

# RELIGIOUS LIBRARIES IN CYBERSPACE

T C Lawton

**Abstract:** This article introduces the religion librarian to the idea of the Internet, its goals and functions. It attempts to convey the size of the resources of the Internet, and provide some examples of such resources. The suggestion is put forward that this network is an ideal reference tool for the use of religion librarians. And finally possible avenues for joining the Internet are presented.

oooooooooooooooooooooooooooo

The title sounds akin to the classic B-Grade science fiction movies of the 1950's, but the connotations are far, far greater than such a superficiality. For years, perhaps since the invention of the library as an institution of public good, we have been inundated by those devious creatures that strike terror into the hearts of all library staff - the users. They have no shame in asking the most mundane, pointless, exacting, impossible and/or technical questions that could ever be devised. And without doubt they ask in all sincerity, seeking wisdom, which they know to be housed within the walls of the library.

This familiar scenario happens everyday, and in some ways it is soul-destroying for the library staff who flounder for long minutes through the reference collection, progress onto the general shelves, only to return empty-handed to the expectant client (knowing full well that this would be the result when they went in search of). The fact that people put so much faith in the resources of their library, only to be denied instant information time and again, causes many a librarian to question - what is the point?

Without doubt we can provide, usually, some type of answer, at some level, to most questions, eventually. This however, is not the ideal, as we are all aware. To be able to present to a client the answer to highly specific questions on almost any topic is the enigma for which many, rightly so, can see there never being a solution.

In today's world in an effort to supply even greater and more expansive resources to the client, libraries have taken on the tools of technology, such as CD-ROM's and local area networks, which have placated a larger number of people than previously possible. Still though we continue to turn clients away, be they undergraduates, postgraduates or academic staff.

It is the belief of the author that the use of the InterNet has radically altered the face of the reference enquiry in academic libraries. It has the potential to answer with up-to-the minute facts many of the trickier reference questions, and to do it extremely quickly. Enter the world of Cyberspace and the concept of the Internet.

## What is the Internet?

In its glorious form it could be described as such: A vast global network of the world's finest minds, conversing on their topics of speciality and interest, interacting with any who care to join the debate. All omniscient creation of unimaginable content, capable of providing the greatest percentage of the world's combined knowledge ever assembled in one place.

Of course this is what you would believe given the view of the technocrats, and as with many vested interest, whilst this is true, it is only a part of the truth. The Internet is not a thing, or an object, such as a computer. The Internet is simply the term applied to the network of the network of computers of a myriad of different institutions. Primarily these institutions are of an academic nature, but they also include military, research, commercial, and Government computers. Formed (by the US Department of Defence) in 1969 as a project to attempt to stabilise the idea of wide area networks the concept quickly took off. By 1985 a number of large networks had formed including BITNET and USENET and in order to bring some order and compatibility the National Science Foundation Network took supervisory control of Internet and the many networks of which it comprised.

Perhaps one of the most astounding concepts to grasp is the physical size of Internet. According to Richard J Smith (1993, p10) there are now over 10 million using the network each day, the amount of data crossing the network more than doubles every year, and over one thousand computers are added to the network each day.

This phenomenal growth is what makes the Internet such a viable tool, because not only does it allow use of so many databases of information, it also enables direct contact with huge numbers of individuals, mostly trained in specific disciplines, and willing to discuss almost anything with anyone.

## What Is On The Net?

Or more precisely - what is not on the Net?

It is impossible to encapsulate the contents of Internet in an article such as this. Not only is it immense and varied, it is in a state of flux, with things being added and withdrawn daily. Needless to say, this means the information available is patchy and reliant upon interested parties. There may be a wealth of information about juggling (because a computer centre likes juggling), but nothing about George Eliot. Similarly, you might find all of Shaw's plays on-line, but one not there (simply because the person who added them does not like that play).

The content will begin to even out as more is added, and without doubt there is such a huge amount of data available the patchiness is almost unnoticeable.

For example, there is a tour of the Vatican Library (complete with full colour exhibit photos); the KJV full-text; ABN access (with fees); the Book of Mormon full-text; university course information; access to an index to 14,000 journal titles complete

with document delivery by fax within 24 hours (CARL UnCover). On New Norcia's (NNL) gopher we have links to most of the world's best religious catalogues and a directory of Australian Benedictine houses. Also NNL coordinate a religious library mailing list which caters for discussions between religious librarians (we have 80-odd members from all around the world).

In order to comprehend what is available the only answer is to go and look at it in action and spend a few days (weeks, months) playing. No amount of my listing could adequately convey the wealth that lies at the other end of your telephone line.

## How To Join The Net

There are variety of ways of getting onto the Internet, all of which have their place and possibilities.

The single best way is through a direct connection with a server, such as is the case with most university campuses. These allow you access, free of charge, at any time of the day or night, for as long as you can stand sitting at the keyboard. It is highly unlikely that any non-university library will be in a position to gain access via this method. It requires direct cabling to the host machine, and as such you would need to be close to the physical unit, such as on the same campus (not to mention be on good terms with the host owner).

The two most attractive methods to gain entry is by dial-up facility. This can be either to a commercial service, a Bulletin board, or an AARNet host. Of these only the middle option is possible free of on-line charges, whilst the others charge hourly rates.

To begin, it should be understood that dial-up users are merely tapping into the resources of a host computer. In this way it is unimportant as to whether you use a simple terminal or a personal computer (although there are big advantages and disadvantages in this choice). Whilst connected via the phone line you are for all intents and purposes simply a screen attached to a big computer. The implications of this are many, but most important is the following concept:

When you receive mail, or download information or software, it is saved on your partition of the host computer, not on the machine within your office. You are given a definable area on the host hard disks for this specific purpose. In order to use this information once your connection has ceased (ie the phone is hung-up) you must have already downloaded the relevant data from the host to your own PC. It is important to visualise this, and remember that your terminal is communicating with a certain computer, which is in turn connected to the network - your computer is NOT connected to the network directly.

BBS (bulletin boards) are established by computer hobbyists for the express purpose of swapping information on any number of different topics (computer related and otherwise). They sprang up out of the home computer boom of the early 80's when

many of today's megabillionaires of the computer industry were themselves just hobbyists (eg. Steve Jobs and Bill Gates). In a way the BBS were the forerunner of Internet just as much as the major academic networks, simply because they reached the popular masses, and on a much more diverse range of subjects.

Every major city will have one or more BBS services, some relating to specific topics, others totally general. In addition many of them, realising the potential for the Net, are now offering links (or gateways) for their users to jump across onto the Internet. This gives the general public free access (apart from the local telephone call) onto what has hitherto been available only at a cost.

One of the main things to ensure in establishing an Internet link via BBS is that it is a direct real-time connection. If it is not you will probably be restricted to sending mail and adding your name to lists, but not the other aspects such as on-line chats and downloading.

The commercial service and the AARNet service are for all intents and purposes the same produce - from the point of view of the user. Both charge an on-line fee and a initial account fee, and usually have a range of plans available for individual users. Typically expect to pay from these places between \$1.00 and \$9.00 per hour for connect time, and from \$10.00 to \$100.00 start-up fee.

For these charges you are afforded a range of different products. For example, although one company might charge \$9.00 per hour (outrageous you may think), this includes a 1-800 dial-up number. This is ideal for country users who can be paying over \$30.00 per hour just in phone coats. The 1-800 number is a free call across Australia and so phone costs are removed.

Other aspects that affect pricing structures are disk space allocation, time restrictions, high usage, reliability, line speeds, etc.

**Disk Space:** Many services will give your 5Mb of storage (on the host computer) included in the cost, with extra space bringing exorbitant levies. 5 megs is enough for general daily use, but for high throughput, such as being on many lists (which brings much more mail), or software downloads, you might require more.

**Time restrictions:** For lower connect time charges you may be restricted in the times you can access the server. For instance it will probably be cheaper between 12 midnight and 4 am, than it is between 9 am and 5 pm.

**High Usage:** If after testing the system you find a great need for long access, it is possible with many services to pay a monthly fee rather than an hourly fee. Although costs might be \$2.50 per hour, a second plan could cost \$50.00 per month for unlimited time (and generally a larger disk space allocation). You will need to weigh up your usage, as in this example if you use the Net more than 20 hours per month, the monthly charge is more efficient.

**Reliability:** Linking up with a large company, or an AARNet affiliate will generally cost more than with a one-man company. However, the affiliate is part of either a government department or a university, and as such an enormous resources and interests in keeping the system up and running, but cannot provide the backup and reliability of the more expansive product if something goes wrong. On this subject the BBS option is dubious. Because it is a free product and is run from someone's home you have no support at all - if the system goes down while the owner is away from home, you might have to wait until he comes back (i.e. days or weeks).

**Line Speeds:** The cheaper options might only provide connect speeds in the low range of 2400-7200 bps, whereas the more expensive services will cater for 9600, 14400, 19200 and even 288000 bps. This is important for the user who downloads a lot of material or is at the terminal for long periods. The line speed determines how quickly data travels between your terminal and the server. Thus, slower line speeds means longer times to complete equivalent tasks, and obviously costs more in on-line connect charges. In reality it is painfully slow working at rates below 7200 bps, and the industry standard at present is between 9600 and 14400 bps for home/small business use.

If use becomes a constant need, it is possible to have a direct connect system from a remote location. Most services will allow a user to connect to the server via a leased line. This line (provided by Telecom) is a constant link between the user and the server and may not be used to connect to other places. Also in this scenario the user would need to purchase a second modem to be placed at the server end of the line. Setting up such systems becomes a fairly expensive option. Depending upon your location you could be paying \$2000-\$7000 to set-up, plus a Telecom line rental of \$70-\$100 per quarter, plus a monthly charge by the service provider. Usage would need to be very high to make this an efficient choice.

However, some providers will allow you to then act as a provider yourself and sell accounts. By default you could recoup some of the library's costs by offering home users the opportunity of linking to the Net at cheap rates. This is highly dependent upon the capabilities of your own computer and your ability to provide each person with sufficient disk space, security, etc....., and would necessitate the purchase of server equipment. Such equipment would be at least three or four phone lines and associated modems and is outside the scope of this paper.

There is a second option for permanent links. By paying a monthly fee, some providers will allocate a port just for your use. This means you have no time restrictions and will always be guaranteed or connection. Similarly it will enable your computer to stay connected for very long periods (if not 24 hrs per day). Also in this option you would be paying for a new port on the host, and the installation of a new phone line at the host end, as well as a second modem at the host end. This would require at least \$1000 in setup as well as your monthly charges. Unless your library wishes to provide services to other libraries via the Net it is usually unnecessary to have a permanent connection.

## Protocols

If your library is looking for the best, yet relatively cheapest option. It would undoubtedly be dial-up on a monthly charged basis, using a Macintosh or IBM PC (with Windows) as the terminal equipment. This combination will enable you to connect in a different manner which allows a fully graphical interface, and negates the need to know much about Unix (it is certainly prettier).

This type of connection differs to a general dial-up line in as much as your computer is not acting as a terminal for the remote host, but rather, is becoming a host in its own right. Although this can be difficult to understand it is the whole idea of the growing InterNet system. This is especially more so now that commercial hosts are selling connections.

It works like this. Someone joins Internet as a host, perhaps using a Unix mainframe (perhaps even a university). They then proceed to sell access to their computer (and thus to Internet) via dial-up lines and leased lines. Some of those people who link up the dial-up and leased lines then proceed to sell access to their own computer via dial-up and leased lines, and so it goes on. As you progress down this hierarchy the users and hosts tend to become smaller, but in fact anyone, even those who do not offer dial-up or leased connections (such as New Norcia), can be a host machine.

To effect this involves simply knowing that your computer (be it Mac or IBM or anything else) must be equipped with a TCP/IP protocol emulator. This system allows the micro to communicate with the Internet machines. For a Macintosh such an emulator will cost about \$100 from Apple. In addition you will need a further protocol emulator to speak with you Unix host, generally a SLIP or PPP connection (these can be taken free off the Internet).

The upshot of linking this way enables your computer to become a direct part of the system. That is, anyone else on the Internet anywhere around the world can access your machine. This also opens up the problems inherent in security of such networks. However, access can be controlled by you as the host owner, admitting or denying any users you wish. By being a host you can use the software on your own machine rather than relying on the software on your host (probably Unix) machine. This means that the graphics of your PC are available to make navigation around the network much easier (opposed to the purely text based Unix host).

This kind of connection also allows you to provide services to other users of the Internet, by setting up your own information service, or even supplying your library catalogue on the network. Many hundreds of libraries have already done this, including religious libraries. If all the libraries in a given locale are on Internet it could preclude the need for any local area networks.

Of course many service providers do not offer PPP or SLIP connections, and of those that do, most charge more for it than for any ordinary dial-up line. Similarly, if your institution wants to provide services via this method to other Net users it is

fairly essential that your connection is a 24 hour system. That is, either leased line or permanent connection, and these have been shown, are fairly expensive.

## How To Use The Net

If the library is going to reap the benefits of joining Internet it will be necessary to have at least one staff member who is fully in the know, and trained to effectively utilise the possible services. The best person for this job is a serious computer hobbyist, and if there is such an employee on the staff; he or she should be given the job. Whilst this might seem like a dubious suggestion, there is no question that such a person will seek out every avenue that exists in the system, even if only for the joy of being able to.

The person given network responsibility will obviously need a certain set of skills, and not merely basic computer knowledge. Because Internet is built up around a variety of computer types, protocols, and file types, the methods of extracting information is not as easy as it could be. For starters it requires knowledge of Unix, which is not the friendliest operating system known to man.

Once comfortable with the system there are a variety of programs that need to be mastered which allow navigation to become easier. These include Telnet, Archie, WAIS, WWW and Gopher. It is not simply a matter of loading a piece of software and following the on-screen instructions (as you might with a PC). Mainframes are decidedly unfriendly pieces of equipment at the user end, and it is mainframes with which we are dealing.

Nearly all types of computers can act as terminals to Internet, but all require different software to enjoy a good relationship with the system. What works for a Mac won't work for an IBM or Amiga, and it is essential that is sorted out at the beginning. The good news is that nearly all of what you need to interact with the network is freely available on the network at various Ftp sites (file transfer sites).

## FTP Sites

The ftp sites are simply places on a host's hard disks where interesting files are stored for users to download onto their own machines. They can be divided by system type, subject type, purpose etc... Thousands of ftp sites are available for the general public to access, providing free software, commercial software, pictures, sounds, and almost anything that can be stored in digital form. After a while using the system you become familiar with those computers which have Ftp sites which suit your needs.

## E-Mail

The most frequently used aspect on the Net is e-mail. It allows you to send messages, files, pictures, software, etc, to anyone else who has an e-mail address. This is not only quicker than ordinary postal service (dubbed snail-mail), but also is infinitely cheaper if you want to send to a lot of people a lot of information.

## Telnet/TN3270

The way of linking to remote computer is done via the Telnet (or TN3270) software. By entering the address of the remote machine you will form a link, which then requires a password to get into. With files such as library catalogues the passwords are either waived, or provided. Using this software (and assuming you have passwords) it is possible to link to almost every major University in the Western world (and many Eastern) and act as if you were sitting on campus.

## Gopher

Telnet and FTP are notoriously Unix'ie based systems, which require the use of unfriendly interfaces. In an effort to circumvent this the Gopher software was created (go fer this, and go fer that). This provides a menu driven interface which can link to telnet sites, ftp sites, text files, WAIS sites, phone books, etc. It makes it easy to navigate through the masses of data because everything is hierarchical. By linking to one Gopher site you will link to others which will link to others.... Gopher is the simplest way of coming to terms with the Internet.

## Veronica

Of course, as with everything else on this system, Gophers have become feral and they exist in their thousands. In order to find any particular piece of information on a Gopher you can search using Veronica, which will search all the Gopher menus in the world for your search criteria.

## Archie

As with Veronica, Archie (there's a Jughead as well, believe it or not, but I'm not going that deep) allows searching of thousands of sites in one attempt, but instead of Gophers, it searches ftp sites. This will help if you are trying to locate a specific piece of software.

## WAIS

Perhaps one of the most exciting developments in networking is the use of full-text files, rather than merely indexes. Wide Area Information Servers are full-text files which can be searched in particular criteria. Instead of getting a reference at the end you get the actual information (be that a recipe, a paragraph from the Bible, etc).

## WWW

Undoubtedly THE most exciting development is the World Wide Web which is an attempt to bring together all of the above, as well as graphics. Using a PC connection and Mosaic software the InterNet becomes coloured, incorporates photographs and different text sizes, whilst giving access to all the services you have



used previously. The problem with WWW is it transfers large blocks of data, which makes it sluggish and potentially costly (if you pay per byte transferred).

## Internet and ANZTLA

It is quite clear that to be on the Internet is almost mandatory in today's academic and research environment, where breakthroughs are broadcast to the world within minutes, rather than published within months.

In a way it is a computer version of the current library catch-cry - Distributed Information. By linking up together each institution can provide those services which they are best placed to give, to the entire worldwide research community, avoiding much of the duplication that has gone in years past for the sake of quick information.

The ability to send a copy of a paper immediately and very cheaply across the globe, or to read the latest AAP, UP and Reuters newsfeeds as they are written, is something which is revolutionising the way in which research is done, from undergraduates to professors, and indeed even in the general public arena.

New Norcia Library has entered this new age and is happy to provide free consultative services to others that are considering such a move. There are many considerations to be made, which if wrongly approached will see staff and students quickly disillusioned with what is very much the information superhighway of the future.

For others who are on the Net feel free to Gopher or WWW to [stour.iinet.com.au](mailto:stour.iinet.com.au), or send messages, giving or seeking advice to [tc@iinet.com.au](mailto:tc@iinet.com.au). also you might consider joining our religious library forum.

We are looking at adding to our systems and providing other services such as directories and catalogues (perhaps the ANZTLA directory on-line), and would be happy to hear suggestions for improvements.

oooooooooooooooooooooooooooooooo

## Service Providers

Below is a number of service providers for different areas (there are a lot more than I have listed). The costs may have changed and the services also may be altered, but it gives people a starting point for a link. Also, it is good policy to call the computing centre of your local university who may offer the same type of services or have information on who does.

### National:

InterConnect ph: (008) 818 262 e-mail: [info@interconnect.com.au](mailto:info@interconnect.com.au)  
Services: Dial-Up, Terminal  
Cost: \$95 (1 off) +\$20/month+15c/minute

Pegasus Networks ph (07) 257 1111 e-mail: support @peg.pegasus.oz.au  
Services: Dial-Up, Terminal  
Cost: \$95 (1 off) + \$20/month+time charges

Perth:

iinet technologies ph (09) 307 1183 e-mail: iinet@iinet.com.au  
Services: Dial-up, Permanent, Terminal, PPP/SLIP  
Cost: \$25/month +volume(\$10 free), permanent \$30/month

Winthrop (UWA) e-mail:wthelp@yarrow.wt.uwa.edu.au  
Services: Dial-Up, Permanent, Terminal  
Cost: \$50/month or \$2.50 per hr

Melbourne:

APANA modem: (03) 596 8366 e-mail: zerohour@suburbia.apana.org.au  
Services: Dial-up, Terminal  
Cost: \$55 pa

Sydney:

APANA modem: (02) 418 8750 (guest) e-mail: root@lsupoz.apana.org.au  
Services: Dial-Up, Permanent, Terminal, SLIP  
Cost: \$20(1 off)+\$5/month

Microple ph (02) 888 3695 e-mail: info@jolt.mpx.com.au  
Services: Dial-Up, Terminal  
Cost: \$25(1off)+\$23.50/month

Adelaide:

APANA modem (08) 373 5485 (guest) e-mail: adrian@apanix.apana.org.au  
Services: Dial-Up, Terminal, SLIP  
Cost: \$65 pa or \$10/month