Copyright Compliance in the Electronic Age: Conceptual Issues

John R. Garrett

This article focuses on several conceptual and structural issues that are central to copyright compliance in the electronic age. It presumes the development of a national electronic network for storing, organizing, accessing, managing, and charging for information. The article first discusses the implications of constructing a comprehensive electronic "highway," or Digital Library System (DLS), which would link information to the widespread community of users. It then presents the ramifications of a highly decentralized set of subsystems serving rights holders and users, linked by protocols established by the DLS. A discussion of the implications of digital interchangeability for copyright follows. The article ends with an analysis of alternatives to existing intellectual property rights conveyance systems, and concludes that current ownership structures, and systems for conveying rights and royalties, will remain the foundation for copyright in the electronic world.

It is fascinating and humbling to sit outside on a warm spring day and watch a spider build its web. Driven implacably by millions of generations of spiders before it, their design and building programs embedded in its tiny brain, the spider patiently weaves strand by strand, each strand wedded to the strands surrounding it, each web ideally suited to trap the prey that has fed its forebears.

Unfortunately, no shared genetic message—at least, none that we can discern—compels us as we wrestle with the complex, interwoven strands that compose the electronic future of information. Instead of the orderly, measured construction that the spider builds, the development of the structures and substructures of a comprehensive national system to deliver technical and scientific information electronically resembles a random collection of baubles, thrown together in a packrat's nest in the hope that someday, somehow they might come in handy.

We share with the packrat the faith—sometimes innocent of knowledge—that it will all come together. We all speculate a good deal about how, when, and in what form it will come together and, most important, about who will be there making money when it does. Those speculations, while stimulating, sometimes resemble too closely a forest listening for a tree to fall in it. Instead of speculating, I would like to look at some of the baubles and think about

John R. Garrett is Director, Information Resources, at the Corporation for National Research Initiatives. He was formerly with the Copyright Clearance Center. Address for correspondence: Corporation for National Research Initiatives, 1895 Preston White Drive, Suite 100, Reston, VA 22091.

This article appeared in a slightly different form in the Proceedings of the Twelfth National Online Meeting—1991, and is published here with the permission of Learned Information, Inc., Medford, N.J.
what they will mean for the evolving systems for conveying information electronically, and for the implications these systems embody for rights holders, users, authorizations, royalties, and copyright. I cannot defend my choice of baubles: like the packrat, I am likely to pick up whichever ones look most enticing at the moment.

Decentralized Structures in a Centralized Environment

Dr. Robert E. Kahn of C.N.R.I. likes to draw an analogy between the emerging electronic systems for managing and conveying information (with deference to Bob, hereinafter called the Digital Library System, or DLS) and the nation’s highways. Driving north to visit my brother in Vermont a few weeks ago, it never occurred to me that the relative ease of travel was dependent on a long, complex process of generation and integration of highways from community to community, Massachusetts through New Hampshire to Vermont, and back again. Robert Frost did not know or care whether his road less traveled was under town, state, or interstate jurisdiction, and I suspect most of the rest of us don’t care either. Why should we? The system functions seamlessly (except for an occasional toll or overzealous state trooper) and transparently to the user: because it is there, and it works, it can safely be ignored.

If we are very fortunate, the comprehensive electronic infrastructure that will link sources of information and users will be as invisible as the national network of highways. This comprehensive system will, at a minimum, need to provide an integrated, comprehensive electronic substratum for information which will be stored in a plethora of individual subsystems; create and maintain the protocols and common languages that will permit and manage interactions among subsystems; and provide a framework for dialogue about the system, and for generating systemwide enhancements and improvements. Models for managing complex systems of this kind already exist in the Internet and elsewhere; they need to be carefully studied for the insights they offer.

Within this structure, a thousand flowers must flourish. Each of these flowers represents an electronic environment that includes rules for access, payment and utilization, information authorized by rights holders, and methods for authorized access by users: I refer to them here as subsystems.

I assume that information will be lodged in many different subsystems, all of them competing for information and for users, many of them providing value-added services—or price—in an attempt to differentiate themselves from the competition.

In addition to traditional, text-based information, data stored in the subsystems and accessible through the DLS will include non-text information (photographs, drawings, illustrations, works of art); streams of numeric data (satellite information, cosmological data); digitized sound and moving visual images (videos, movies, music); multidimensional representations of forms or data (e.g., holograms); and the capacity to integrate these data into new representa-