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EDITORIAL

The last issue of DEOSNEWS included a paragraph titled "Internet--the
Ultimate International Electronic University?". This article gives a more
thorough and detailed review of some services provided by Internet, pres-
ented from a distance educator's point of view. Some of the e-mail ad-
dresses presented in this article may vary between the different networks
in Internet.

INTERNET--THE DISCOVERIES OF A DISTANCE EDUCATOR

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This paper is an account of some of the services available through Inter-
net--the large international network of computer networks whose members

include universities, research institutions, government facilities, and many corporations. The purpose of this article is to provide pointers so that interested persons can explore the network to find what is most relevant and useful to them.

In Australia, access to Internet is obtained through AARNet (the Australian Academic Research Network). AARNET is a private telecommunications network service provided under the auspices of the Australian Vice-Chancellors' Committee (AVCC) to the participating member institutions of the AVCC and the Commonwealth Scientific and Industrial Organisation (CSIRO). The network seeks to provide dedicated telecommunications services in support of members' research, academic, and service activities. Networks serving similar purposes in North America include NSFNet, BITNET, and in Europe JANET and EUNet.

The technical nature of the network itself can be ignored. The important thing is that the personal computer plus modem and the physical connection to a host computer can open access to a huge array of resources from all over the world.

The author has a strong interest in technology and therefore was prepared to accept the challenge provided at Murdoch University by the Unix interface between the individual and the Network. User friendliness is not a strong point of this interface but with the help of the electronic mail system "elm", an introductory text on Unix and help from staff of the Computing Services Unit, much has been learned (and is yet to be learned!-but it is worth learning!!)

Useful additional information was obtained from "RFC 1118 - The Hitchhikers Guide to the Internet" and "RFC 1175 - FYI On Where to Start - a Bibliography of Internetworking Information" which can be FTP'd (see later) from nic.ddn.mil. Both are in the directory rfc and the filenames are RFC1118.TXT and RFC1175.TXT respectively.

Examples of some services from Internet with relevance to distance education are:

- Electronic mail
- "Newsgroups"
- "Lists" or "computer conferencing boards"
- Library searches
- Electronic journals
- Data bases
- Access to computer software, text and other information (FTP)
- Use of software for statistical or other purposes.

Electronic mail

Much emphasis is placed on the benefits of sending messages in the form of electronic mail through Internet to allow people to maintain contact and exchange information and gain help from each other. This is an important service and can provide sufficient motivation for people to connect to the system. However, the many other services offered through Internet must not be neglected.

"Newsgroups"

In addition to the person-to-person electronic mail, there is the one-person-to-many persons connections which can be made. The existence of international newsgroups (over 1,000 available at Murdoch University) carrying in excess of 250,000 items everyday (with the accumulation of many others from the past maintained in archives) is overpowering. Some time is needed to find the newsgroups of relevance to you. However the potential for obtaining help from around the world and for finding out what is going on, can make newsgroups invaluable. Not all universities carry all newsgroups, and frequently a university will include some held only within that university. The "news" which is posted tends to be dominated by USA sources but frequently countries will have additional groups relating to that country. For example aus.education for Australia and can.jobs for Canada.

The largest grouping of newsgroups relates to computers - hardware, software and operating systems. Examples are:

comp.binaries.ibm.pc comp.binaries.mac
 comp.lang.c comp.laser-printers
 comp.sys.amiga comp.unix.questions

Distance educators may have a specific discipline of interest which they wish to follow. Some newsgroups in this category are:

sci.chem sci.math.stat
 sci.psychology soc.culture.greek
 soc.culture.nordic soc.politics
 bionet.agroforestry soc.history

There is a newsgroup alt.education.distance specifically for distance education. Others of interest could be:

aus.education misc.education

There are many newsgroups dealing with hobbies and other interests. Examples are:

rec.arts.cinema rec.arts.tv.soaps
 rec.food.cooking rec.radio.amateur.misc
 rec.sport.soccer alt.sewing

"Lists" or "computer conferencing boards"

Catering to more specific areas and/or interchange of ideas are computer conferencing groups available through "Listservers". A person subscribes to the "list" and contributes to and receives mail from other subscribers.

A list of lists with a short description of each list can be obtained by sending the command "LIST GLOBAL" to any Listserv address. An address example is:

LISTSERV%bitnic@cunyvm.cuny.edu

A longer list (the "List of lists") which contains most of the major lists of specialist interests, describes their primary topics and explains how to subscribe to them. It is obtainable by "anonymous FTP" file transfer protocol (see later) (1). This is a large file, approximately a megabyte of space, and consumes transmission time and storage space. Some universities may already have this and want you to use their copy!!

A typical example from that file is as follows:

EDUCOM-W%educom.bitnet@cunyvm.cuny.edu

EDUCOM-W is an unmoderated list to facilitate discussion of issues in technology and education that are of interest to women. The list is intended to promote discussion of how EDUCOM can help address those issues in its services to members.

To subscribe, send a message to LISTSERV@BITNIC with the following line of text:

SUB EDUCOM-W Your_full_name

where Your_full_name is your name, not your login ID.

The list coordinator is Sue Ellen Anderson, Anderson@EDUCOM.Bitnet

[The address given in that quotation is the BITNET address. For Internet users it can be changed to `LISTSERV%BITNIC@CUNYVM.CUNY.EDU`]

Distance educators should subscribe to `DEOS-L%psuvm@cunyvm.cuny.edu` and `DEOSNEWS%psuvm@cunyvm.cuny.edu`. The first is an on-line symposium and the second is an electronic journal edited by Morten Flate Paulsen.

Another list which may be of interest is Comserve (2) which is targeted at human communication studies. Within Comserve there are a number of separate conferences with particular foci. Five examples from the 25 listed on 24 April 1991 were:

MassComm. For discussion of issues in the areas of mass communication, mediated interaction, new technologies of communication, etc.

Methods. For discussion of research methodology including qualitative and quantitative procedures.

Gender. For discussion of issues pertaining to the study of communication and gender.

HealthCo. For discussion of issues pertaining to the study of communication and health and communication in the health care profession.

CMC. For discussion of computer-mediated communication, diffusion of computer communication systems, impacts in education, business, government, etc.

Library Searches

Many libraries have On-line Public Access Catalogues (abbreviated OPAC's). These can be searched through Internet. Examples of the guidance provided by Deidre Stanton, the Social Sciences Librarian at Murdoch University, (3) are as follows:

```
University of Melbourne. Baillieu Library
terminal type = VT100
vax1> telnet library.unimelb.edu.au
OR
vax1> telnet 128.250.129.2
login> select from the CATALYST and SEARCH menu
```

options, without pressing <Return>
 Help = [Ctl] Y
 Exit = [Ctl] X, which returns you to the VAX1 prompt

Deakin University Library
 terminal type = VT100, VT52, H19
 vax1> telnet library.deakin.oz.au
 OR
 vax1> 128.184.1.1
 login> alice (use lowercase)
 to start> press <Return> twice (if necessary, to start
 type Q
 Exit = press <Return>, type ~. (i.e. tilde, dot) and
 press <Return>
 OR press <Return>, type ~ may return you to the
 VAX1 prompt

Addresses for library catalogues that are accessible via Internet are usually available at a university computer services unit or held in printed form in the university library. In April 1991, the printed list at Murdoch University was 70 pages long. A source of American listings which is being extended to include overseas libraries can be obtained electronically. (4)

Electronic Journals and Books

The availability of electronic journals is increasing. The following is an extract from a notice from the Association of Research Libraries (ARL). (5)

ARL to Produce Directory of Electronic Publications

As part of its keen commitment to promote networked academic journals and other serials, the Association of Research Libraries (ARL) plans to publish a directory of electronic journals, newsletters, and scholarly discussion lists/interest groups. These represent publications which are created and distributed principally for Bitnet, Internet, and any affiliated academic networks, largely for free.

The directory will be available at the end of June [1991]. It will contain some 30 journal listings, about twice that number of newsletters, and over 1000 scholarly lists. Its length is anticipated to be close to 200 pages..... The listings are compiled with the intention of providing the uninitiated networker with clear directions on how to navigate the sometimes puzzling world of electronic scholarship.

[This directory is now available. (6)]

Databases

An example of a very useful database for distance educators is that of the International Centre for Distance Learning (ICDL). This is held at The Open University in the United Kingdom and contains information about distance teaching institutions worldwide, a bibliographic catalogue of the ICDL collection, and information on individual courses taught at a distance by Commonwealth institutions.

Access is via a facility known as "telnet". Telnet enables a user to log-in to a remote computer which is part of Internet. Usually the user must have an account and be registered on the remote host with a name and password. In the case of the ICDL database, this is not necessary and current instructions (7) are as follows:

- Telnet to sun.nsf.ac.uk - currently 128.86.8.7
- Login as janet - in lower case; there is no password
- Enter the NRS name of the Open University VAX cluster when prompted, i.e. uk.ac.open.acs.vax
- When asked for a username, type: ICDL

Access to computer software, text and other information (FTP)

Within Internet it is possible to use "anonymous file transfer protocol (FTP)" to gain copies of computer software, text and other information contained in files made available in a public directory in a distant computer. As with most of the challenges and opportunities offered by Internet, the main problem is to know where you might obtain the information or software you want. There is a list of Internet sites accepting anonymous FTP prepared by Jon Granose from the host pilot.njin.net in the directory pub/ and the file ftp-list.

Another method is to use "Archie". The archie system is a program which can query a database maintained by the Computer Science Department of McGill University. The database contains a list of software which is available by means of anonymous ftp to hosts connected to the Internet network.

The system can be accessed in an interactive fashion or via electronic mail (email). In order to use the interactive system:

- 1) Connect to host quiche.cs.mcgill.ca (132.206.2.3 or 132.206.51.1) with telnet.
- 2) Login as user archie (no capitals, no password required). The system prints a banner message and status report.
- 3) Type "help" for further information.

In order to use the email interface, send requests to

archie@cs.mcgill.ca

Send the word "help" in a message for available commands and features. Please note that this is an automated interface: no human sees it. (8)

Australians can use "Archie" by telnet to sol.deakin.oz.au and login as "archie" rather than use the Pacific link to North America. They can also obtain MaasInfo.Archie from the host aarnet.edu.au, directory pub/doc. This is a guide to how to get started using Archie to find files if you know their names and suspect they may be available somewhere on Internet.

In addition to the above sources, it is possible to use the newsgroups described earlier to request help in locating a wanted item. The help message can be posted to the newsgroup or list of special interest.

Files obtained in this way are not limited to computer software or text. For example, graphics can be transferred via this method. James Cook University provides graphics of current satellite weather pictures such as Australialast and globelast in the directory JCUMetSAT at marlin@JCU.edu.-au. These files are binary and can be viewed on an MS-DOS machine using the software viewpc.exe which can be FTP'd from the same directory.

Use of software for statistical or other purposes.

On most mainframe computers there is a vast array of software for a variety of purposes - particularly statistical packages to remove much of the hard work in analysis of data. Academics and students can be given access to some or all of these. By arrangement, access to software on distant computers can be gained for computational purposes. University computer services units can guide the novice in this area.

FUTURES

Many academics involved with distance education do not know much about Internet. Many may find its services currently of little relevance to their work. For example, a high proportion of the newsgroups relate to computer languages. This is understandable, since the network has arisen from computer services units.

The social sciences are poorly catered to in newsgroups. "Netiquette" requires proposals for new newsgroups to be posted to general or to similar newsgroups to test the support for such a group. One can expect expansion in this way of services for the social sciences from Internet.

Increasingly people need to become information literate. Access to information and computing power, and use of this access, will not only enhance learning but it will empower those who have these skills. Distance educators should explore Internet. Better still, they can use the network to help their students.

REFERENCES AND FURTHER HELP

1. Available by ftp from host ftp.nisc.sri.com in directory netinfo/ as file interest-groups. This is a large file approx 900 kbytes which when downloaded into Word 5.0 and printed out in Times Font 12 came to 305 pages!
2. An electronic mail message addressed to COMSERVE@VM.ECS.RPI.EDU with no subject heading and a first line entry of "Send Comserve HelpFile" will be replied to with a mailed message with that file. The list of conferences was obtained with the first line entry of "Show Hotlines".
3. Unpublished communication 25 April 1991 from stanton@csuvax1.murdoch.edu.au
4. Send an electronic mail message to listserv%unmvm.bitnet@cunyvm.cuny.edu and in the body of the message say GET Internet LIBRARY (for text format) or GET LIBRARY PS (for postscript) - see RFC1175 page 21 (source quoted above) for more details
5. Electronic communication to the author (by a listserver) from Michael Strangelove 441495%UOTTAWA@acadvm1.uottawa.ca
6. Directory available by electronic mail by sending a message GET EJOURNL1 DIRECTRY

GET EHOURNL2 DIRECTRY
to LISTSERV@UOTTAWA.BITNET

7. Morten Flate Paulsen "The ICDL Database for distance education",
published in DEOSNEWS May 1991.

8. Obtained from Richard Lee Holbert X075RT%TAMVM1@RICEVM1.RICE.EDU

Footnote

Since the above was completed, Deidre Stanton (referred to earlier) has draw attention to MaasInfo.TopIndex available from aarnet.edu.au in directory pub/doc. This is an index of indexes pointing to all the major indexes that are posted on Internet or BITNET. These indexes then point at all the known interest groups, archive sites, special services such as library catalogues, file-finding and FTP via electronic mail and some major tutorial documentation that are located on Internet, BITNET or Usenet!! The author has not examined this one yet. Europeans and North Americans will have access to the "original" in the Northern Hemisphere. (One of the trade-offs made by network designers is to reduce the costs of intercontinental communication links by holding important reference information in more than one location.)

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