

**THE UNITED NATIONS CRIME AND JUSTICE
INFORMATION NETWORK (UNCJIN)
THE UNITED NATIONS ON-LINE CRIME AND JUSTICE
CLEARING HOUSE (UNOJUST)**

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1. Introduction

The most important question to be addressed when designing a criminal justice information system is at whom is the information system aiming and who can and should be reached. When employing the Internet for such a criminal justice information is envisaged, it also has to be discussed which forms of crime should be combated by employing Internet technology. The analysis of who needs support, who can offer information, and technologically speaking, which platform is suitable for spreading the information are essential. Realistically it must be said that especially for developing countries only a mix of different means will work. Traditional communication, electronic mail, listservs, as well as modern World Wide Web servers all have their function.

When aiming at an international cooperation, the creation of awareness and exchange of information are the most common starting points. Discussion forums and joint projects are a logical follow up. Open networks, especially the Internet, offer the potential to initiate local activities with a potentially global impact, a very common attitude among Internet enthusiasts being to have the world on your desktop. Objectively seen the greatest benefits of getting involved in the Internet are a great variety of information and the cost efficient publishing, made possible by the common technological basis, available as world-wide standard.

Being present on the Internet becomes increasingly important for remaining part of a quickly developing new world-wide economic infrastructure, often called the information society. Giving a country or an internationally acting institution a presence on the Internet therefore is unavoidable. The higher the variety of information available, the better it is for breaking the monopoly of opinion leaders and for preventing the danger of the so called electronic colonialism. From a marketing point of view the Internet is an ideal medium for creating a positive image on a world-wide scale and for making information about problems available world-wide. The overall impacts of the Internet on business, on the financial sector, on politics, on public administration, on international organisations, on national and international legal systems and on the social environment cannot yet be fully identified, but it is obvious that it is the first major step towards changing the way international information and communication works.

2. United Nations Sites on the Internet

The Internet is becoming more and more a standard medium for providing information, ranging from educational efforts and guidelines to crime prevention and criminal justice information. The pioneers in the field of criminal justice and crime prevention are the Crime Prevention and Criminal Justice Division of the United Nations Office in Vienna and the United Nations Drugs Control Programme. United Nations Sites on the Internet can roughly be classified as sites presenting United Nations agencies, United Nations locations and United Nations special programmes and activities. Special educational and research activities have for a long time been a major United Nations goal, especially when aiming at information systems in public administration.

3. UNCJIN and UNOJUST in the International Combat of Crime

The United Nations Criminal Justice Information Network (UNCJIN) and the United Nations On-line Crime and Justice Clearing-House (UNOJUST) have become the United Nations' backbone in using the Internet to combat crime, the major aim being to establish a world-wide network of cooperating institutions jointly operating on the Internet.

For modern international organisations operating in quickly evolving environments, such as the United Nations Crime Prevention and Criminal Justice Division, it is vital that they be able to disseminate information quickly and efficiently. To this end, the Division and the Institute of Applied Computer Science and Information Systems of the University of Vienna jointly developed a framework to make various United Nations material on crime prevention and criminal justice as well as other organisations' materials electronically available.

3.1 The United Nations Criminal Justice Information Network (UNCJIN)

The United Nations Economic and Social Council, in resolution 1986/11, requested the United Nations Secretariat to create an electronic system for the exchange of crime prevention and criminal justice information. In 1989, the result of those efforts came to fruition as the United Nations Crime and Justice Information Network (UNCJIN) was launched by the School of Criminal Justice at the State University of New York at Albany, New York, United States, funded by the United States Department of Justice, the State University of New York at Albany and the Crime prevention and Criminal Justice Division. In 1992, UNCJIN was moved from a commercial carrier to the Internet where its two major components could be further developed. Those components included UNCJIN-L, a discussion list, and UNCJIN Gopher, a text-only database system.

In 1994, as required by United Nations mandate, UNCJIN had to migrate from the State University of New York at Albany to the United Nations Office at Vienna where it would be converted to a hypertext form and included in a World Wide Web site.

First Crime Prevention and Criminal Justice Division Home Page

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As a first step in this migration, a prototype of a Home Page and a World Wide Web Server, developed by the Institute of Applied Computer Science and Information Systems of the University of Vienna in cooperation with the Crime Prevention and Criminal Justice Division, was presented at the Ninth United Nations Congress on the Prevention of Crime and the Treatment of Offenders held in Cairo, Egypt from 29 April to 8 May, 1995.

It was decided that the prototype was feasible, and with assistance of the School of Criminal Justice at the State University of New York at Albany, and funding from the National Institute of Justice (NIJ), United States Department of Justice, UNCJIN Gopher was converted to HTML form and incorporated into the Vienna University system in the Summer of 1995.

The information infrastructure developed since can be accessed via the following address:
<http://www.ifs.univie.ac.at/~uncjin/uncjin.html>

UNCJIN on the World Wide Web

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In addition to these World Wide Web-based materials, the UNCJIN-L list, maintained by the United Nations Office at Vienna, has proved to be an extremely valuable tool for providing a forum for the discussion of research and policy issues.

The future development envisaged will focus on adding information to the existing web sites, especially widely used UN manuals such as the "Blue Book", and on the development of topic-specific databases which will serve as basis for creating HTML documents.

The second important focus of future development is to provide United Nations affiliated institutes involved in crime prevention and criminal justice activities with a similar basis, an activity which has already been started for the Australian Institute of Criminology:

3.2 The United Nations On-line Crime and Justice Clearing-House (UNOJUST)

While UNCJIN is primarily aimed at providing content information via the World Wide Web and a communications platform via the associated listserv and additional links to interesting content material, UNOJUST's main objective is to serve as navigation platform and as a starting point for institutional development. In addition, specialised tools, such as automatic translation, are provided.

As shown on the map below, the UNOJUST program (<http://www.unojust.org>) aims at expanding the platform provided by UNCJIN by supporting United Nations institutes and national organisations to join the effort of building a common legal information systems infrastructure based on the Internet.

The NIJ-UNOJUST Homepage

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The idea of the United Nations On-line Crime and Justice Clearing-House (UNOJUST) is a response of the National Institute of Justice (NIJ) to a long-standing recommendation of the United Nations Commission on Crime Commission and Criminal Justice to strengthen the clearinghouse functions of the United Nations Crime Prevention and Criminal Justice Programme. In April 1995, the National Institute of Justice joined the United Nations Crime Prevention and Criminal Justice Programme Network and became the eleventh criminal justice research institute associated with the United Nations Crime Prevention and Criminal Justice Programme. Pursuing its mission as a national and international broker of criminal justice knowledge, the National Institute of Justice has taken a lead in conceptualising and prototyping an Internet-based vehicle for information dissemination and sharing within the United Nations Programme Network Institutes. The prototype system was demonstrated at the 9th United Nations Congress on the Prevention of Crime and the Treatment of Offenders, Cairo, April 29 - May 8, 1995, as well as discussed and approved as a model at the 10th United Nations Programme Network Coordinating Meeting in Courmayeur, Italy, 14 - 18 October 1995.

UNOJUST is understood as both an Internet-based information system, and a capacity-building technical assistance program. The technical part is an Internet-based electronic network consisting of the linked together World Wide Web Servers, including hardware, software and connectivity. The capacity-building part includes the initial technical support and training of the designated representatives of the United Nations (affiliated) institutes, in order to develop skills they need to serve as Internet information managers (webmasters) for their respective organisations, beyond the start-up period.

4. Going International through Information Technology

The adage of the environmental movement, "Think globally, act locally", also has meaning for criminal justice. Increasingly, to be effective requires thinking beyond the local, state, and single national level.

4.1 The Need for a Truly International Approach

For a long time, drug trafficking embodied the impact of international crime. Now other forms signal the growing cross-nationalisation of criminal activity. The transnational character of organised crime is one particularly pernicious development. Facilitated by recent trends toward economic and political liberalisation and by advanced methods of communication, crime committed halfway around the globe yesterday can mean crime committed at home today.

The rise in transnational crime is one force spurring the need for better international exchange of information in criminal justice and for faster, easier, world-wide access. The necessity for collaboration among nations to control this type of crime is clear because of the obvious bilateral or multilateral interests. There are other trends in which the need for international exchange may not be so evident. Crime and crime-related problems are becoming strikingly familiar, irrespective of geography. One such problem is juvenile offending, which is reportedly escalating steadily world-wide¹. At the 9th United Nations Congress on the Prevention of Crime and the Treatment of Offenders, 29 April - 10 May 1995, Cairo, many issues familiar to criminal justice agencies in the world, as urban crime, juvenile crime, and violence against women, were on the agenda. They are becoming familiar in more and more countries every day.

¹ United Nations Crime Prevention and Criminal Justice Newsletter, 22/23 (July 1993):11.

Forms of crime unknown until recently can have effects at the national and even the local level although they are committed in the international arena. Trafficking in weapons-grade nuclear materials, the sale of human organs for transplant purposes, the many manifestations of computer crime, crimes involving electronic funds transfer, and environmental crime are among the many relatively new transnational crimes.

4.2 The response

Fortunately, parallel with new needs are new means to meet them. United Nations (affiliated) institutes, e.g. the National Institute of Justice are responding by expanding their use of advanced information technologies, with a major focus on the Internet, to transmit information, including research-based knowledge, and to serve as broker of information and promoter of information exchange world-wide. With criminals becoming more sophisticated and using advanced communication technologies to commit crime, law enforcement, prosecution, and other components of criminal justice need to be proficient in their use as well. The global reach of the Internet means that the criminal justice agencies and organisations can tap resources world-wide and communicate rapidly, easily, and inexpensively.

The political changes that have created new freedoms and opened borders in a number of countries have also made it easier to commit and export crime. Establishing institutions that are the foundation of an orderly society is a major part of the rebuilding process in these societies. To assist the emerging democracies, the National Institute of Justice is developing the Rule of Law Online website, an Internet service providing on-line access to information integral to the reform or creation of institutions based on the rule of law.

With foreign-based criminal activity increasingly affecting United States of America's crime, the National Institute of Justice research on transnational crime takes on an added dimension. And the growing similarity of crime trends world-wide means that criminal justice agencies in the United States can benefit from the knowledge and experience of their counterparts in other parts of the world.

5. Some Practical Advice on Technical Issues

Some helpful URL's to start from include:

UNCJIN: <http://www.ifs.univie.ac.at/~uncjin/>

UNOJUST: <http://www.unojust.org/>

and for a survey of best practice systems: <http://www.web.net/~cicp>

In order to offer a technological basis available for most institutions, the infrastructure requirements for the desktop equipment have been kept as low and flexible as possible:

- I. PC running Windows
- I. UNIX: workstation or LINUX on a PC
- I. Apple Macintosh.

The bottleneck will in most cases be the modem which remains dependent on the national telephone system. If affordable, an upgrade to ISDN, FDDI or even an ATM connection if possible. As far as the Internet providers are concerned, there is a wide range of commercial providers and government agencies and universities and research centres acting as providers.

The software requirements are mainly the communications software and an Internet browser, in most cases Netscape 2.0 or higher, MOSAIC, or the Internet Explorer. Given that the available connection offers a sufficient bandwidth for transferring high volume data, viewers for video and sound will add the necessary multimedia capabilities.

For providing and further processing information HTML editors and HTML converters from text processors to HTML and back should be acquired, many of which are available as public domain software. There

also is a variety of server software, available from Netscape, Microsoft, and Oracle, to name just a few. Optional software for producing graphics, videos, and sound is easily available too.

The acquired equipment should however be corresponding to the intended use, which can range from simple surfing to operating a server and creating and managing home pages. Communication will in most cases focus on simple electronic mail, listservs, bulletin boards, and participation in news groups. Access to remote systems can be implemented via telnet and ftp.

The probably most worrying part is the selection of the document standard to be followed. The most frequently chosen ones are HTML, SGML, PDF, and PostScript, for advanced multimedia applications sometimes HyTime. Proprietary formats, such as those coming with text processors and spreadsheets, are an alternative, but lead to dependency on the provider.

5.1 Scripting Languages for the Internet

The Java Language and the virtual JAVA engine are following the concept of making applications hardware independent and introducing operating system. Being an interpreter language for the design of so-called applets, simple animation of flat HTML pages, interface programming and software on demand idea are supported in a very efficient way. Commercially, the two big competitors in the field are Microsoft and Netscape. The full power of JAVA will come to bear as soon as comfortable interfaces to databases, office systems and operating systems are provided. Shell script programming under UNIX, network and database access modules in C and C++ and scripting languages, such as PERL, can be seen as forerunners of this idea. The similarity of JAVA's syntax with that of C and C++, the direct integration in WWW browsers and the excellent multimedia support are additional advantages of this language.

Helpful information in general can be obtained from the following Web Pages:

I. for Internet <http://www.ifs.univie.ac.at/~uncjin/manual/uncjin.hdb>;

I. for HTML <http://hake.com/gordon/w3-index.html>;

For introduction to HTML:

<http://www.ncsa.uiuc.edu/General/Internet/WWW/HTMLPrimer.html> is a valuable source.

For advanced languages information can be found:

I. for JAVA on <http://java.sun.com>;

I. for PERL on <http://www.ics.uci.edu/pub/websoft/libwww-perl>.

A helpful feature of these sources is that they can be consulted on-line.

5.2 An application example

Virtual libraries, especially Indiana's virtual law library, and Cornell's legal informatics institute have become frequently visited sites. For ideas on how to use the Internet for tracking down criminals and for crime prevention efforts the reader is referred to <http://www.fbi.gov>, for an example of marketing community policing to <http://www.ci.austin.tx.us/safety.htm>.

For local, national, regional, and world-wide cooperation the Internet has become an almost ideal basis due to its ubiquity and its cost efficiency.

5.3 The Dark Side of the Internet

As the Internet is such a universal tool, traditional criminals, drug dealers, distributors of pornographic material have long ago discovered it as medium for spreading information and coordinating their activities.

Newly emerging dangers are systematic copyright violation, the support of terrorism, the spreading of blatantly nationalistic and racist ideology, and activities of political and religious fanatics.

As can be seen at sites like www.stormfront.org, even distributed system concepts (204.137.145.172, 204.181.176.4, ...) are being implemented, the most difficult issue being that such activities are covered by some national legislation. The deliberate spreading of racist ideas in this case in English, German, and even in Spanish make the goal obvious. These activities being mainly World Wide Web-based, pornographic material and offenses against children do primarily occur in news groups.

While the international community is still moving slowly towards a harmonization of laws, terrorist handbooks and activities for advertising drugs remain prime reminders of criminals making full use of the new technology.

As the Internet becomes more and more uncontrollable and cannot be stopped at a national border, the joint preparation of our societies for coping with the negative consequences is an absolute must. The old social conflict of ensuring a maximum of freedom vs. providing the necessary protection and control is now returning with the Internet, this time in a more urgent form than ever before.

Appendix 1: Using UNCJIN

In order to facilitate a newcomer's start, some essential material from the original UNCJIN manual by Graeme Newman is reprinted in this section.

1. The UNCJIN-L Discussion List

In order to understand how the UNCJIN-L discussion list works, it is necessary to understand how e-mail works on the Internet and how Internet (e-mail) addresses are composed.

Internet e-mail addresses are composed of the user's mail name and a domain name, which indicates the location, for example: `jdoe@unov.un.or.at`. In this case, `jdoe` is the mail name of the user, a person named John Doe. The part of the address following the symbol `@` is called the domain name. In this case, `unov` stands for the United Nations Office at Vienna, `un` for the United Nations, or for organization and `at` for Austria.

Some important domains are `.com` (for commercial) and `.edu` (for educational). Most countries also have a domain (e.g. `.ca` for Canada, `.fi` for Finland and `.nz` for New Zealand).

LISTSERV

On the Internet, discussions lists generally use a computer program called `LISTSERV`, which organizes and distributes e-mail messages. It is analogous to a mass postal mailing system that does away with stuffing and stamping envelopes. The e-mail address of the `LISTSERV` program that administers `UNCJIN-L` is as follows: `listserv@lserver.un.or.at`.

`UNCJIN-L` can be joined by sending an e-mail message to the above `LISTSERV` address with the following command: `subscribe uncjin-l [name surname]` (for example: `subscribe uncjin-l john doe`).

A request for confirmation will appear at a later date.

USING UNCJIN-L

All messages posted on `UNCJIN-L` are disseminated by the `LISTSERV` program to all members subscribing to the list. The easiest way to reply to a message posted on `UNCJIN-L` is to use the reply option that is part of almost every e-mail software program used on the Internet. When the reply option is used, the reply is broadcast to all members of `UNCJIN-L`, not just to the person who posted the original message. Therefore, great care should be taken in deciding when or what to post on the list so that private messages are not sent to a public audience.

An alternative to reply option would be to send the message to `UNCJIN-L` at the following address: `uncjin-l@lserver.un.or.at`.

To ensure that a reply is sent only to the person who posted a message on `UNCJIN-L`, the reply should be sent to the address of the sender, which can be found in the header of the message.

RETRIEVING FILES FROM UNCJIN-L

`UNCJIN-L`, like all `LISTSERV` facilities, archives all messages posted to it. Thus, it is possible to go back through past discussions and retrieve information. To determine what is contained in archived files, the following message should be sent to the `LISTSERV` address `listserv@lserver.un.or.at`: `index uncjin-l`.

After a brief delay, this command will generate a list of available files. The files are organized chronologically, with names that contain one-month periods. For example, the file `10aug10sept` is a compilation of every message posted to `UNCJIN-L` during the period between 10 August and 10 September. After the list has been examined and the desired file has been selected, the following command can be sent to `LISTSERV`: `get uncjin-l 10aug10sept`.

SEARCHING THE DATABASE OF UNCJIN-L

In addition to retrieving files by name, it is possible to search the archived files by key word. For example, in order to look for all past postings in `UNCJIN-L` that had the word "police" in them, the following sequence of commands should be sent to `LISTSERV` in exactly the format in which it appears below:

```
//
database search dd=rules
//rules dd *

//search police in uncjin-l

index

/*
```

This will generate a search output for every instance in which the word “police” appeared in the database.

To retrieve a particular document, the following command sequence should be sent:

```
//

database search dd=rules

//rules dd *

search police in uncjin-l

print all of [enter number or series of numbers from the previous search output]

/*
```

2. The United Nations Crime and Justice Information Network on the World Wide Web

The Web is the most recent development in information management. The essential concept behind the Web is to make the links between various types of information appear seamless across time and space. Graphical images, sound, video, word-processed files, program files or data files such as spreadsheets can be incorporated into the Web with equal ease. Not only can the Web transmit and process any kind of file, it can also link specific words or phrases in a document to specific words or phrases in other local or remote Web sites. Linking related information with the Web has incredible possibilities. This diverse, unrestricted linking of information is sometimes referred to as a hypertext environment. The user is thus able to search for words or phrases embedded in any Web document, instead of being restricted to searching the subject file of a book, its table of contents or its index.

Special tools are needed to navigate the sea of information that is available on the Web, and the Web provides many such tools. The most common navigation tool is the Web browser, which allows a user to set up his or her very own home page, which is the first image that appears on the computer screen when logging onto a particular Web site. Since the first Web site logged onto is often the home site, a user can configure the home site to create his or her own unique home page. The home page may contain links to various remote home pages.

The Web is the fastest growing part of the Internet. It makes the Internet much easier to use and brings together many disparate, and often arcane, services of the Internet in a user-friendly environment.

WORLD WIDE WEB ADDRESSES

In order to access a Web site, it is necessary to know the Web address, referred to as the universal resource locator (URL). This address will be to a particular site that welcomes users to its home page. For example, the address for the UNCJIN home page in Vienna is <http://www.ifs.univie.ac.at/~uncjin/uncjin.html> and the address for the United Nations Office at Vienna is <http://www.un.or.at/>.

Web browsers are configured in such a way that it is rarely necessary to type in such long addresses in order to reach a particular site. It is usually simply a matter of "clicking" on an icon or menu option in order to go straight to the desired location. Most Web browsers also have "bookmarks", which allow favorite Web sites to be stored so that they may be easily returned to at a later time without retyping the address.

GETTING CONNECTED TO THE WORLD WIDE WEB

While the Web provides wonderful ease of use, getting connected to it in a mode that is acceptable can still be difficult, although connection services are getting better. The stumbling-block is that, because the Web utilizes on-screen graphical images, sound and video, the connection from a home or office computer to the Internet must be fast and of a different type than that needed for e-mail. That is partly because of the much more complex make-up of graphics files. It is also because graphics files tend to be large; consequently, getting them over the telephone wire and onto the computer screen may take considerable time.

The main thing that is needed to get connected to the Web is a UNIX shell account. This is important because the vast majority of the programs designed to make accounts work graphically are for the different UNIX platforms. The Internet service provider will know what kind of system is being used. Many on-line commercial providers now offer complete Internet Web access, including the necessary software. Although there is a cost associated with commercial providers, they can solve the often difficult technical problems involved in accessing the Internet. At least four alternative programs are currently available. These are described briefly below.

LYNX

The LYNX program is limited in that it only allows for the transmission of text files. Sound, images and other graphical components are not available to the LYNX user.

SLIP

Slip is a special program for connecting a personal computer to a UNIX account via a telephone line. It simulates the full Internet connection, which is what is normally used to operate the more popular software. There are several of these programs available. Using the versatile Internet Adapter is the preferred, if more complicated, way of setting up a graphical connection.

SLIPKNOT

The SlipKnot program is known as a "slop-less" graphical Web browser because no Slip connection is needed for it to work. A UNIX account that has either LYNX or Web line-mode browsers must be installed, as well as the ZMODEM transfer protocol. This program makes good use of what is available by storing on hard disk all retrieved home pages obtained during Web browsing. This allows for much faster retrieval of pages and is an advantage to persons with slow modems or high telephone bills. SlipKnot is available via the Web at <http://www.interport.net/slipknot/slipknot.html>.

PSEUDO-SLIP

The Internet Adapter is a program that resides in the UNIX shell account and fools the program in the Transfer Control Protocol/Internet Protocol (TCP/IP) stack, described below, into thinking that there is a dedicated Slip connection. This is helpful because the majority of people with Internet access do not have dedicated Slip connections. Until recently, a dedicated Slip connection was needed to get graphical access to the Web.

Before getting the Internet Adapter, it is necessary to know what hardware and software platform the Internet service provider is using. Requesting at <http://marketplace.com> a single-user evaluation code for the Internet Adapter will allow the user to test the program for two 14-day periods. The licensing fee costs about \$25. Once the user has applied for a user license, he or she will need to retrieve the appropriate Internet Adapter binary file via anonymous File Transfer Protocol (ftp) at marketplace.com in one of the following directories: /tia or /tiabeta. A program called `config.guess` tells users what system they are running. The Internet Adapter provides installation instructions detailing everything that needs to be done to get it working. Answers to questions on the installation of the Internet Adapter may be obtained at <http://www.webcom.com/~llarrow/tiarefg.html>, which is an excellent source of information on the Internet Adapter, TIA/SLiRP and the winsock setup. Once the proper Internet Adapter binary file has been retrieved, it is necessary to find out the addresses needed for winsocks. Typing "`tia -address`" will generate a listing of the gateway and nameserver addresses of the service provider.

There are a couple of other options with regard to a "pseudo-slip" connection. There is a free software program called SLiRP, which acts like the Internet Adapter. Another free software program called Twinsock performs a similar function. These programs, and many others, are available at <http://uts.cc.utexas.edu/~neuroses/>, which is Stroud's Consummate Winsock Applications List. This list is a superb source for the latest available winsock applications. It is the place to visit to obtain the programs that make up the TCP/IP stack, which is described below.

TRANSFER CONTROL PROTOCOL/INTERNET PROTOCOL STACK

The programs that make-up the TCP/IP stack include winsocks, Web browsers, e-mail programs, newsreaders, Gopher clients and any other applications that make the Internet more manageable. The first thing needed in order to become operational is a winsock, which can be obtained at <http://uts.cc.utexas.edu/~neuroses/>. The winsock acts as a conduit through which the various Web browsers and mail programs on the computer interact with the Internet. Help in getting this program to work properly is available at <http://www.webcom.com/~llarrow/tiarefg.html>.