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## U.S. GOVERNMENT COMPUTER BULLETIN BOARDS: A MODEST PROPOSAL FOR REFORM

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**Abstract** -- Many U.S. government agencies have established electronic computerized bulletin boards as a means for distributing information that they collect and create. The establishment of these bulletin boards has met important needs of many users of government information, but it has also left unmet the needs of other users and depository libraries.

There are many kinds of government information that are particularly timely and which users want as quickly as they are made available by agencies. Examples include press releases, current economic indicators, demographic projections, and announcements of trade opportunities. Since many of these are either short or contain numeric data, or both, they are well suited to being distributed electronically. Electronic distribution (over telephone lines, as it is currently accomplished) is far quicker than distribution by traditional mail, and because the information is already computer-readable, it need not be translated or transcribed in order to enter it into (for instance) a spreadsheet program on a personal computer.

Since many agencies are creating this information using computers, it is very easy for them to make the information available in this format. In some cases, it is simpler and even less expensive, for there are no printing and mailing costs. Furthermore, the technology for doing this is easily available: a modem, a phone line, and commercial "off-the-shelf" bulletin board software can turn an ordinary personal computer into an electronic distribution center. It is easy to see why agencies have opted for this solution.

Many information users find this meets their needs nicely. A company that needs the current consumer price index, for instance, can easily dial a phone number in Washington on the morning of the release of the data and in a few moments have the press release and tables suitable for importing to a spreadsheet or word processing software on their own personal computer.

Unfortunately, although this solution works fairly well for some, it does not work at all for other users of government information. To make use of government bulletin boards an individual must be familiar with computer hardware and telecommunications software, have the ability to own and maintain such equipment, be able to bear the expense of long distance calls to Washington D.C., and, in some cases, maintain a prepaid account even to "browse" through what is available. Most importantly, a user must be

technologically aware enough to know that such information sources exist in the first place. Although someday the United States may have an electronic information system that is more easily available to everyone, what exists today is no more than the primitive beginnings of an infrastructure for such an information system available only to the technologically elite. Until and unless such a more generally accessible information system becomes available, other modes of making public information easily and equitably available must be utilized.

Libraries traditionally collect information and make the information available to the public. Libraries are, unfortunately, also at a disadvantage if they wish to collect and make available information distributed on electronic bulletin boards. A library that wishes, for instance, to collect even a small part of the information on a single bulletin board may spend literally hundreds of dollars each month in long distance calls to Washington and hours of staff time downloading files. In addition, long distance phone lines are often not adequately quiet for successful downloading. This causes lost files, additional costs for failed long distance calls, and additional staff time. If a library wishes to collect from more than one bulletin board these problems are multiplied. Other problems include initiating subscriptions or accounts for each bulletin board separately, learning the particular bulletin board software used for each agency, and learning the structure and contents of the bulletin board. There is, of course, the problem of learning that the bulletin board exists in the first place! Clearly this dissemination is not part of the Government Printing Office's (GPO) library program.

These problems, which libraries face, are not problems of electronic dissemination but of the particular kind of electronic dissemination: personal computer bulletin boards over long distance telephone lines. There is a fairly simple off-the-shelf technical solution to these problems.

The solution is to have a single government computer (probably of the "workstation" class) attached to a variety of national communications networks and to house, on that computer, files of any agency that desires to distribute information in this manner. It would be most logical, given current government structure, to have the machine administered by the Government Printing Office, which already distributes information in paper format for government agencies to libraries through the depository library system. The GPO would maintain the file structure on the machine, any software for allowing access to the machine, the network connections, and would update, add, and remove files as indicated by participating agencies.

There would be several possible routes for access to these files. If the machine were connected to commercial networks such as SprintNet (formerly Telenet) or TYMNET, users with local SprintNet and TYMNET access would call those local numbers and connect to the GPO machine much as librarians now connect to Dialog and BRS. The cost would be a fraction of a long distance call and the connection quiet and reliable. If the machine were connected to the Internet (see appendix 1: "The Internet"), users could remotely logon to the machine through the Internet. For most users the cost would be minimal or nonexistent for each incremental use of the Internet. Once connected to the GPO machine in either of these ways, the user would be able to use whatever software GPO maintained to gain access to files and move them to their own machine. If the GPO machine were connected to the Internet, there would be several other possible advantages:

1. The machine could maintain a "listserver" and several lists. (There might, for instance, be one list for each agency or one for each of several subject categories. The structure of the lists could

even parallel the item choices currently used by depository libraries.) Files posted to a particular list would be automatically sent by electronic mail to users subscribing to that list (see Appendix 2: "Listservers").

2. Users of the Internet could obtain files through the fast, reliable FTP program (see Appendix 3: "FTP").

3. Users would be able to easily exchange electronic mail with GPO and individual agencies.

The advantages of this proposal are many. As mentioned above, GPO would be providing the service for electronic information that it has always provided for paper-based information: that of "mailman" for the agencies. By providing this service, the GPO would also be able to offer to agencies, which have not been able to develop their own bulletin boards, the opportunity to distribute their information electronically with little or no investment. Current users of bulletin boards would suffer no loss of service and, in fact, would benefit by the less expensive and more reliable telecommunications and by easy access to more agencies. Agencies would benefit by having a central agency (GPO) take care of the administration and cost of distribution of their information and by increased visibility of their files in a large single service. Libraries would benefit by saving telecommunications costs and staff time and, if listservers were used, by receiving information automatically, as they receive paper products. Users of government information would benefit by having access through libraries to information currently either technologically unavailable to them or expensive for them to obtain.

There is also a future to this story. Current technology limits the utility of a system such as this to relatively small files. Large datasets that the government has distributed on computer tape or on multiple floppy disks and those which are now or soon will be distributed on compact discs are simply too large to send over the Internet or over low speed telephone lines. The creation of a high speed National Education and Research Network (NREN), which is currently under consideration by the U.S. Congress, would make even those files potential candidates for distribution through the network (see Appendix 4: "NREN").

## **APPENDIX 1. The Internet**

The Internet is an informal national network that connects computers all over the country to each other. The Internet accomplishes these interconnections through a combination of 1) direct connections, which use wires and satellite links, 2) standards, which define how packets of information travel over the connections and get to the correct machine; and 3) computer programs, which work for the user in the same way, regardless of what machine the user is connected to. Many library online catalogs are now available on the Internet. Using readily available hardware and software, even a desktop computer can be connected to the Internet.

Users of the Internet can: 1) send electronic mail from their machines to a user on another machine; 2) login to another "remote" machine (in a different city, for instance) and use the resources of that machine (this requires having accounts and authorization to use both the "local" machine and the "remote" machine, of course.); 3) use a program called FTP (file transfer protocol) to move files from one machine to another quickly and accurately. (Many machines do not require the user to have an account to use FTP.)

## **APPENDIX 2. Listservers**

A listserv is a computer program that, in its simplest form, automatically mails messages to an electronically maintained mailing list. Although there are different versions of the original "listserv" program being used, and listservers are administered in different ways, typical features allow one to send a electronic mail message to the listserv and subscribe to a particular list; send a message to the list and have it resent to all subscribers; and search for and retrieve from an "archive" messages that have been sent through a particular list. Listservers with which many librarians are familiar include the Public-Access Computer Systems Forum List (PACS-L) and the Discussion of Government Documents Issues List (GovDoc-L) List.

## **APPENDIX 3. FTP**

FTP, or File Transfer Protocol, is a computer program for transferring files across a network. It is fast, efficient, and accurate. It is available for most major computers including the Apple Macintosh, personal computers using DOS, IBM mainframes, DEC Vax minicomputers, Sun Workstations, and many more. It is easy to use, with commands such as "get" to retrieve a file from a remote system and "put" to transfer a file from a local computer onto a remote computer.

## **APPENDIX 4. NREN**

The National Research and Education Network (NREN) is the name of a proposed new computer network. It would be nationwide with international links. It would be capable of transferring data at much faster rates (up to multi- giga-bits-per-second, it is hoped) than the Internet. Where the Internet has evolved in an almost ad hoc fashion as a network that connects networks to each other, the NREN would be a truly national effort; it is often compared to a "superhighway" for data. NREN has been proposed in both the Senate and House (S. 1067 and H.R. 3131 ) and by the White House ("The Federal High-Performance Computing Program").