Legal Research on AARNet and the Internet

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Overview of AARNet and the Internet

The Internet or "electronic super highway" is a collective term for the network of more than fifteen million users. One of these networks is AARNet, the Australian Academic and Research Network.

During the 1960s and 1970s companies such as Xerox, General Motors and IBM developed their own networks with their own communications protocols. At the same time, researchers across the world were also experimenting with networking. In Australia, ACSNet started in 1979 when a computer at the University of Sydney was connected to one at the University of New South Wales. This network was expanded and eventually formed the nucleus of AARNet.

In the United States, the development of small networks led to the combination of some networks into one using a common interface protocol known as TCP/IP. This meant that users of remote host computers did not need to have the same type of computer as the host computer.

The need to share information and resources led to the development of very large networks such as the Internet. In the United States, NSFNet (National Science Foundation Network) provides the backbone of the Internet. In the United Kingdom, similar developments led to the development of JANET (Joint Academic Network).

AARNet presently ranks fourth in the world in terms of the number of host computers connected to the world-wide Internet. It is a data communications system which links local area networks of its members to others. This extends the local area network into the national and international networks.

The original members of AARNet were all of the Australian universities and the CSIRO. In 1991, membership was broadened to provide for affiliate membership for research units in government departments and commercial organisations, and low-cost electronic mail membership for small organisations or individuals.

AARNet provides mail delivery, news, file transfer and remote access. It has growing applications in distance education and open learning. It provides access to remote resources such as supercomputers, radio telescopes and special databases.

Electronic mail, or email, is probably the most used service. The user sends and receives messages using a computer. A point to remember is that email is not secure. Email can be used to send drafts of papers, returned with editing or comments during the manuscript preparation process. Some journals will accept papers sent via email. For example, the journal *Australian Telecommunications Research* prefers to receive papers direct from the word processor via email. Apparently this saves typesetting and other costs.

AARNet provides access to USENET news, a global conferencing system. It has newsgroups on most topics and people from all over the world participate in these.

AARNet users are able to logon to, and interact with, different types of distant host computers. The library catalogues of over 300 universities around the world are accessible.

The network allows users to transfer files from remote computers irrespective of physical distance. These files might be computer programs or documents such as spreadsheets or word-processed documents several hundred pages long. They are transferred to your local computer instantaneously.

In this paper we will discuss three network tools Gopher, WAIS and World Wide Web.

Gopher

Gopher is a menu-based hierarchical system for organizing and retrieving networked information regardless of where the information is stored. It was initially developed in 1991 as a campus wide information system for the University of Minnesota, but it quickly became very popular for a variety of applications, and now there are over 3200 gopher servers at institutions around the world, including many in Australia, and they are all interconnected. By connecting to any gopher server the user has almost instantaneous access to any other Gopher and the information stored therein. Many gophers are campus wide information systems, containing material like course listings, faculty directories, local events calendars. Most also include general interest material ranging from weather forecasts and song lyrics to scholarly articles. Gopher makes it easy to retrieve information by having documents emailed directly to the user.[1]

1. Milles, James, "*An introduction to using the Internet*" Available via anonymous ftp from sluza slu edu, directory /pub/millesjg. The name of the file is interlaw txt

It is also possible to search all of the gophers all over the world at once This is called searching all of gopherspace So, it is not necessary to know where information is stored to be able to find it The search system for Gopher is called Veronica (Very Easy Rodent Oriented Netwide Index to Computer Archives)

The Internet Gopher is very easy to use, and it provides a wealth of information The best way to become familiar with it is to spend some time burrowing through gopherspace exploring some of the menus and seeing where they lead

WAIS (Wide Area Information System)

WAIS, like Gopher, is a distributed information delivery system WAIS was developed as a means of providing a uniform user interface to a variety of databases A search in a WAIS database retrieves documents sorted by relevance as determined by the weighting of the words in the document; the weight of a particular word is determined by its frequency in a given document and its placement in the document (headline words are weighted more heavily) Boolean search capabilities have recently been added to some implementations of WAIS Any text file can be converted to a WAIS source file WAIS databases range from discussion list archives to transcripts of speeches from the 1992 American presidential campaign

WAIS offers the ability to search a user-specified selection of databases, no matter where they are located However, it is arranged alphabetically rather than hierarchically, so the user must have a fairly good idea of which files will contain the relevant information Like Gopher, WAIS has the capability of directly emailing documents to the searcher

World Wide Web

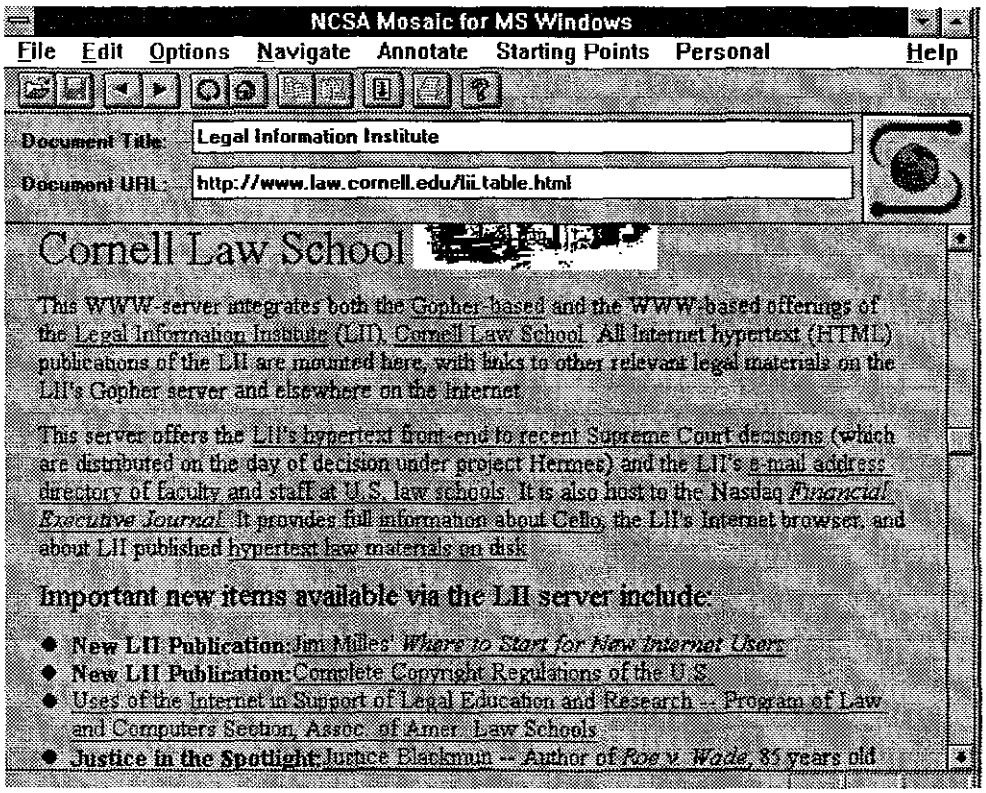
World Wide Web (also known as WWW, W3, or the Web) is an Internet tool developed at CERN in Geneva, the European particle physics laboratory It uses a technology known as hypermedia Hypermedia makes it easy to combine text, graphics, sound and even video into single electronic documents These documents can then be linked to each other; click on a mouse at a linking point (usually denoted by bold text) in one document and a related document will appear

The Web is worldwide because the links between documents can stretch across the global network; click on a footnote to a paper in an American database and you might see a related graph in Stuttgart The Web is seamless because the distance between documents is hidden to the user A browser is needed to use the Web, the popular browser for Windows is NCSA Mosaic Browsers are available for other platforms such as Unix and Macintosh

World Wide Web is rapidly overtaking Gopher as the preferred access system and publishing tool for Internet resources The multimedia capabilities of the Web provide much more flexibility than the menu-driven format of Gopher, and exciting publishing projects at the law schools at Cornell and Indiana are currently underway

The first of these law school publishing projects has been developed by Tom Bruce and Professor Peter Martin of the Legal Information Institute at Cornell University School of Law This project includes hypertext versions of the *United States Code*, federal intellectual property statutes, U S Supreme Court opinions and other materials (See *Figure 1*)

Figure 1: Publishing Projects at the Legal Information Institute, Cornell University School of Law

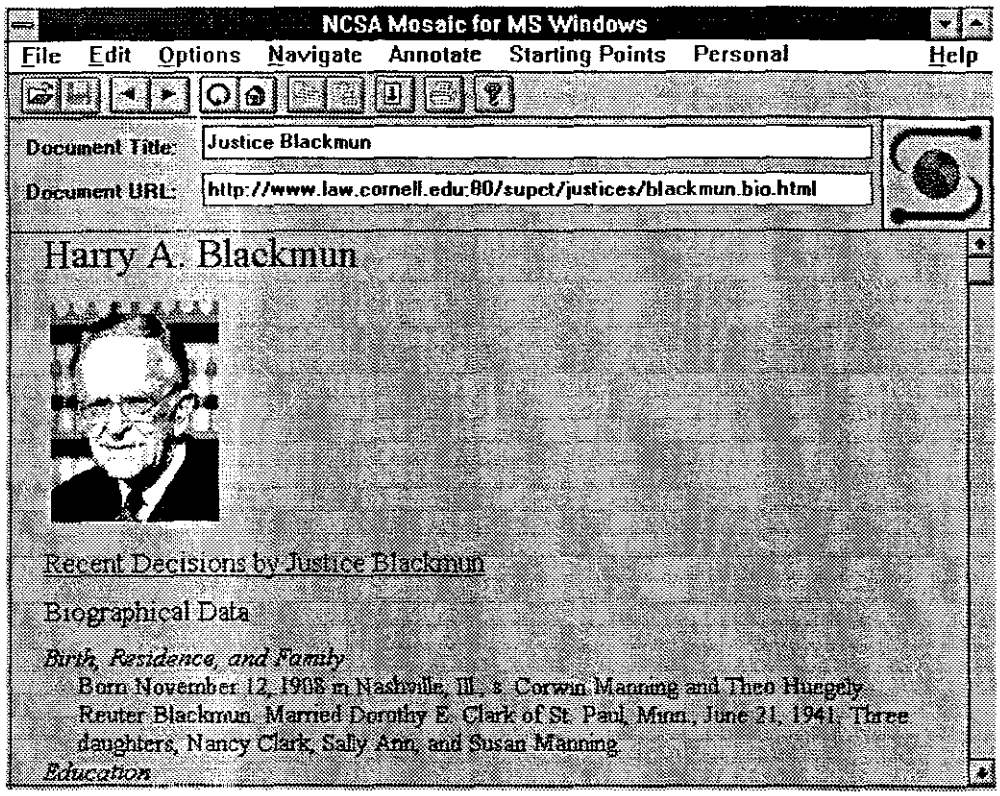


One interesting new item available via the LII server at Cornell is the file "Justice in the Spotlight" featuring Justice Blackmun (See *Figure 2*).

The Indiana University Law School WWW server makes available a number of unique resources, including a Feminist Curricular Resources Clearing House and the *Federal Communications Law Journal,* an electronic version of the hard copy law journal

The *Global Network Navigator* (GNN) was launched by O'Reilly and Associates in 1993. It is an online magazine and Internet reference guide. Like most things on the Web, GNN is free; the company will rely on advertising revenue from people paying to have links to their promotional material included in the magazine. O'Reilly will soon launch cheap software to connect home personal computers to the Web through the Internet, thus building up the advertising base. If this happens the World Wide Web may prove to be the application that brings the Internet out of academe and into the real world [2]

Figure 2: Justice Blackmun



2 *The Economist*, 5 February 1994, p86-87