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Beyond the Media: A New Strategy for Distributing Scientific and Technical Information

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BEYOND THE MEDIA: A NEW STRATEGY FOR DISTRIBUTING SCIENTIFIC AND TECHNICAL INFORMATION

B. L. Preecs

ABSTRACT

Communications media -- newspapers, television, magazines, etc. -- may be the most powerful single influence on modern life. Certainly they are the most important source of information citizens use to form opinions about such complex scientific questions as global warming or nuclear waste cleanup. But commercial news media have built-in limitations on their effectiveness as information sources. Reliance on advertising for revenue means the media are limited in the volume of material they can cover. In addition, the need to attract the largest possible, or the most select, audience for advertisers limits the complexity of information that the media can present. Finally, existing media organizations offer few, if any, ways for users to retrieve past information. These limitations deprive citizens of needed information, increase pressure on political leaders, and create the gridlock over scientific and public policy questions caused by the "Not in My Backyard" syndrome. Fortunately, modern communications technology is changing in ways that allow public policy makers to address these shortcomings. Companies now barred from the information business are seeking to enter, existing media companies are looking for new sources of revenue, and new information products are seeking markets. Several changes to existing media and communications policy will be suggested and general principles for building a better overall communications system will be discussed.

While the volume of information produced in the modern world grows exponentially, the primary methods of storing and distributing that information remains the commercial news media--newspapers, magazines, broadcast and cable television. These organizations are locked into economic patterns that were formed in the early industrial revolution and have not significantly changed since the 1920s.

LIMITATIONS OF THE EXISTING MEDIA SYSTEM

The current media system of communications suffers from a major shortcoming; it is supported primarily by advertising revenue, which leads to several problems.

The most obvious problem is the upper limit on the volume of information that can be presented by advertiser-supported media. The space for news, the number of pages of a daily newspaper, isn't determined by the volume of news, but by the volume of advertising available in a community. Advertising support ebbs and flows with the business cycle and the seasonal needs of major advertisers. It's difficult to present scientific issues in the pages of popular newspapers because of these space limitations.

For example, in July 1990, the Hanford Dose Reconstruction Project released a 104-page draft report regarding the amount of radioactivity that residents of the region around the Hanford nuclear facility received during the plant's 35-year operating life. The report contained contributions from a staff of 75 and a scientific panel of 18. The only newspaper with state-wide distribution in Washington State gave the report a front-page headline and a total of

25 column inches--approximately 1,000 words. The Dose Reconstruction Project report was widely distributed within Washington State, and anyone who wanted more information than was provided by that daily newspaper could eventually get access to the original report, if they were persistent.

While the interest level of most of the newspaper's readers would certainly justify--at least in economic terms--the failure of the newspaper to provide a more detailed description of the report, the most significant point is that the entire commercial media system offered its customers little alternative between relying on its abbreviated summaries and seeking out the entire report, either by going to a public library, or getting a copy of the report directly from the project.

The visual emphasis of television news means that medium is even less inclined to cover evolving scientific questions in depth because the lack of 'good video' prevents such questions from even being considered.

While the newspaper in this case provided at least a brief summary of the scientific report, this was not because of the report's scientific value or even its possible impact on the community. The report was covered solely because of its newsworthiness--a highly subjective term that defies measurement. Evaluating the newsworthiness of an event or report includes measuring the potential effect on an audience's lives, but newsworthiness also includes such factors as conflict, drama, novelty, or human interest. Newspapers and television news producers select their daily agendas with a specific criterion in mind--attracting the largest possible audience for their

advertisers. This process emphasizes conflict, drama, and novelty at the expense of long-term significance and evolutionary changes.

However, even these shortcomings could be overcome, if it were not for the final problem: lack of retrieval. News reporters working for newspapers or larger broadcast news organizations have an advantage over ordinary citizens seeking information about a public or scientific issue. Reporters preparing a news story are encouraged to consult their organization's 'morgue.' Morgues are files of clippings, sorted by topic, which are maintained by professional librarians. These files are seldom available to the general public, except in the form of expensive electronic databases, which are compiled by commercial enterprises and priced beyond the reach of most individuals. Reporters can easily obtain a chronological survey of the topics they're interested in, while their readers and viewers are limited to a repeated series of summaries.

NOT IN MY BACKYARD

The result is that news of scientific or technical developments cannot be obtained coherently or in a way that facilitates good public policy making. News about a problem--nuclear waste or global warming--usually falls below the media system's radar, i.e., fails the test of news value, until a breakthrough or other dramatic development focuses attention on the issue.

The typical process for choosing the location of a controversial public facility such as a hazardous waste site or a maximum-security prison starts when a government agency identifies a problem. A task force launches an investigation, announcements are posted, meetings are held, hearings

conducted, all in relative obscurity because these steps of the process usually aren't considered newsworthy. These initial steps aren't sufficiently dramatic or don't have enough impact to get to the top of the lists of stories that can fit in the limited space of a newspaper or time given to television news.

Finally, after months of work a choice of three or four final locations is announced. Now the project passes the newsworthiness test. A reporter goes out to interview the neighbors about their reaction to having such a proposed facility located near their homes. Not surprisingly, most residents don't have any idea the project is under consideration. A few enterprising individuals then take a look at the public records available at the city hall or county courthouse. Relying on last-minute information or the advice of their neighbors, people start organizing to oppose the project. Now their activities are newsworthy, almost by definition. The work of a scientific team examining a complex question may not be visible or accessible, but people carrying picket signs or passing out angry pamphlets are frequently both good copy and good video.

Thus the "Not in My Backyard" syndrome. People who have no way of looking at a larger question, no way of participating in early discussions about a problem, have predictably limited interest in such issues. They don't care where you site the waste dump or the prison as long as it's someplace else. If the people who might be affected by such a facility had a convenient way of learning about the entire siting process, if they had some convenient way of expressing their opinions about these issues throughout the process, there

would be at least some chance of a dialogue occurring outside the domain of nine-second sound bites and two-sentence surveys of opinion.

POSSIBLE ALTERNATIVES

The power of modern information processing technology--computers, databases, fiber-optic data links, interactive multimedia learning tools--to distribute and store information in new ways has been widely documented recently. (See the bibliography.) What has not been widely discussed are the public policy issues that will need to be decided before society can expect to reap any benefits from this powerful technology.

Such questions include: Will information services prices be determined by market forces or utility regulators? How will educators and parents take advantage of new technology to increase children's information processing skills? How will public libraries or nonprofit organizations keep up with rapidly changing, usually expensive technology? Will rural areas be left behind if the new information technology is delivered by expensive fiber-optic cable? Will low-income people have access to expensive information technology? Should telephone companies be permitted to own information-providing services, or should they be restricted to a public utility role providing access to products owned by others? Should new alternative phone services be allowed to compete with existing local phone companies? Local residential phone service is currently subsidized by business customers. Will competition in local telephone and information services reduce costs to residential consumers? Or will local residential rates go up as local phone

companies drop the subsidies, to compete with new alternative phone services that target only high-volume business users?

These are important questions about any future system that receives insufficient attention in most analyses of the potential advantages of such systems. One source acknowledges that such questions should be resolved by elected officials after a thorough public debate.

> In the final analysis, however, the answer to the question of what should constitute universal service is inherently, and profoundly, a political as well as a philosophical one. Given the enhanced role of information and communication in the economy and society, access to communication services is now an important determinant of all socioeconomic opportunities.[1]

As part of that public debate, the following proposed general principles should be considered.

- Public safety and education should be the system's highest priority.

- Providing scientific, technical, economic, and political information should have a higher priority than providing entertainment.

- Retrieval of past information should be as important as the rapid delivery of new information.

- The value of any communications system (e.g., telephone, fax, electronic mail) increases as more users become part of the system.

- Providing many sources of information, education, and entertainment is better than providing fewer sources.

- Local information services should get more support than national services.

- Commercial users of a communication system should subsidize noncommercial (i.e., residential) users.

- Markets work better than regulations to deliver new services.

If and when these principles are adopted, new information systems could be created, or existing media systems could be changed, to reduce or eliminate the limitations previously discussed. These general principles suggest that the following changes that might be implemented:

- Allowing both cable television and phone companies to offer voice, data, and video services

- Taxing commercial users of information technology to fund educational or public library users

- Taxing advertising or other promotional spending to support alternative noncommercial information sources

- Promoting the eventual reversal of telephone and television services, reserving the airwaves for mobile uses that can't be delivered via wire or fiber-optic delivery systems

- Reimbursing newspapers that release their clip files to public databases.

CONCLUSION

The need for convenient economical access to scientific and technical information will continue as the world grows more complex. Modern information processing technology--computers, databases, fiber-optic data links, interactive multimedia learning tools--provide opportunities to distribute and store information in new ways. Creating a communications and information system that meets the needs of users will require evaluating and probably changing the economic and social patterns that now govern the existing news media system.

[1]U.S. Congress, Office of Technology Assessment, Critical Connections: Communications for the Future, (Washington, D.C.: U.S. Government Printing Office, 1990).

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