The development of electronic networks is seen by some as a way to lower the high costs associated with collecting, maintaining, and storing traditional print-based library material. In reality, at least for the near future, libraries will be faced with double costs associated with the storage of dual formats. Additional costs will also result from the need to inform and train potential users. And as users are exposed to a wider variety of relevant materials held at other libraries, interlibrary loan activity will increase with resulting increased costs associated with staff time, computer equipment and support, and network use. Finally, as a result of increased networking, a structure to coordinate resources and access will have to be developed.

ELECTRONIC NETWORK RESOURCES

The vast array of resources now made available through information and network technologies is rapidly outpacing our ability to facilitate users' optimum use of them. There are now some 200 online public access catalogs (OPACs) available on the Internet, a handful of bona

*This paper summarizes comments made by the author as part of a panel discussion titled "The Real Costs and Financial Challenges of Library Networking." Panel participants included Kenneth Gros Louis, Paul Hunt, Thomas Shaughnessy, and William Studer.
fide electronic journals, a growing amount of full-text materials, hundreds of topical bulletin boards and list servers, and literally countless other resources. How much awareness and use expertise do our academic communities have relative to these resources and accompanying access technology?

Not very much, it would seem. So, the challenge is to establish and maintain instructional programs (a collaborative effort between computing centers and libraries) to bring resource awareness to the user community and to inform specifically in access technology and methodology. For the research library, this will require a major and costly extension of involvement in the training function. During the 1990s, libraries simply must become a major source of education and training for use of electronic information networks.

At the same time, the production of print-based information will slacken only slightly, and the obligation to maintain and serve the millions of print volumes now populating our libraries will remain. So, once again, we are faced with add-on costs for additional functions, i.e., we will not be able to recover significant budget resources from the cessation or lessening of more traditional library services in order to reallocate to this greatly increased training role.

In terms of acquisition of information resources, the evolutionary development of the National Research and Education Network (NREN) and associated technologies will certainly be conducive to greatly increased electronic publishing, thereby giving libraries another cost center with which to cope, both in terms of acquisition or use costs and in terms of cataloging (and possibly storage) costs. This electronic format of information will not in any dramatic way substitute for print in the near future—all the associated costs for which will remain. There are only added costs when electronic-based information essentially supplements rather than supplants print-based information.

However, as we look to an eventual significant transition from print to electronic publishing, there is a potential cost-savings implication for libraries relative to storage and building expansion—assuming, of course, some form of reasonable central storage of electronic information of guaranteed archival quality. Most of a library’s inexorable need for physical growth is related to the storage of bulky print volumes.

Electronic full-text publications, together with original print formats converted to electronic versions, represent a relatively minuscule portion of a library’s overall information resources at the moment, but growth will likely be considerable and on an accelerating curve over the next ten years. Yet no one seems to be dealing realistically with the issue of archiving this electronic data, which will certainly incur substantial costs as volume and complexity grow.
INTERLIBRARY LOAN COSTS

Access to electronic information sources, both those locally available and those obtained over regional and national networks (including OPACs), has greatly increased many users' exposure to a wider variety of relevant materials, only a portion of which any given library will hold. Hence, costly interlibrary loan (ILL) traffic has increased almost exponentially. And we are only on the front edge of this demand, given the relatively few who are currently plugged into networked information sources. At Ohio State University (OSU), for instance, the number of requests to borrow materials from other libraries has risen 565 percent in five years. This rapid growth parallels a marked decline in the number of materials acquired locally. With reference to users' discovery of more and more relevant material via network access, it will also become more compelling to devise systems for direct request and receipt of the materials versus the cumbersome mediated ILL processes currently in place.

A significant network cost advantage in resource sharing derives from the capability to transmit fax over the Internet free of out-of-pocket telecommunications charges. A majority of ILL traffic consists of journal articles which can be transmitted via fax very cost-effectively with concomitant great improvement in timeliness of delivery.

As users take more and more advantage of access to network-based information resources, there will surely be more demand at local levels from "external" users who need assistance in using given databases—perhaps OPACs most of all. This will likely cause some tension in maintaining a balance of how much time and resource one devotes to helping external users while not diminishing service to the local constituency.

NETWORK CONNECTIVITY COSTS

Networking is unquestionably a force for good, but it also seems to embody the momentum of a revolutionary transformation. Speaking strictly of internal library settings, all staff want and need network connectivity—for user benefit, to be sure, but also very much for their own use of electronic mail, bulletin boards, and other resources. OSU Libraries finds itself in a few short years with 156 personal computer workstations in addition to terminals connected to our OPAC. Beyond the obvious purchase cost, this equipment requires installation, telecommunications/network connections, maintenance, repair, software upgrades, troubleshooting of all kinds, and eventual replacement. All of this means significantly increased add-on costs for
which we have not been funded, but which somehow must be accommodated. Also, when full text with graphics comes more to the fore, we will need more expensive hardware to store and display images.

On a more mundane note, the cost of computer printer paper is a major one. How many people read the bulk of electronic information online? Most people print out reams, and so do users of public terminals with printers available free of charge. Ironically, the vast quantity of printer paper being consumed in the cause of electronic information dissemination represents a large and almost entirely add-on cost.

The labyrinth of networks forming the Internet are currently usable free of charge to end-users, but as the NREN evolves and government subsidies decline, will users (and libraries) be expected to pay some of the costs? Such a new and perhaps considerable cost obligation could pose a real barrier to use. Related is the issue of inevitable access restrictions to networks and/or to given databases, which will necessitate the creation of complex systems for authentication and even billing.

CONCLUSION

The decentralized and distributed virtual library is an exciting concept, certainly made more realizable through the connectivity networking provides. But it is also a worrisome construct made even more so when coupled with glib notions of immediate impacts of electronic publishing. Without some degree of collection development planning and coordination (for which the nation as a whole is likely too large a planning arena), the efficacy of the virtual library can readily break down because fewer and fewer libraries may acquire what more and more users need. This approach to resource sharing is very tempting and captivating to some university administrators who perceive library cost savings while at the same time wondrously making even more resources available to users. This author, for one, is very intrigued and interested but also very concerned with how to superimpose structure on such a free-form system. Relative to electronic publishing, there is a tendency on the part of some unschooled administrators to believe that the electronic information era has arrived and signals significant cost savings for libraries when, in fact, living with the double costs of dual formats will be the order of the day for some time to come.