together by hire. So, the copyright belonged to the employer, which was the studio, and not only that, the studios controlled the distribution—a very simple, vertically integrated system.

What is happening now is that all these classic concepts are getting blurred. The distinction between the product and service, everything that is remote is local because of the network, and the distinction between mass produced and individualized is lost because the individuation can be automated. Also, the distinction between broadcasting and one-to-one communication breaks down. You are all very familiar with this in the network environment, how lists differ from one another. Further, when it comes to licensing we are getting very sophisticated, yet very volatile concepts of what the licensing concept is. The enterprise can be all sorts of these things, and in enterprising you do not want to be

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locked into one form or another. On the other hand, you do not want to lose your licensing rights when you move from one form to another.

The technology also gives us all of these options, like these measured use options (e.g., time, volume, item, and process) that have been exploited for many years by on-line vendors. There is quite a bit of confusion, particularly in the software industry, about how to license use. It started off being by machine. The Copyright Act sort of starts one off licensing by copy; that is sort of how people think. The Borland Like-a-Book license makes people pretty comfortable. There is, on the other hand, a lot of impetus for institutional licensing. I agree with Karen that flat fee institutional licensing is going to drive much of this environment just as it has for network. Concurrent user licensing has become very popular for network licensing of published software. Of course, you can have all different combinations of these, too.

We are operating in a technologically sophisticated environment, where intellectual property as a legal concept is only one corner, specifically the lower right-hand corner. A lot of what you are trying to do is not just control property, but to build your market. This introduces a number of choices publishers did not used to face. Now, I want to take an excursion, and raise a particular set of issues that are faced in scholarly publishing. This is how a network-based collaborative project might look, in terms of having three principal investigators, in different parts of the country, each with a different group of RAs. *(Kahin shows a slide of three separate research groups, each consisting of a principal investigator [PI] and several research assistants [RAs].)* If they produce something in the course of their research, if they produce a journal or if they produce a patentable invention, who owns the rights to it? This is a big problem that most people would rather not deal with, and many do not deal with, with unanticipated results. With formally funded research, it does tend to be dealt with, at least the patent side does.

But let's look closer at a particular situation. *(Kahin shows a slide in which three different principal investigators have three different and distinct payroll arrangememts with their RAs).* What the shaded areas mean is that the university has a student on payroll. Typically the interest that student contributes to the research report, and the scholarly article that emerges, belongs to the institution. But most universities have a long-standing tradition of allowing faculty to retain copyright in the articles they write. So you might see something like this. At the institution in the upper left (let's assume all participants have their names on the article), all RAs are on salary, their interest belongs to the institution, the PI has an interest that belongs to him or her. In the lower left, on the other hand, here is an institution that treats its RAs a bit more liberally (ie., he/she essentially gets treated like faculty). At the third institution, (maybe this is a non-profit organization that does not labor under these academic traditions), the work of the PI actually belongs to the organization, or to a private consulting firm or company. However, there is one RA there who is actually on contract, and they forget to get an assignment from that person. So that person actually holds an undivided joint interest in this work as well.

So you have all of these different interests and it is hard to figure out from the title page of the article who actually owns the piece. If a publishers wants an assignment of copyright, he must get them all to sign off on it. That is pretty difficult if you want a true assignment of copyright. If you are willing to settle for something non-exclusive, then it is much easier because any of the authors could give you that, because they are all joint authors, which is to say the work was written with the intent that the contributions be merged into an inseparable whole. Well, the answer to this question of how should the licensing of articles for publication be conducted is not that the university should be the absolute owner, which would be politically and culturally unacceptable, but that the university and the researchers are joint owners. So, essentially half is owned by the institutions and half is owned by the twelve individual contributors.

You might think this is a pretty clumsy arrangement. Well, if there was any money to be made from it, it would be a clumsy arrangement. So, I don't think this would apply to textbooks, but it would apply journal articles. At the same time, you need rational

processes for getting this out in the marketplace. I think it may end up being by common practice or consentual agreement within the university, or under some kind of academic code as to how publications should be handled, that you would end up giving a publisher an exclusive first right by contractual agreement, or by policy among this group.

I also think that what we will end up with, in specialized fields in particular, is a model whereby there is some kind of advancing of what the real market is, how much people are willing to commit. What this is essentially is a subscription market, so that, for example, the publishers says he would like to come out with a journal twelve times a year on an extremely obscure topic. How many libraries will buy into it? You do this on a network, of course, and if enough advance subscribers materialize, then the risk is sufficiently small that you go ahead and publish it. All you guys get an advance subscription at the publisher's best price, and he will do what he can in the after market.

The after market looks like the following: this secondary market consists of subsequent subscribers, archives, and document services. This model also provides for pre-market support, which (especially for a non-profit publisher) might be in the form of editorial facilities in a research program in a topic related to the topic of the publication. It might be foundation underwriting. In fact, this is essentially the model used to create the core schedule for public television. Every year there is a marketplace, where the producers come to the stations, and they do not necessarily come because they can uplink the programming. The stations see the offerings, and on the basis of what they see, they go through rounds of voting, until the core schedule is bought. This has been refined over the years. It works fairly well, it is a fairly conservative mechanism, but it is at least rationalizes the market in the cases where the volume of the market is relatively low. It is pre-commercial, so there is not going to be much room for multiple publishers in a certain field.

[GA]: Thank you. What we would like to do first is allow the three speakers to talk among themselves, if you have questions for each other. Then we will turn it over to discussion by the audience. So, if any of you have any questions. . .

KH: I have just one. I was particularly intrigued by the last few things Brian said because it reminds me of an idea I had a while back, which I discarded. It seems now that there might be a way to do it, if I could ever get people to try it. That is, it is a standing presumption within journal publishing that, given the situation with library funding and other patterns of activity, that even if we were to significantly lower our prices, that it would not be compensated by an increased number of subscribers. Yet, one would rather send the journal to a greater number of places than to have the price higher for a fewer number of copies.

At times, I felt I would like to put out on the Internet the offer that if I get x number of subscribers by such and such a date, the price will drop by so much. If it does not happen we cannot do it, but if I can get people to buy back in, we might be able to reduce the price for everybody. I had not thought about doing it on the networks, but that would be the way to do it.

BK: There is another problem here, and that is, getting libraries feeling that they really understand the priorities of the constituency they are buying for. We have to get those processors pretty well displaced. And they are starting to get in place in large part because of the serial price issue.

EV: I think that libraries are beginning to realize the role you play in using networks as a vehicle to provide a way of linking consumers to publishing. There is a bit of serendipity that may come out of this whole process that one would not suspect in advance. There is something about the network that causes this to happen. For example, there was a column that I wrote which appeared in print a month ago. Over the network, I received a note from

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a systems librarian in Hungary, of all places, saying he had translated the article into Hungarian, and wanted to distribute it over the Hungarian library network. Things like that will happen, which you cannot predict, and which will act as a catalyst for serendipity. Unexpected events will happen that will benefit both libraries and consumers.

What is interesting about this article is what actually happened. My first reaction was, sure, you can have permission to copy this. Then I remembered I signed this little piece of paper with the publisher, which I turned over to them. He kept ringing me electronically every four or five hours. . .did I hear an answer, did I hear an answer? And I said, no. It took about twenty-four hours to hear from the publisher. I contacted my editor, who contacted the corporate headquarters, and after a great number of meetings at long tables about this Hungarian article, the answer came back that it would cost him $350 to distribute this on his network. I said to them that they might as well have said $350,000.   So, he wrote back that he'd take his translation, and if I would not tell the publisher, he would distribute it manually to people if they want it. So goes my first and only translation. . . I was waiting for the Lithuanian version, etc.

GA: General questions from the audience. . .

Q: I do not have a question. I have a brief statement. The vision I have seen here is very narrow. The structure of business and legal system that was set up for earlier technologies is mostly taken for granted as something that someone should not even dare to question. Therefore our way of life in cyberspace has to be squeezed to fit. You can see that in the title of this meeting, in the abstract, which says that new technologies create problems for traditional intellectual property systems. This seems to regard the traditional forms of intellectual property as what is really important, and it is just a shame that new technologies that enable those mere users to do things get in the way, which is sort of like Faulty Towers, where we could run a great hotel if only those guests did not keep coming around.

In fact, I even heard the statement that "we would deserve copyright for our investment." This is interesting because it passes for a statement of generally accepted legal principles, but in fact it is 180 degrees against the U.S. legal system. We had the recent Supreme Court case that decides that investment does not cause copyright at all. Copyright is not based on anybody's investment, but beyond that, we have a constitution which says that the purpose of copyright is to promote progress; it is not an entitlement. When we choose a president we do not ask who is more deserving of being president, we say which president is more likely to do a good job. It is the same thing with all intellectual property questions in the U.S.

No one is ever entitled to a copyright or patent, the legal system never said they were. Those kinds of intellectual property were set up for a social and public purpose, and you can see Supreme Court decisions backing this up. Yet, the idea seems to have spread that someone might be entitled to a copyright, whether it hurts the users or not. One might speculate it is because in discussions like this one, the industries involved in generating the information play a big role, and they naturally tend to push a point of view favorable to their income.

If, instead, we look at the basic purpose of intellectual property, we can get very different answers. For example, in the field of music I intend to have an article published soon, which proposes a modification of the tax on digital media, where we redirect the money to get the maximum benefit in terms of promoting musical diversity.

When it comes to journal publishing, another idea occurs to me. Get rid of journal publishers entirely, and instead have organizations that undertake to do certain kinds of editing and review, essentially supporting by going to institutions that regard scientific publishing as useful, and saying give me money, and for each x dollar you give me, I can manage to review and to come out with one reviewed article. And you will find that various institutions come in and fill the gap until the gap is filled.

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I recently arranged money for a programming project in this way. There are various computer companies that find it useful to have this project done. I went to them and said, "Well, we need a certain amount of money, why do you not give some?" And after awhile, I found enough and they gave it. I think this will become easier and easier for journal publishing especially as the spreading of information technology makes it easier and easier. After all, the authors can now format things themselves. So, if the organization that used to do that job disappears, it will no longer be disastrous the way it used to be. I think we need to regard as paramount what does digital information technology allow us to do, and how can we encourage people to produce information without forbidding people to do all those useful things the way copyright does forbid them.

BK: I will just make two points. I believe sometimes progress does need investment. I think there is a balance there that has at times gone too far, particularly in the context of what we mean by technology transfer. As that has been talked about in the 1980s, that usually meant we need to provide a lot of protection to somebody who will feel confident enough that they have a monopoly position to exploit their rights. The network does shift that balance significantly; it makes public domain dissemination and technology transfer more efficient, but not to the exclusion of proprietary protection. There is a real lack of sophistication there in political thinking. Much of it has to do with the size of the market. We have to think about proprietary protection in terms of the way the Orphan Drug Act does it. If it is a very small market that would not get exploited in the public domain, we will have this particular domain to do that. But, if it is a very large market, as it is for operating systems, you could do without a lot of protection. That is why Microsoft does so well.

Q: I wanted to address something that Karen Hunter raised, and then side stepped, and that is the issue of fair use. I am fascinated by the area of fair use, and wanted to ask a question, not a general question. Let me give you an example of something that happened recently, just so everyone has something in their mind. Then I would even like to hear from the audience if anyone has an idea in this area.

As some of us of the Internet have been looking at the issue of use net feed. Anyone can either get a feed to their own computer, or look at it on a host machine. Under that there is something called recreation, and under that, a movie section, in which you can talk about various movies and reviews. Some of us were talking about *Dracula*, and I was interested in this. There were about four or five of us who were going back and forth, and I was asking what is the significance of Dracula in today's American society. We were going back and forth; it was interesting. Then I saw an article come out in the *New York Times*, that was very on point. So have dealt with the *Times* before, I called up and spoke to the people who protect the paper's copyrights, and said I wanted to post this article. Now I do not know exactly who it is going to go to. So, of course, I needed to speak to someone who knew something about this. So, I called Brian Kahin, and asked what he thought.

Brian said, I am sure that is alright if you just send it by e-mail, and thought it was alright if I sent it to a few people, but we were not really sure what would happen if I posted it in this use net environment under Fair Use, and let's say a total of five people actually acted on it and a total of fifteen people actually read it on their news reader. I think it might constitute fair use, but you can see this also opens up further dissemination.

A few years ago, an Office of Technology Assessment panel was talking about what to do about software copies. The panel, made up of publishers, was pretty sure that they should not copy it. I said that the ethical principle is that copy constitutes a lost sale, and if it did not mean a lost sale, then it should be okay to copy it. No, don't introduce that, they said, we want a simple moral approach. If you think about it, not only might it not mean a lost sale, but by posting something from the *New York Times*, I might actually be doing sales promotion. So there are two concepts. Would my posting of this article be

a lost sale? I don't think so. Might it even be sales promotion? Yeah, I think it might be. So, I am trying to introduce some conceptual tools by which we might think about this. So, while OTA might side step the ethical issues back then, as things come together, we will not be able to sidestep anymore.

KH: Brian may have some legal specifics about where we are going to be in the fair use environment. I can only tell you what I want to see happen. As a journal publisher, I want to see the material I publish used and distributed and disseminated as widely as possible. If that does not happen, then something is wrong. So the first premise is I want to see things disseminated, and I want to build a framework in the electronic environment where I can encourage that to happen. My own feeling personally is that I will not be necessarily looking to profit from each use, but that I am not going to be terminally hurt by the use. In other words, the point would not be to maximize each sale, but to look at the total situation, and say how can we do it. I think what will happen is that journals will have a great deal of latitude, so you have site licenses, institutional licenses, you might have group licenses. Then within that, there is a great deal of ability for people to do what they want to do.

Q2: What did the *New York Times* say?

Q1: They went back and forth, then said they'd get back to me.

EV: There is some evidence of book publishers allowing authors to put sections and chapters of books on the net recently, and there seems to be some indication that it has actually helped sales a great deal.

KH: This is a difficult issue, where we get a chapter of a handbook or chapter of a book, in which the author will ask, "by the way, I would like to put this up on the server." It is hard to know what we should tell them they can do, whether to say, fine. . .I am nervous.

EV: In some of the problems that have occurred in the past with experiments like this, some of the organizations that are very conservative about dealing with this, even though it is part of their charter to make these documents available. I am talking about industry kinds of standards that are reluctant to put up standards, for example, for electronic devices or buildings or automobile parts, on servers, even though part of their charter is to make these things widely available. This occurs in part because they fail to see that this will actually help profits. Documents can be put up in such a way that if they are images of pages, the images cannot yet boast such high resolution that one could do great stunts with this material. There are ways of dealing with this, and I think publishers have to see the value of it from an economics standpoint.

BK: Part of the problem is that it depends on who, in the company, you have because if you ask the legal department, you are going to get another answer than if you ask the marketing department. Why do patent lawyers like software patents? Naturally.

KH: Yes. There is a wonderful example of that. We have certain rules that govern the republication of our material by other publishers. We had an author write in, (he must be one of our most prolific authors), who has been publishing in one of our journals for thirty years. Now someone wants to put out a collection of his different papers--or sections from them--and he was looking for the right to reproduce tables. Not the whole articles, just the tables from about 120 odd papers, over a very long period of time. It got into the department that usually look at the figures in tables, calculate it out, and said, yeah that is fine, but it will cost you $2,000. The poor man was horror struck. Fortunately, someone else said, what are you talking about? Forget it! It is fine, you have our permission to do it. But, it is just incessantly a problem.

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GA: Okay. Last question.

Q: Last year a San Francisco company published a book called *A Greener Boston*, an environmental directory of organizations and businesses in the area involved with environmental activity, a series of interviews, a listing of what they do, and so forth and so on. I bought a copy, and was interested in using it in creating an environmental video business. The book contains a mailing list for interested parties to mail out brochures, or cards, or offer my services. So, I borrowed my friend's Macintosh to enter the names and addresses and digested the information that was there into a series of key words, so if, for example they were involved in energy, energy would be keyworded, etc. , probably about 20 different keywords.

      I telephoned the authors before I started doing this, and she was in New York for the summer. The day after I finished it, I talked with her. Now what I realized while doing this is that the book had no index, but the database I developed had a variety of different indices, so for instance, I could draw out all of the organizations involved in curriculum development. Or I could draw out all of the organizations in Cambridge, or in a particular area. She and I talked. She was not sure about the right situation. She was not sure whether she wanted to (or could) have the thing released as a database to serve as an organizing tool within the environmental community here in Boston. Also, she got very uptight when I asked her if she would allow me to go ahead and sell what I had done, because I felt I had added some value to the project. In thinking about it, approximately a third of the listings there were not known to me previously. And within the context of Daniel Schorr and the hypothetical question, how sleazy am I?

BK: Well, the preferred way to proceed with something like that is to sit down with nothing in front of you, and come up with your own list first. Then possibly use hers as a checklist, and have some other people as a check. But since you started with her book, that is a bad practice as far as copying is concerned because you are building on her collectivity. That is the problem.

Q: But isn't that comparable to the Yellow Pages compilation?

BK: But the Feist case was not about Yellow Pages; it was about white pages. The cases surrounding Yellow Pages seem to hold that they are protectable because there is some element of originality, some arrangement or selectivity of coordination that is involved. So if you start off with someone else's coordination or selection, are in trouble.

GA: So, the moral is do not be a sleazy guy, I guess.

KH: On the other hand, if you were to use it as you started out--to build a mailing list for yourself--that is, to my taste, the purpose of such a directory.

Q: I have not sold any of the information. . .

EV: Although there are some problems with directories that have been published by other operations. The American Medical Association started distributing last year's directory to libraries, with a license in the directory, which would prevent people from doing what you did. They were concerned with people circumventing the proper procedure, and going to AMA to get this list. This caused a great deal of uproar in libraries because it really did restrict access to this directory, and caused libraries to split in two different ways.

BK: Did it require libraries to get an agreement from any patron that was using it?

EV: As I remember it, the license said you could not let people photocopy it. You could have them look at it. You could not circulate it. You could not send it out on inter-library loan. It really was an object of adoration in the library. I can see an alter and candles in front of it. Half of the library community responded to this license by literally sending it back to AMA, and saying, take your license, and . . . And the other half said, sure, we can understand your point. So, the library community itself has problems dealing with this, and I don't remember how they resolved it.

GA: I think we need to cut things off. I would like to thank our speakers again. This is the last Communications Forum for the year. There will be another listing out in September, so I invite people to take a look at that when it appears. Thank you very much.

PROTECTING INTELLECTUAL PROPERTY IN

THE ELECTRONIC ENVIRONMENT

MIT COMMUNICATIONS FORUM
APRIL 29, 1993

Karen Hunter
Vice President and Assistant to the Chairman
Elsevier Science Publishers B.V.

"How can *intellectual property* be *protected*? The question contains the seeds of its own confusion: it's the wrong verb with the wrong noun."

"I'm a guy...

just a sleazy guy."

"Computer screens glow late into the night as information vampires...raid the electronic library to gain needed sustenance to produce derivative works."

Bruce Flanders
"Barbarians at the Gate"
American Libraries
July/August 1991

"[I]t is unclear whether the fears that people seem to harbor about the deceptive and mutable nature of the electronic environment are justified by real occurrences of problems."

Clifford Lynch
"The Accessibility and Integrity of Networked Information Collections"
Draft document, March 15, 1993

PROPRIETARY INTEREST SCENARIO:

Large university library connected to the Internet subscribes to:

- electronic database accessible through gateway on library system

- electronic journal to be distributed to individual subscribers by e-mail

"Rights and Responsibilities of Participants in Networked Communities"   National Academy of Sciences, Feb. 19, 1993

"Our goal is for every individual in his or her home or office to be able to obtain access to any library in the nation, to utilize an electronic index, retrieve a particular document and print that out on his or her laser printer all within a matter of minutes."

Rep. Rick Boucher
Chairman, Subcommittee on Science
Introductory remarks on the High Performance Computing and
High Speed Networking Applications Act of 1993
April 21, 1993

copyright owner's rights

| repro-duction | adapt-ation | distri-bution | public perform-ance | public display |

user's rights

print	*© reproduction*
electronic media	*© reproduction, public performance*
multimedia	*© reproduction, public performance, adaptation*
	patent: manufacture, sale, use
networked multimedia	*© reproduction, public performance, adaptation, distribution, public display*
	patent: manufacture, sale, use
	contract

ing will cause the paragraph to be included with the document being prepared, create a two way linkage between the documents, and permit the document being prepared, along with the included paragraph to be edited. Editing of the paragraph will cause an operator decision to be made as to whether the other document is to be updated according to the editing.

While the invention has been particularly shown and described with reference to a preferred embodiment, it will be understood by those skilled in the art that various changes in form and detail may be made without departing from the spirit and scope of the invention.

We claim:

1. A method for merging a portion of one document into another document, said method comprising:

   (a) including a reference in said another document to said portion; and

   (b) causing said portion to be merged with said another document and displayed in merged form.

2. A method according to claim 1 including causing said portion to be merged with said another document in editable form.

3. A method according to claim 1 including linking said documents following referencing said portion.

4. A method according to claim 1 including causing said one document to be updated if said portion is edited following a merging of said portion with said another document.

5. A method according to claim 1 wherein said including a reference in said another document to said portion includes specifying said one document and said portion.

* * * * *

Whoever without authority ... uses within the United States a product which is made by a process patented within the United States shall be liable as an infringer....

-- *Process Patents Amendments Act of 1988*

author   common law copyright
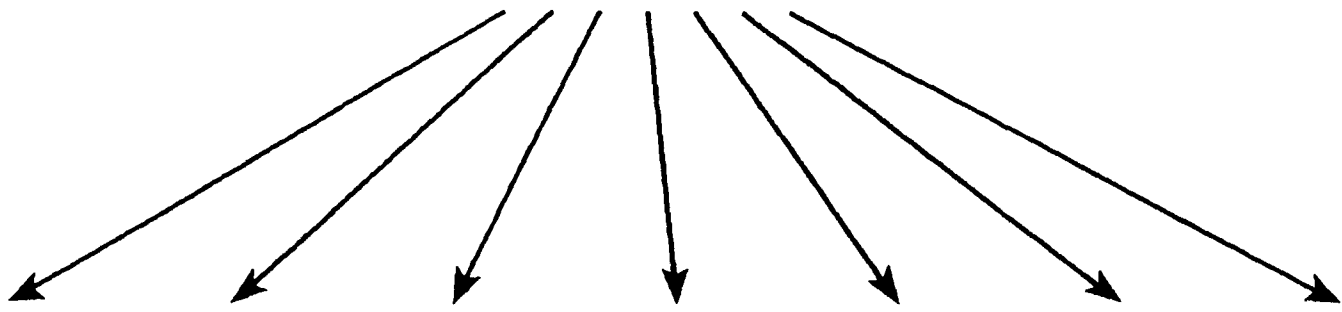
|
↓

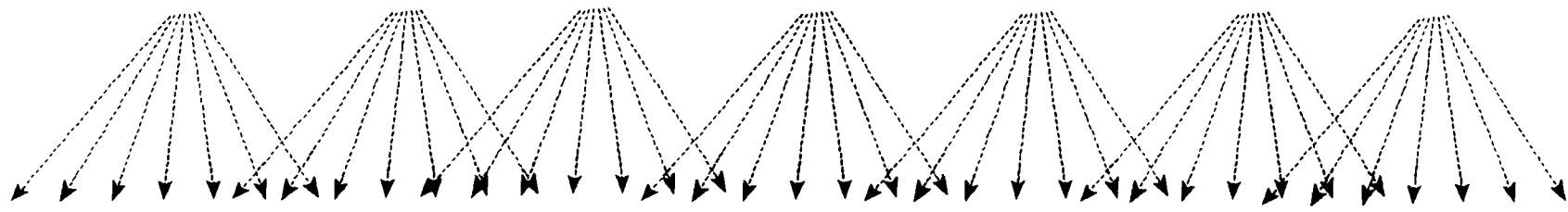*publisher*   statutory copyright

|
↓

consumer   [no constraints on use]
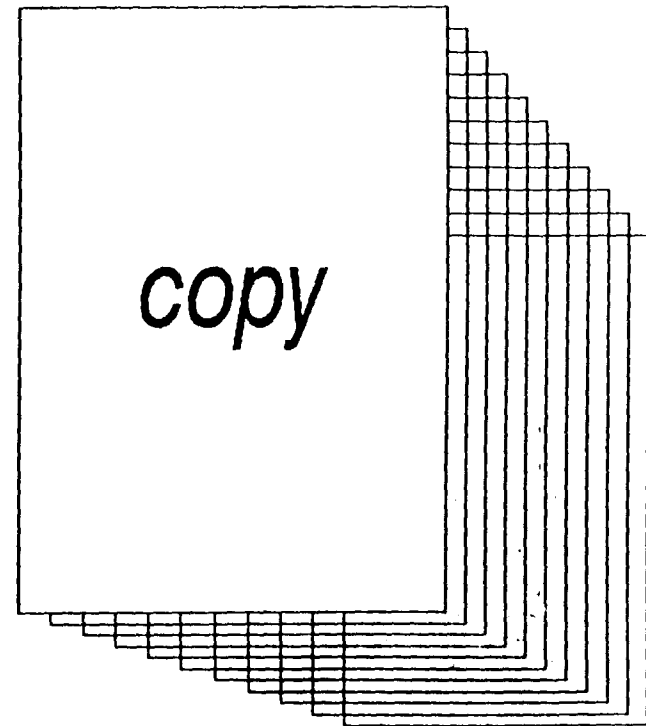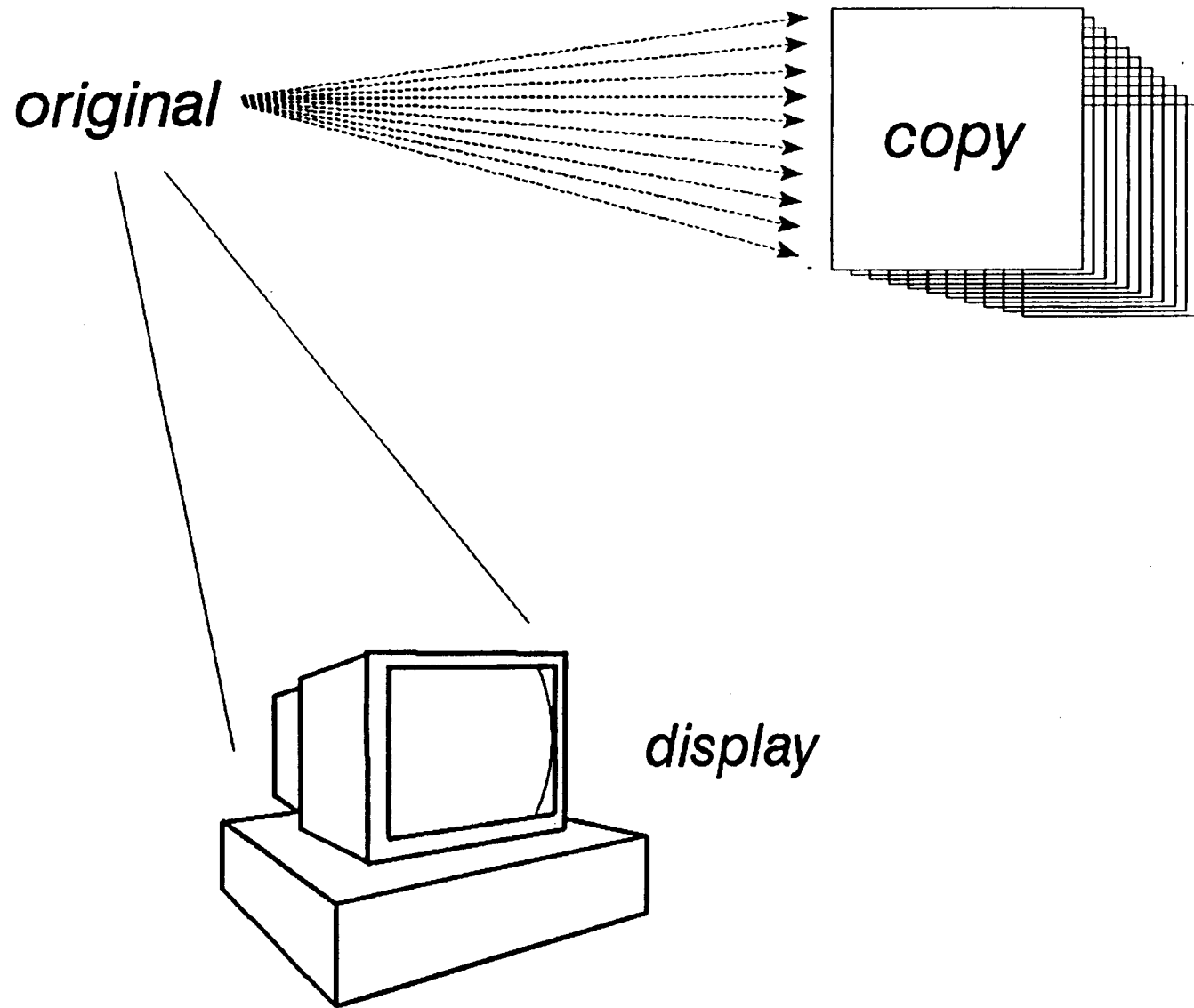
Author

↓

Publisher

Libraries/Video Stores

Consumers

expression   embodied expression

work   copy

original

copy

display

Publisher

↓

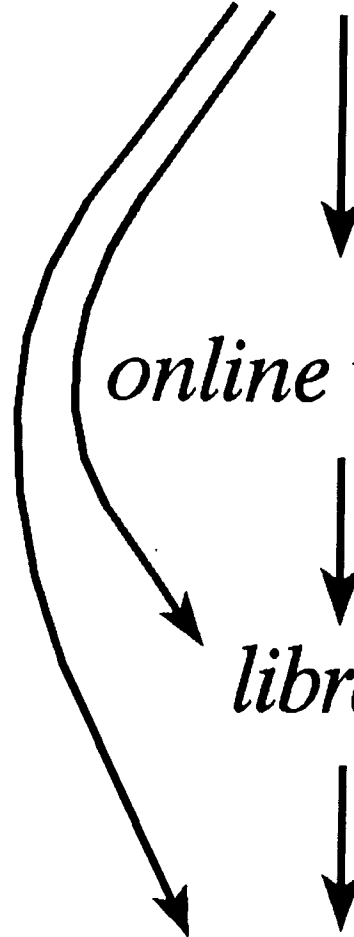Distributor

↓

Retailer

↓

Consumer
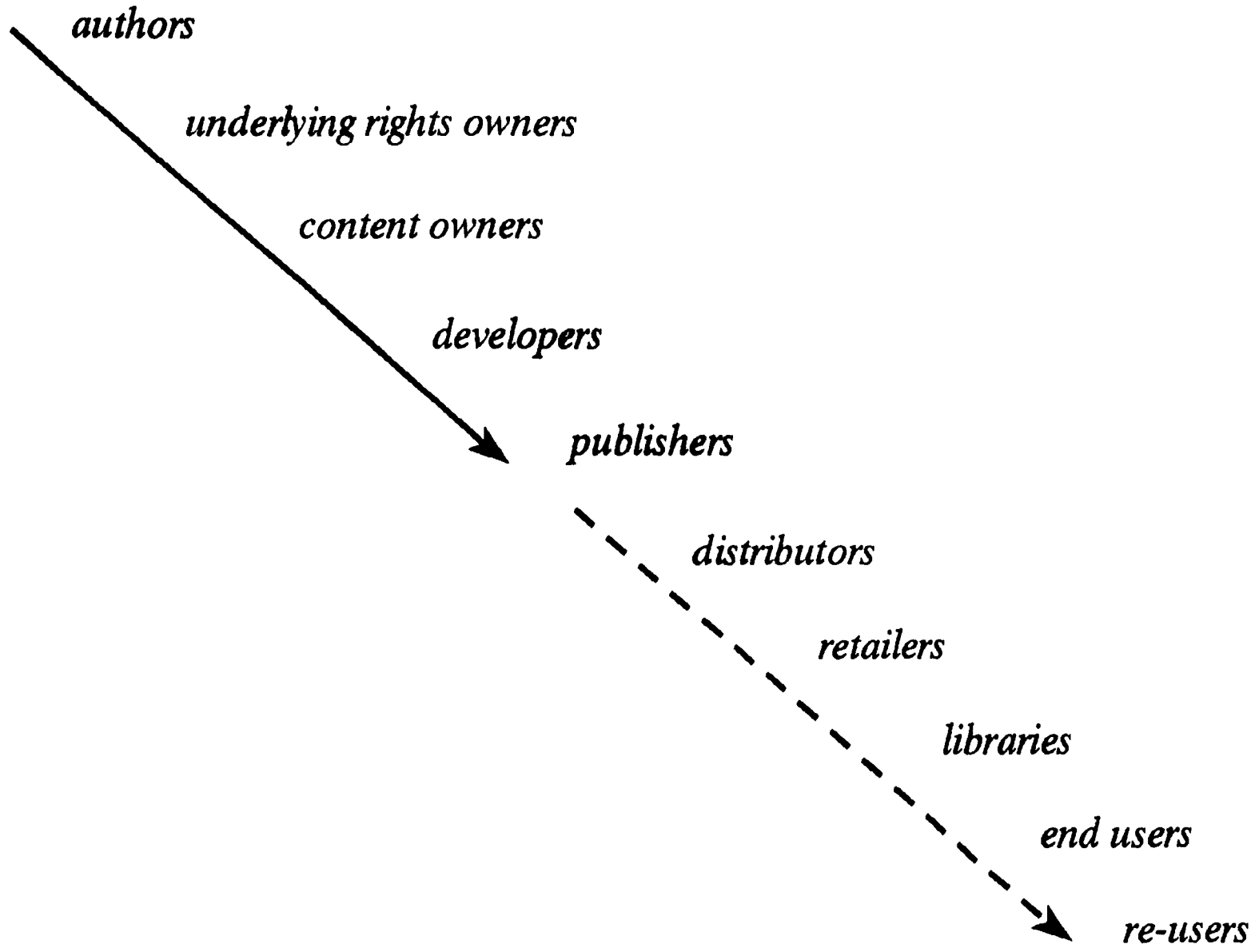
Publisher

↓

Consumer
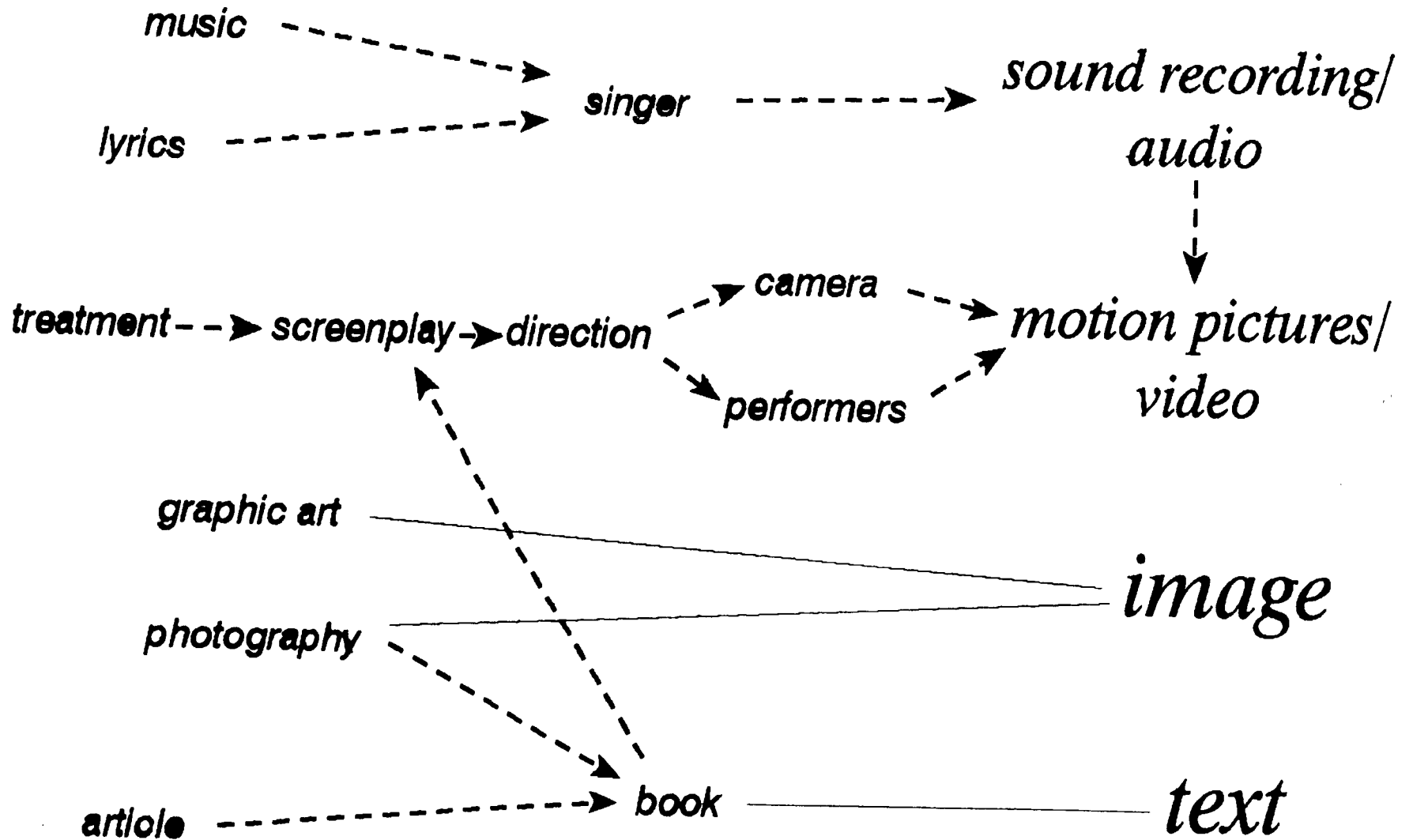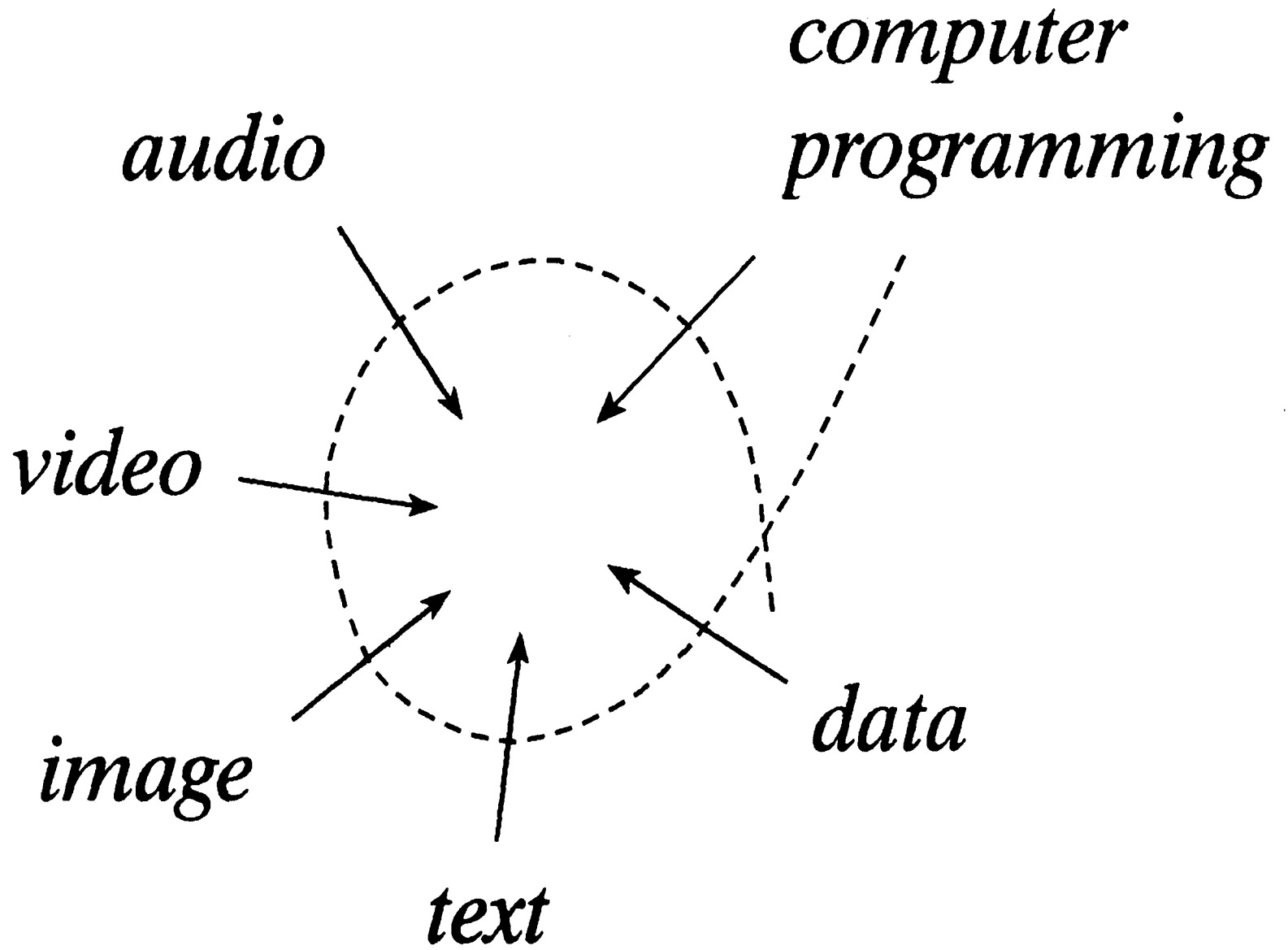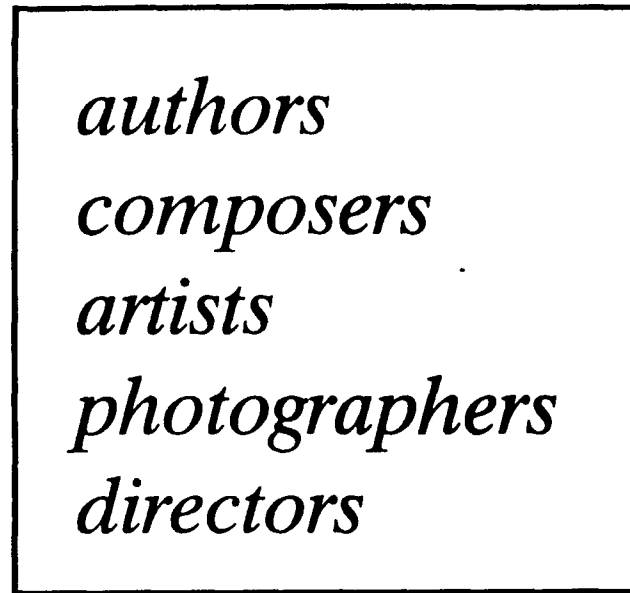
publisher

distributor

library

consumer

publisher

online vendor

library

consumer

authors

underlying rights owners

content owners

developers

publishers

distributors

retailers

libraries

end users

re-users

music - - - → singer - - - - - → **sound recording/ audio**

lyrics - - - - - - →

treatment - - ► screenplay → direction → camera - - → **motion pictures/ video**

direction → performers - - →

graphic art ——————— *image*

photography ——————

article - - - - - - - → book ——————— *text*

audio

computer
programming

video

image

text

data

work
for
hire

authors
composers
artists
photographers
directors

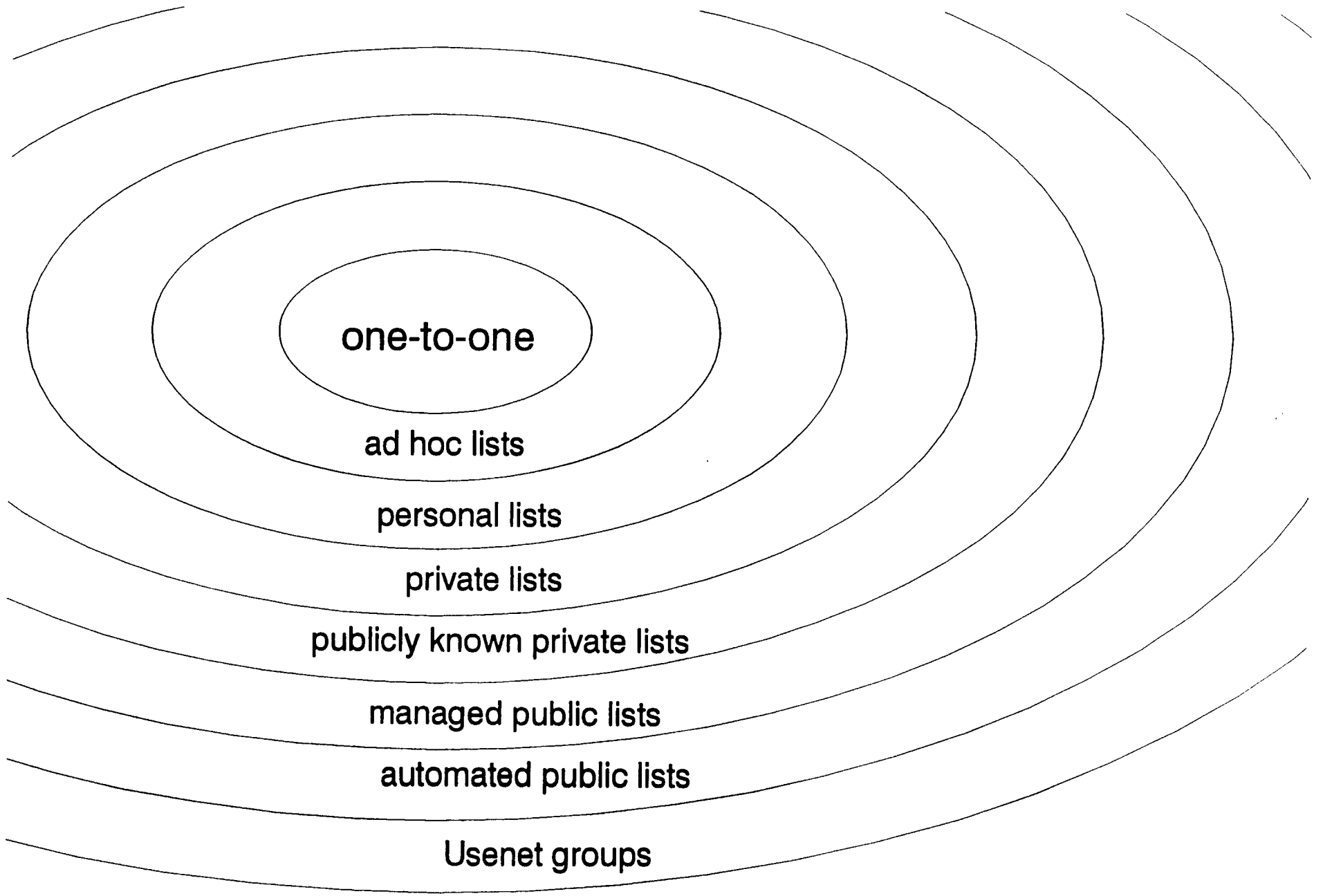*underlying*
rights

←——

studio

theater

studio retains
ownership of copy
controls use

consumer

product $\longrightarrow \longleftarrow$ service

local $\longrightarrow \longleftarrow$ remote

mass-
produced $\longrightarrow \longleftarrow$ individual-
ized

one-to-one

ad hoc lists

personal lists

private lists

publicly known private lists

managed public lists

automated public lists

Usenet groups

an enterprise is a....

professional society

corporation

department

computer conference

partnership

collaboration

task

joint venture

federation

virtual company

trade association

forum

project

agency

cooperative

measured use

time
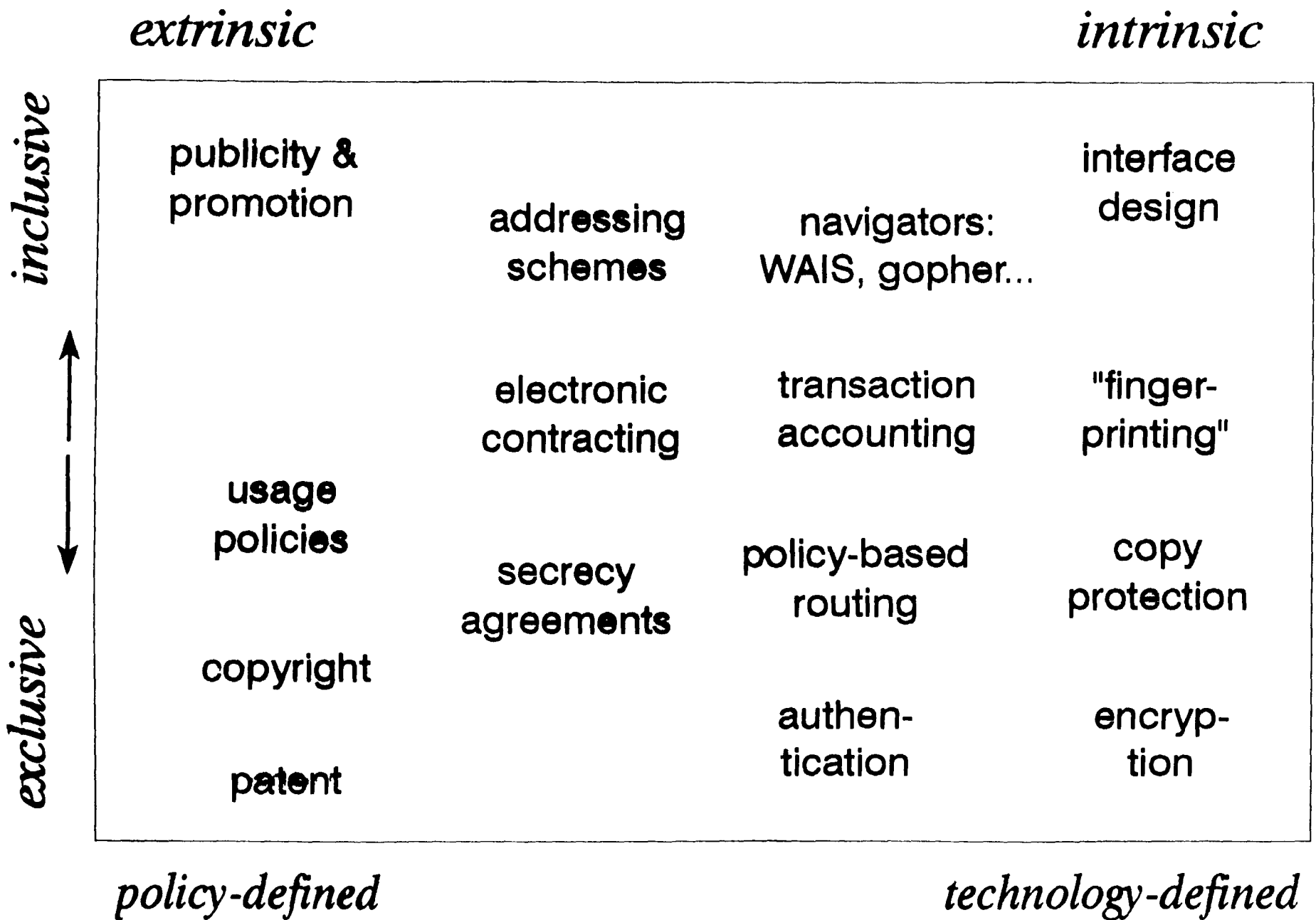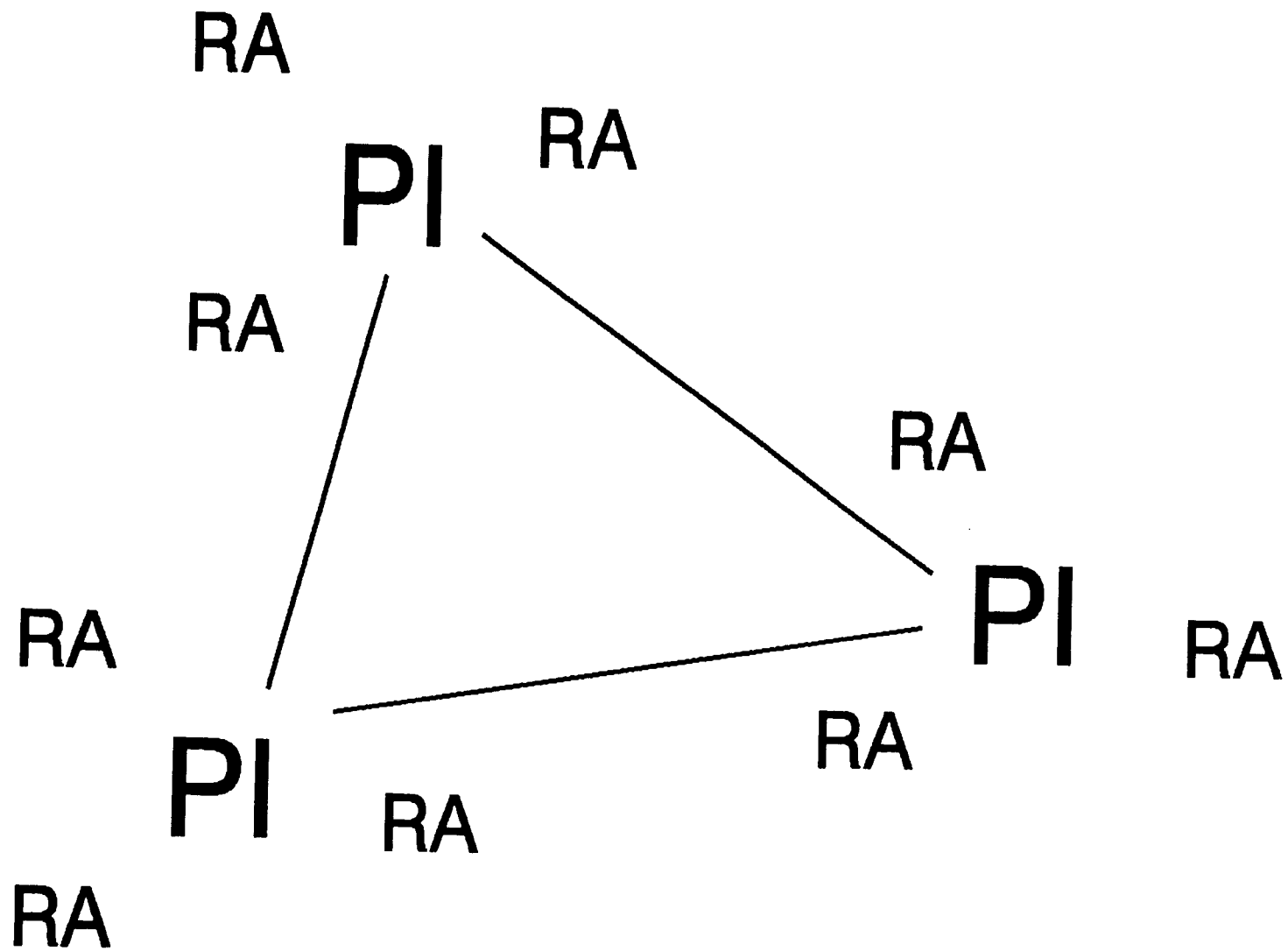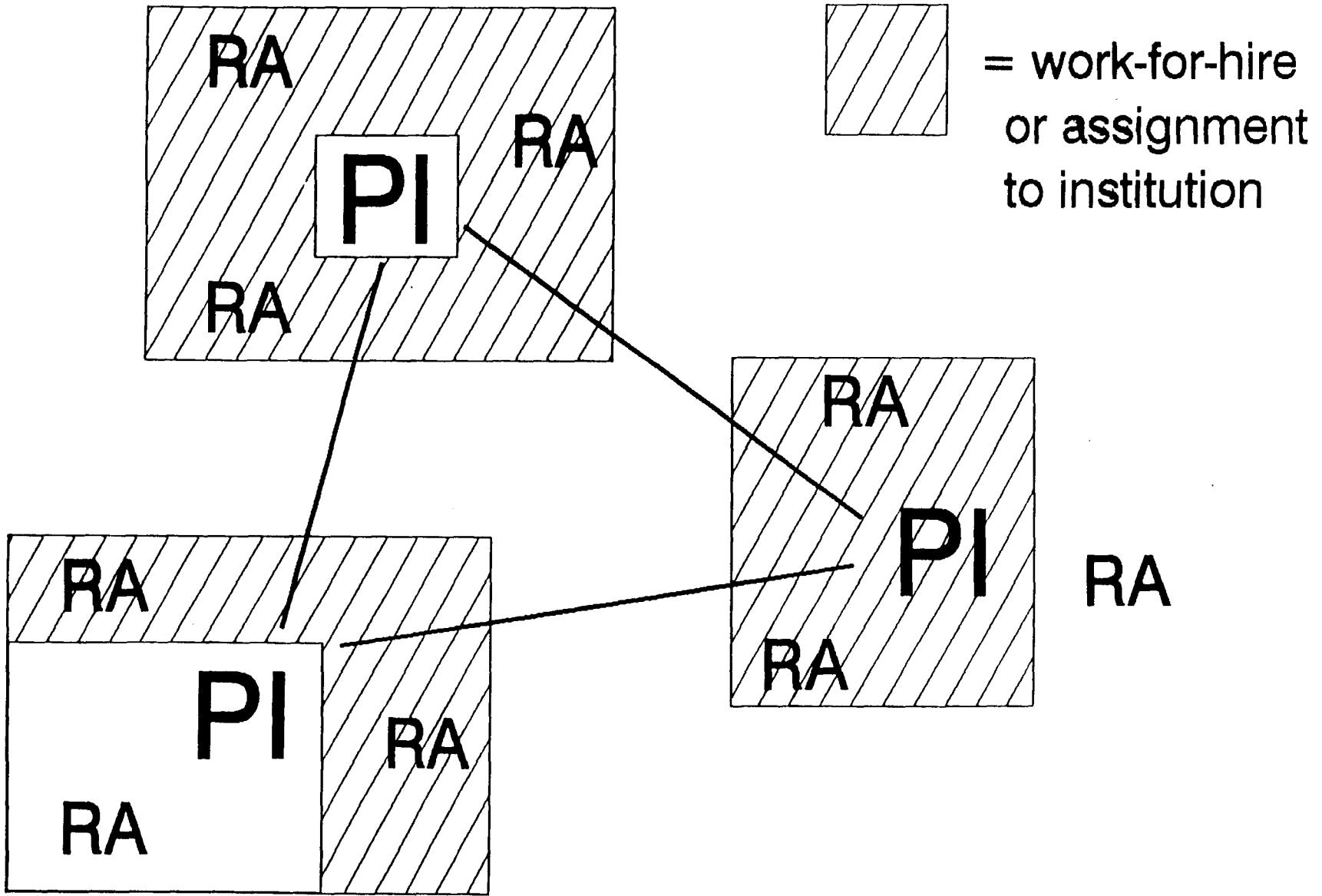
volume

item

process

licensed use

machine

personal

copy

institutional

concurrent

extrinsic   intrinsic

inclusive

publicity & promotion			interface design
	addressing schemes	navigators: WAIS, gopher...	
	electronic contracting	transaction accounting	"finger-printing"
usage policies			
	secrecy agreements	policy-based routing	copy protection
copyright			
		authen-tication	encryp-tion
patent			

exclusive

policy-defined   technology-defined

publishers

$\downarrow$

$\uparrow$

advance subscribers

general
underwriting

targeted
underwriting

in-kind
support

publishers

advance subscribers

primary market

secondary markets:

subsequent subscribers   archives   document services

authors

underlying rights owners

content owners

developers

publishers

distributors

retailers

libraries

end users

re-users