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CATV and Libraries: Issues and Challenges

The rise of cable television is only one of the technical manifestations of several major social changes taking place that involve the manner, the content, and the intensity of communication among people. The true challenges of cable television to librarianship can be discerned only through an understanding of these changes. It is in this context that this is written.

The first major change to be noted is the advent of the information age which is rapidly supplanting the industrial age. The information age has been spawned by society's increasing reliance on an almost overwhelming growth in the amount of data and information being generated, for varied, and often overlapping, missions. There is so much data and information that even those who generate it have trouble coping with its meaning.¹ Politics, actions, decisions of all kinds in all sectors of society are more and more sustained by information technology. In the words of a recent Conference Board report:

Advances in the storage, retrieval, processing and distribution of information make up the central technological achievements of the twentieth century's third quarter. Within two decades these new information technologies have become an indispensable part of the web that hold society together. If it had to get along without these technologies, the business life of the United States would be imperiled to the point of disaster. The new ways of handling information have brought about fundamental changes in governmental and political processes. They have altered the psychological and cultural attitudes of hundreds of millions who have only the haziest notions of how the new technology works.²

This growth is matched by the development of sophisticated electronic means for handling data and messages. Satellite communications, special purpose common carriers for digital signals, expanded modes of recording (sound, sight, and binary impulses), increasing complex computers with vastly larger memories, laser transmission and a wide variety of terminal devices are converging along with cable communications to create a virtual revolution in communication.

The second phenomenon confronting us is the change being wrought on society which introduces impermanence as its chief characteristic. Society increasingly values diversity and individual freedom to learn, to choose, and to decide. We must mobilize our information resources to serve these elements in order to cope with the shock to society that will occur as it is impacted by the instabilities of impermanence and rapid change. This is the theme of Toffler's essay on future shock.³

In education, a constantly changing society is restoring the credibility of life-long learning. Libraries are accustomed to this concept, for the notion of serving as the people's university was one of the root elements that fostered the public library movement in the nineteenth century. But the call is now for the entire community to become the people's university, and libraries will have to share the stage with other elements of society as learning resources.⁴ Life-long learning will be sustained by information gathered in many places for many missions, and made accessible through various means of communication, thus reinforcing the hold of information technology on the viability of society.

Although the focus of this institute was on only one element of new information technology, we must broaden our view at this point. It is impossible to achieve success in realizing the full potential of cable communication without understanding and accounting for the more universal influences that are brought to bear on us by these general social phenomena.

THE CHALLENGES

Self-Renewal

Librarianship's first challenge in grasping opportunities presented by the telecommunications revolution is one of self-renewal. Society's needs and information technology are quickly exceeding traditional librarianship's ability to serve as an agency for providing access to information. The library's mission must be redefined in terms relevant to today's world, and librarianship must begin to operate with a wholly new fundamental philosophy. Libraries stand very much in the same relative position to publishers and readers as they have for over a century, but the strong role of the printed page as a purveyor of information has been diluted by other media. The role of libraries has thus also been diluted.

The modern era of the library movement in the United States was fostered in the nineteenth century by a complex of causal factors including the ability of municipalities to support public information facilities economically; the rise of a feeling for historical research and the urge for conservation of documentary resources among amateur scholars; local pride; the social importance of universal public education; the self-education and Lyceum movement; and the demand for vocational training to support the new American businesses and industries. An institution was required because the principal beneficiaries—the professional classes, the tradesmen and the mechanics—could not each afford to own and keep all of the books they needed for their studies.⁵ The chief proponents of an institutional solution argued that society should tend to these needs through a public agency, hence the mission of the modern public library.

The same societal pressures for a public agency to preserve and provide access to media and the information it contains exist today. However, the social environment and the number of kinds of information resources, the modes of their access and delivery, and the urgency of need have changed drastically. Libraries can little hope to serve the social needs of the future unless they can establish new roots in an ethic that accepts the variety of media that now serve where books and newspapers once alone sufficed, that raises to priority status those services that deliver information to the home and the office, and that serves to integrate library services with those of other information agencies into unified networks for citizen information.

The issue here is simply: *Should* the library be concerned with the kinds of activities that electronics media allow? Librarianship has been uncomfortable in any role involving nonprint media. To work in the electronic environment vastly exacerbates this discomfort for, of all things, the electronic technology does little to facilitate delivery of information, messages, and signals directly from the printed page. Furthermore, we must recognize one of the chief influences of electronic communication, namely that of reorganizing space so that geographic contiguity, either of people to each other, or among people and information resources, is no longer important for communication purposes.⁶ This is a condition alien to librarianship, for in spite of our use of telephones and teletype to answer reference questions and to locate materials, our extension efforts have been chiefly limited to building branch real estate or driving mobile libraries to locations contiguous to critical masses of people. We still rely principally on people coming to us in order to contact media.

Libraries have certain general, key characteristics that make them apt agencies in supporting people's search for use of information—characteristics such as a tradition of serving all comers without intellectual discrimination and with disinterest in point of view, and accessibility at times when other parts of the institutional information structure are closed. Unfortunately, our failure to deal with the change in the communications environment engendered by the

advent of nonprint media and our indifference to a potential role as entrepreneurs in putting information and media into people's homes and on their desks tend to reduce the visibility of librarians as agents capable of capitalizing on new information technology.

There was no library profession in the nineteenth century to assay and delineate society's needs and to mold institutions and services to offer information to the community. The prime movers of the library movement then were the rich and the scholarly from other segments of society. People such as Horace Mann, Henry Barnard, George Ticknor, John Quincy Adams and John Burt Wight carried the burden of public debate and action to create the modern public library. Now there is a professional cadre with a firm lordship shielding the fundamentals of librarianship from modification by its beneficiaries. If there is to be a change in the basic mission and goals of librarianship, and a new library economy to serve them, we will have to nurture the change ourselves.

Reconstitution

Most of the material in libraries today does not interface readily with electronic communication facilities. To read books via television is slow, cumbersome, and wasteful of both manpower and channel capacity. All of the television in place now for home delivery of signals is designed for moving images. Nor are today's services in libraries designed for home delivery. Thus, for full utility, libraries face the challenge of reconstitution—the changing of the format in which information is stored in libraries, and the services to be offered from the store.

Electronic technology has already begun to force a change on us. Many traditional indexes, formerly in card and book form, are now available on magnetic tape, or in some other form of computer memory, and are accessible through interactive terminals and telecommunications systems. The Library of Congress provides cataloging information on computer tapes as well as in card and book form. Many libraries contain motion picture film versions of stories from books—a conversion of data bases that probably has never been recognized in the context used here—a reconstitution of medium for a different mode of delivery.

What kind of programming can and should be done with cable television? Most of the exciting promise of interactive cable communication is in the distant future. Someday libraries may be well-stocked with machine-readable text, perhaps in microformat, and home terminals will be widely available for the capture of text images. Project Intrex at M.I.T. has demonstrated the technology for automatically retrieving and reading microfiche on a cathode ray screen, but the equipment is still prototype, and the distance of transmission is quite short. The creation of a textual medium matched to an electronic image transmission service will require a whole new "publishing" industry, including a new economic struc-

ture to compensate the various parts of the diffusion system. This would have to be sustained by a new legal concept: an electronic copyright.

If computer-aided instruction is to take place via home video, is the library likely to be involved, or will the home base be the academic agency with its staff for the preparation of frames for programmed learning devices and of computer software? If the library is to be involved, will it have to have its own computers, or will the provision of computer services be part of the package offered by the distributor of the instructional materials?

The library seems aptly suited, according to present tradition, to the creation of archives of videotapes, and the provision of access to them. Hopefully, the library will have facilities to put tape information directly into the cable channels for distribution, and will not be relegated merely to the circulation of tapes to be played on home or local studio facilities. But, if the library is to be a node in the distribution system, will it offer material on demand, or set up an announced schedule of showings, thereby becoming another station on the dial?

Should the library be responsible for producing the tapes of local events, for more timely distribution to the potential audience? Or should this be the responsibility of the agencies whose events are being taped—or even a public “third party” agency with the talent and the equipment to make quality programs? Should this be a public function at all, competing with commercial interests for the same events? Should various public agencies bank the tapes they make themselves in the pursuit of their missions, to play into a public channel from their own offices? If so, we are faced with a difficult networking problem, either to schedule events on the channel, or to provide switching at local levels for access to the public records according to local needs. Is there a role here for the library, perhaps as the search strategy or the switching agency, or perhaps as the neighborhood substation for redistribution of material available from other agencies?

Above all, who is going to pay for this innovative programming? Here we note a serious discrepancy between need and means. Access to the kind of information, and in the manner described herein, requires sizable sums of money for planning, implementation and continuation of service. Under normal circumstances it is planned that cable subscribers will support programming in their monthly fees. But the people who might be the object of much of the information disseminated via cable by public agencies are the people least able to pay for the luxury of home delivery of the services on television. This is one of the socially troublesome issues raised by many current proposals for new cable services.⁷

Administrative Reconstruction

Pressures for interactions among agencies, as well as between agencies and their publics, will increase in the information age. The speed with which people

can access information through telecommunications and can switch from source to source will require that careful attention be paid to the reduction of organizational constraints that hinder the mobilization of any and all agencies to work on problems of mutual concern. What is required is an organizational philosophy that will encourage quick interaction, shared governance of data and information resources, and selfless acceptance of participatory interagency management. Thus, administrative reconstruction is another of our major challenges.

The information needs of society are growing and becoming more complex, and the number of agencies and the volume of data they hold are growing to match. But the current ground rules call for each agency to control the gathering, the handling and the disseminating of its own data. Indeed, it is packaged and programmed for access to meet specific missions, often disregarding the potential value of information that might be derived from the data for other agencies' missions. Information storage and retrieval techniques coupled with electronic communications networking could end this waste.

Urban communications planners are looking ahead to the time when cities will be wired for many kinds of communication, and cables will be used for a variety of kinds of communication, not just visual. The National Academy of Engineering and the MITRE Corporation have proposed several alternative grids and channel allocations for various civic, educational, public administration and other purposes.⁸

This new style of organizational relationship will be enhanced by electronics technology. Special circuits for telecommunications can be easily established by wiring and electronic switching that will in essence create "virtual" rather than real organizations. The consumer may not even be aware that information and images are coming from different physical and administrative jurisdictions. These virtual agencies can be disestablished merely by cancelling the circuit. They can exist for as long as there is a need. Any agency can serve as a node in many networks simultaneously. Telecommunications will thus facilitate the advent of the adhocracy in managing problems that Toffler notes will be a palliative to some of the effects of future shock.

The question is: Who will direct all of this effort? Who will survey this domain of data, and structure the electronic network to diffuse it? Which will be the lead agency? Where will the switching center be located? Who will map the search strategy for the unsophisticated user? Who will adjudicate jurisdictional disputes among agencies for positions of power in the networks? How will we guarantee that the information in the data bases, if they are available as public utilities, will not be used out of context for purposes contrary to the public good? How will city hall feel, for example, about having tapes of all council sessions available on call via CATV whereby they can be taped and re-taped and edited in ways that might present the administration in an adverse light? How does one safeguard against such actions short of censorship? Who

will judge the quality of data, and the aptness of them in response to various queries?

One student has proposed that it is time for a city hall communicator with background in public administration, mass communications, interpersonal communications, political science and urban planning.⁹ Although this person is viewed as a public relations officer, the difference between public and technical information will diminish for handling and packaging purposes in the information age. An unscrupulous person occupying such a powerful position could easily become a commissar of information rather than a facilitator of access for the public good.

Politicization

Finally, if librarianship is to accommodate to the information age, it faces the challenge of politicization. This term is used loosely here to refer to the process of attending to issues of law, regulation, governmental policy and politics. In the realm of telecommunications, this may be referred to as electropolitics. This is the premier challenge we face, and I list it last to feature it.

The development of all segments of the electronic communication industry, its operation, and access to its facilities are strictly bounded by laws and regulations. These in turn are molded over the long run by national telecommunications policy which is now being generated by the White House Office of Telecommunications Policy. Finally, the whole enterprise is tested against the Constitution of the United States, and particularly the First Amendment thereto.¹⁰

The electropolitical process is constantly ongoing. At national levels it takes place in the White House, the Congress, the Federal Communications Commission, and the Supreme Court. At local levels it occurs in legislatures and public utility commissions, and wherever ordinances and franchises for access to public space are formed. Money and power to control information diffusion are at stake and the proponents of various causes are strong, vocal and active. Librarians must be able to recognize and work in the corridors of power in the electropolitical process. They must negotiate vigorously for the conditions that promote communications industries that not only do not hinder our use of telecommunications facilities, but actually advocate it. ★

This does not mean that those who carry the burden of this electropolitical process must become professionals in law, politics, economics and utility regulation. But they must be well grounded in the processes of industrial financing and politics and the relationship of legal processes to the operation of communication businesses. Success will come through a sensitivity to all of the influences brought to bear on decision-making at all levels in this vital industry. We must not only know who we are, but also who others in the electropolitical

process *think* we are. We appear to the communications industry as an element of cost rather than income. We also speak from a position of strength as surrogates for a demanding society, although this will not stop industry from trying to operate with such finesse that its hardware will be in place and the rules established for its operation before we have had a chance to influence these matters.

The power of policy and regulation is formidable, if not absolute. CATV is a generation old, but was foreclosed from expansion until recent months by FCC regulations that made capital investments in the industry unattractive. Now CATV suffers a "broadcast hangover" in FCC regulatory practice. This, and regulations covering pricing policies for communications services that encourage long, slow depreciation write-offs for investments, prevent the rapid upgrading of old hardware, and the introduction of new technology as soon as might otherwise be feasible. Once set at any level, regulations are hard to change, and once installed, communications companies are hard to disenfranchise. Thus, it is urgent that librarianship be represented in the electropolitical process regarding any new telecommunications capabilities while the industry is forming.

The range of questions to be addressed in establishing regulation and issuing franchises is broad, and each is fraught with political and social implications that raise enormous hostilities among groups.¹¹ Answers to these questions are never straightforward or easily derivable from objective analysis. For every proposal there are advantages and disadvantages, and almost irresistible trade-offs. It is difficult to distinguish between those questions that are national and those that are of local relevance, and indeed, one of the most crucial questions is: What part of the operation of cable television should be regulated at which level of government? Local regulation seems more appropriate to insure communication facilities and programs tailored for neighborhood consumption, but the potential for incompatibility among systems to the detriment of networking, and the subversion of national goals and technological potential increases thereby.

Beyond that, questions abound, and they are right now under consideration in many places. Who should own cable—the public, or commercial interests? Should municipalities and states be allowed to tax cable system revenues? How many channels should be installed under the terms of local ordinances? To whom should the channels be allocated? Should cable systems mix both regular programming and common-carrier services? Should the regulations require programming by cable owners and allow public access, or allow programming and require public access?

One must focus here on one of the most crucial issues in electropolitics—that of copyright. There is no need to delineate the issues under deliberation regarding library copying in attempts to revise the copyright law. The problems of authors' sole control over the use of their works will without doubt be

further eroded as the public gains more means for communication. Williams and Wilkins is no less concerned about telecommunications than about copying machines, for a "soft" image of a page of one of their journals delivered on a television screen in a doctor's office appears to be no less hazardous to a publisher's economic viability than a "hard" copy delivered by mail.

The full potential impact of the new communications technology on the restructuring of the knowledge diffusion industry is unknown and unpredictable. But the fact that there will be a restructuring of the fabric of information distributions is certain. Ways will have to be found to attract the capital to build the industry, and to encourage creative people to enter their works. The best minds cannot forecast the future here, so Congress proposes to deal with the issues as they arise by creating in the copyright law provisions for a commission on technology for this purpose.

Society is rapidly moving from the industrial to the information age. One of the phenomena that characterize the new information age is the new electronics communication technology that is blossoming around us. It offers great opportunities since it frees people from the constraints of time, distance, and channel scarcity for communications purposes. Agencies that consider themselves primary in one or another aspect of information handling are faced with at least four major challenges if they wish to seize the opportunities that are becoming available to serve society.

These challenges, as stated above, are those of:

1. Self-renewal—the creation of new philosophies and principles for the definition of their roles in society;
2. Reconstitution—the creation of new media and services with which to serve society in their new roles;
3. Reconstruction—the adoption of new modes of interaction with each other, and shared governance of the information utilities available to society;
4. Politicization—the assumption of more vigorous, commanding presence in the councils where national policy, laws, regulations and their interpretation are being formed, both for a better guarantee that they will survive as agencies, and as ombudsmen for the public in the sector where they have been assigned responsibility by society for service.

These challenges are universal in dealing with all elements of communications technology: we face them immediately in the advent of cable television in libraries.

Let me close with this admonition from the Conference Board:

The next twenty years will be the critical period when the quality of our response to information technology will be disclosed. So far, none of the societies that have embraced the new information technologies seem to have a satisfactory grip on their implications or any clear sense of how they should or should not be used.

To date, this failure is neither surprising nor disgraceful. The range of possible consequences presented by the new information technologies is so varied and subtle that no society could be expected to have ready-made solutions to the main problems presented. But as the employment of these technologies continues to spread rapidly, it will be disgraceful if policy questions generated by them are not soon identified, discussed, and dealt with.¹²

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