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Challenges of internet for social work

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Introduction

University life has often been the subject of non-fiction literature. In one of the classics of this genre, David Lodge's *Small world*, a junior academic named Rodney Wainwright is struggling towards his first conference presentation without yet knowing what conclusions to present. In the novel, the person is saved by ... something of no use in this situation. Still, writing about cyberspace and its challenges for social work puts one in a similar position to this young Wainwright. The developments in cyberspace are happening at such a speed that written publications are to face the danger of being out of date by the time they are printed and reach their audience. Even just a few years ago, people looked compassionately towards those proclaiming connectivity of computers as the next major issue. And yet, here we are today with a situation in which working on a remote computer is as easy as working on one's own computer and relying on electronic mail is more effective than fax for contacts and information exchange with international colleagues.

In this article, we will try to present some background information on the current and possible future developments regarding cyberspace, outline some of the to be expected applications as well as the current advantages and disadvantages. We will end by describing the ENITH's world wide web as a case study and try to assess the challenges and threats that cyberspace carries for social work as a profession.

Cyberspace as the current hype

In the past decade, we've seen several hypes in the area of information technology, and it looks as if industry and especially computers magazines need at least one hype running to boost sales. Over the past years, we've had major hypes regarding decision support systems, neural networks, multimedia and so on. Some of these hypes made it to the stage of well accepted applications, but far more simply faded away never to be heard of again. All dominated the contributions in computer magazines and enabled those to publish new information and inviting articles for their readers, even if real life applications of these technologies were often scares and far-fetched. The current hype is cyberspace, not only omnipresent in computer magazines, but crossing the boundaries with other media.

Although a great number of persons use the term cyberspace in their daily explanations, it is not so easy to find a good definition. It's too early to find one in a dictionary, and computer publications all too often assume the concept is more than familiar. To our understanding, both

cyberspace and information highway are concepts that refer to the new combination of computer technology and telecommunication, enabling new services to be marketed. The technical hardware innovations are not too astonishing. We have had computers for many years now, and the basics of telecommunications have been developed decades ago. New is the ease by which both can be combined and the speed of transmission of data. Major organisational developments have however had their impact during the last few years. One of these is the transparent linking of several computer networks into one giant network, the internet. Whilst good five years ago, one computer network found it very difficult to communicate with another computer network, today it is hardly noticeable that internet is not a single monolithic network but a whole array of bits and pieces working together. Another major development has been the introduction of electronic mail in academic world, nearly free in use for individuals. Within these settings, the advantages of the use of electronic mail for fast information exchange and editing work was rapidly recognized. Other sectors became aware of the developments and gained access. First the institutes of higher education, followed by governmental and non-profit organisations, and now commercial firms and private households. A final major development that facilitated the introduction of cyberspace is the availability of cheap and good software. A programme such as Mosaic, enabling one to travel through the world wide web, has introduced many to the ease of traveling in cyberspace.

The cyberspace hype can now be found in numerous places. It can be found in the news-media, journals and newspapers paying attention to the subject. In the UK, you cannot open Thursday's Guardian without being confronted with cyberspace. You cannot buy one single computer magazine without being overwhelmed by information about it. Moreover, the media are actually being represented in cyberspace. Nearly every European country has a selection of daily newspapers offering information and daily news through cyberspace. Journalists publish their email addresses to get into contact with sources and readers, and an increasing number of job vacancy announcements include not only phone and fax addresses, but email addresses as well.

The hype can also be found in policy. Al Gore, currently vice-president of the United States, started that a few years ago by labeling the cyberspace developments with the catchy phrase *information highway* and promoting it strongly from his position in the White House. We have the European counterpart in the form of the Bangemann report. The European Commission has strongly committed itself to establish a free market in telecommunications as soon as possible. While these are basically political developments calling for an open market, they do illustrate policy's interest in cyberspace. Several Western governments are also using cyberspace to attempt to bridge the famous gap between citizens and politics. Britain (<http://www.open.gov.uk/>) and Belgium (<http://www.online.be/belgium/>) are just a few of the countries providing government information by using World Wide Web. Other groups are already thinking ahead, and see internet, once well established in every household, as a tool to replace parliamentary democracy with direct democracy.

Industry now catches up in the form of Bill Gates (MicroSoft) dreaming about his own network that reaches out into every (Western) household, to be launched jointly with Windows 95. Within most Western countries, small business companies are finding market niches and become so-called internet providers. They enable non-university based individuals to dial into the internet using their computer, a modem and a telephone connection. As competition grows among service providers and national telephone companies join in, prices drop at a considerable rate. The big break through is however not expected until 1998, when an open European telecommunication market enables cable television companies to expand their services with

telephone services, video-on-demand and computer networking.

Cyberspace all started in the academic world with a small number of universities and a small number of users, parallel with hobbyists working on small and often unreliable networks such as FIDOnet. It has moved far beyond that now with an ever increasing number of applications and an increasing number of users. It's a relatively safe prediction to state that in a few years, fa machines will only be used for the odd document or for communications with third world countries, as once was the status of the telex shortly after the introduction of the fa.

Apart from the growth in applications and users, it is noteworthy to mention the speed of the growth, which is unrivalled by previous innovations in Western society.

Cyberspace is likely to be more than a hype

Although cyberspace is definitely the current computer hype, it is very likely to be more than that. There are a few significant differences between cyberspace and the other, short-lived hypes previously mentioned. These differences make cyberspace more likely in becoming part of our lives. For one reason, cyberspace is basically low technology. It involves a number of cables, a copy of already existing shareware software and one is ready to step into cyberspace. For this reason, it is likely to attract far more people than any other high technology issue, such as artificial intelligence. For another reason, cyberspace is low costs but high profits. It is low costs because the infrastructure is minimal and the cost of one unit (receiving or sending a message) is trivial. American electronic discussion lists often see messages with phrases similar to 'here's my 0.2 \$ contribution to this discussion...', illustrating the low costs. However, the profits are expected to be high because those many small units at trivial costs add up to an enormous market. While computer manufacturers struggle to survive in a highly competitive market, telecommunication companies flourish.

Present and future stakeholders in the developments are telephone companies (telephone machines and enormous volume of calls), computer manufacturers (computers, modems and software), cable television companies (numerous calls and internet access provision) and publishers (providing information). All are expanding their existing services into cyberspace with new products that can be labeled value added network services. These may well become decisive competitive arguments in the battle for the customer's favour. .

Cyberspace: numerous applications

The current hype around cyberspace is substantiated by the existing internet as well as the prospects of many more new applications. Internet is currently the best example of what cyberspace communication can become. As a network interlinking thousand of computers and millions of users, it enables a set of applications to be used by an ever growing number of people. It's uses include first and foremost the use of electronic mail. Increasingly, business cards not only include names, addresses and telephone/fa numbers but email addresses as well. These take the format of name@place as in J.Steyaert@fz.hse.nl Electronic mail facilitates communications and is overtaking the fa thanks to its ease of use and cheap character. Moreover, one receives messages in electronic format enabling further actions on them. This is particularly useful in editorial processes.

Based on the use of electronic mail, internet consists of numerous discussion lists (listservs) on which persons with similar interests gather to exchange information and ideas. Several of these

are relevant for social work, such as the generic social work list, of special lists on fieldwork, social work students, applied measurement or philosophy science of social work, to name just a few examples. Communications through these discussion lists is characterised not only by its speed, but also by its informal nature. Status of participants hardly play a role in electronic communications and attention to messages is paid for their contents rather than the possible status of their senders. Electronic mail replaces ascribed status with achieved status. Other applications of the electronic mail include electronic journals (cutting into the market of printers and publishers, but reducing the time needed to disseminate information).

Apart from the important applications based on electronic mail, internet includes transfer of text and binary files through the use of ftp (File Transfer Protocol) and remote access to computers through telnet or gopher. The latest and very popular applications of internet is the World Wide Web or WWW. Started in 1990 by Cern in Geneva, its number of information servers numbered lower than a hundred, until the introduction of the free Mosaic software in the spring of 1993. The number of present information servers is estimated at 20.000, with more than 50 new ones every day. WWW consists of a relatively easy hypertext markup language to edit and lay-out information pages, server software (available for several platforms such as Unix, Dos or Windows) and browser software (available for several platforms, with Mosaic and Netscape being most popular at the moment). Thousands of individuals and organisations provide information on their activities or interests to an anonymous audience of internet users. The most significant feature of the world wide web is that there is no financial benefit to be gained by information providers. There is as yet no electronic cash available to charge users a fee for reading and using information that is provided by WWW sites. Information providers clearly see other benefits in disseminating their data.

Apart from these existing applications of internet, cyberspace is predicted to grow and embrace new, to be developed applications. While developments are rapidly leading to full multimedia capacities of the world wide web, the future applications will include electronic banking, video on demand (experimented with since 1994 in e.g. Berlin and Colchester, London), tele-working (raising several industrial relations issues), tele-shopping and many more. The interests of daily newspapers already being present on the world wide web is oriented towards a possible scenario of electronic newspapers that can be tailored to one's individual information needs, electronically delivered to your electronic address and only including articles that match the information profile you yourself constructed.

Cyberspace: advantages and disadvantages

Cyberspace as we now know it and as it may develop in the coming years has several advantages and disadvantages compared with more traditional ways of communications. The advantages include the already mentioned informal way of communicating and the very interactive and up-to-date communications which might endanger professional journals such as this one. A major advantage is also the free access to an incredible amount of information provided by thousands of world wide web sites.

Disadvantages are of a technical and substantial nature. Technical disadvantages presently include the lack of a good search- and reference instrument. Loads of information are available on the internet, but it might take you a while before finding it. The transaction cost of locating a needed piece of information can be substantial. As new search tools are being developed (try <http://webcrawler.com/>), these transaction costs will diminish (an August 1995 search on the

keywords *social work* resulted in no less than 6.500 references). Substantial disadvantages of internet and cyberspace include the domination of the Western world both in users and information providers, as well as the domination of English as the main language. This may be a stage in the innovation cycle of new technology, but is certainly a threat for equal opportunities of non-Western countries and non-English speaking persons.

Another major disadvantage of internet, already mentioned as an advantage as well, is the informal nature of communications. Because every individual is free to provide information through internet, either by sending electronic message to discussion lists or by providing information through the world wide web, classical quality control mechanisms such as editors, refereeing and publishers are by-passed. This implies that each user is faced with the task to assess the quality and reliability of the information on its own. While availability of information might have been a quality guarantee, it is no longer on the internet. It's no longer because information is available that any claim can be made that the data are correct and up to date. The rare examples of refereed electronic journals on the internet do not change this overall characteristic.

A final significant disadvantage of the internet is the concern regarding privacy and copyright. What happens if you participate in an electronic discussion list and raise some of your ideas, only to find them in a publication by a different person some time afterwards. The privacy issue not only includes the concern that messages you might receive or send are not read by other people than those they were intended for, but also the danger someone might distribute opinions or information in your name. Only recently, the discussion list SOCWORK distributed a message signed by Hilary Clinton originating from the address Bitch@whitehouse.gov. While the address and the contents of this message made it clear to most readers that it was not genuine, the possibility of hackers distributing mail in other's name is a concern.

Received: from hermes.hse.nl [145.85.2.2] by EMail.fz.hse.nl
Received: from hearn.nic.surfnet.nl by hermes.hse.nl (AIX 3.2/UCB 5.64/4.04)
id AA08214; Thu, 8 Jun 1995 20:38:48 +0200
Received: from HEARN.NIC.SURFNET.NL by HEARN.nic.SURFnet.nl (IBM VM SMTP V2R2)
with BSMTMP id 2228; Thu, 08 Jun 95 20:35:58 +0200
Received: from NIC.SURFNET.NL (NJE origin LISTSERV@HEARN) by HEARN.NIC.SURFNET.NL (LMail V1.2a/1.8a) with BSMTMP id 6191; Thu, 8 Jun 1995 20:35:58 +0200
Received: from UAFSYSB.UARK.EDU by UAFSYSB.UARK.EDU (LISTSERV-TCP/IP release
1.8b) with spool id 6732 for SOCWORK@UAFSYSB.UARK.EDU; Thu, 8 Jun
1995 12:27:52 -0500
Received: from UAFSYSB (NJE origin SMTP@UAFSYSB) by UAFSYSB.UARK.EDU (LMail
V1.2a/1.8a) with BSMTMP id 7498; Thu, 8 Jun 1995 12:27:51 -0500
Received: from prod1.satelnet.org by UAFSYSB.UARK.EDU (IBM VM SMTP V2R2) with
TCP; Thu, 08 Jun 95 12:27:48 CDT
Received: by prod1.satelnet.org; (5.65/1.1.8.2/04Mar95-0901AM) id AA20216; Thu,
8 Jun 1995 13:33:33 -0400
Message-Id: <9506081733.AA20216@prod1.satelnet.org>
Date: Thu, 8 Jun 1995 13:33:33 -0400
Reply-To: **Hillary Clinton** <bitch@WHITEHOUSE.GOV>
Sender: Social Work Discussion List <SOCWORK@UAFSYSB.UARK.EDU>
From: **Hillary Clinton** <bitch@WHITEHOUSE.GOV>
Subject: Clinton Defense Fund
To: Multiple recipients of list SOCWORK <SOCWORK@UAFSYSB.UARK.EDU>

Dear friends,

I am writing to you because you are government workers and you know how important government jobs are. I am asking for your help so Bill and I can

keep our cushy government jobs.

The Whitewater prosecutor just indicted Arkansas Gov. Jim Guy Tucker. He's getting closer to us every day. If he gets us who will stick up for the welfare state and govt. workers? Please send a generous contribution today.

Hillary Rodham-Clinton (worlds smartest woman)

Received: from hermes.hse.nl [145.85.2.2] by EMail.fz.hse.nl

Received: from hearn.nic.surfnet.nl by hermes.hse.nl (AIX 3.2/UCB 5.64/4.04)
id AA08420; Sun, 11 Jun 1995 01:44:11 +0200

Received: from HEARN.NIC.SURFNET.NL by HEARN.nic.SURFnet.nl (IBM VM SMTP V2R2)
with BSMTP id 3810; Sun, 11 Jun 95 01:41:19 +0200

Received: from NIC.SURFNET.NL (NJE origin LISTSERV@HEARN) by HEARN.NIC.SURFNET.NL (LMail V1.2a/1.8a) with BSMTP id 6162; Sun, 11 Jun 1995 01:41:20 +0200

Received: from UAFSYSB.UARK.EDU by UAFSYSB.UARK.EDU (LISTSERV-TCP/IP release
1.8b) with spool id 6570 for SOCWORK@UAFSYSB.UARK.EDU; Sat, 10 Jun
1995 18:33:39 -0500

Received: from UAFSYSB (NJE origin SMTPBULK@UAFSYSB) by UAFSYSB.UARK.EDU (LMail
V1.2a/1.8a) with BSMTP id 4853; Sat, 10 Jun 1995 18:33:39 -0500

Received: from prod1.satelnet.org by UAFSYSB.UARK.EDU (IBM VM SMTP V2R2) with
TCP; Sat, 10 Jun 95 18:33:33 CDT

Received: by prod1.satelnet.org; (5.65/1.1.8.2/04Mar95-0901AM) id AA05378; Sat,
10 Jun 1995 19:39:26 -0400

Message-Id: <9506102339.AA05378@prod1.satelnet.org>

Date: Sat, 10 Jun 1995 19:39:26 -0400

Reply-To: **Albert Einstein** <emc2@SMART.OLD.FART.WITH.GRAY.HAIR.COM>

Sender: Social Work Discussion List <SOCWORK@UAFSYSB.UARK.EDU>

From: **Albert Einstein** <emc2@SMART.OLD.FART.WITH.GRAY.HAIR.COM>

Subject: Hey---I can fakemail!

To: Multiple recipients of list SOCWORK <SOCWORK@UAFSYSB.UARK.EDU>

Wow!!!! I can fakemail!!!!!!

Both messages are examples of mail being distributed to hundreds of persons. In these cases, it is quiet clear the origin indicated in the computer generated part (in bold) of the message is not a real one. However, what happens to messages where fraud is less obvious ?

Cyberspace: ENITH WWW as an example

ENITH is the acronym of the European Network for Information Technology in Human services. It is an association of individuals and organisations from different European countries who are all concerned as producers, users or academicians with the way information technology is being used in the human services, specifically social work. The aim of the association is to promote the exchange of ideas, projects, information, networking, new developments and research and evaluation in the field of information technology within the social and human services. This aim is worked towards by the publication of books and articles, a quarterly newsletter, the organisation of annual European conferences and participation in the international HUSITA conferences. The newest instrument in the attempt to achieve the above aim is the use of world wide web. Since January 1995, ENITH provides information on the use of information technology in human services through it's WWW-site.

Ann,

figure 1 with the opening ENITH www page could be inserted about here.

Contents

The world wide web information site of ENITH consists of nearly 1.700 'pages' of information, available to all WWW-users worldwide. Everybody having access to WWW technology (through browsers, email or even fax) can link to the ENITH pages at the address <http://enith-www.uia.ac.be/enith>. The introduction page indicates some of the options and available information. Apart from information on ENITH itself (aims, membership, activities), this www-site offers three main features of interest to those who are concerned with the use of information technology in social work. These are a reference page to related cyberspace initiatives, a software directory and a comprehensive indexing and abstracting service.

The first of these features, the *reference page to related social work cyberspace initiatives*, includes links to other known world wide web sites or discussion lists related to the use of computers in social work, social work as such or schools of social work. While the American dominated discussion list SOCWORK has long been the only cyberspace initiative related to social work, it is nowadays difficult to keep track of all new interesting sources of information. No wonder this page is often used.

The second of the interesting feature is a *social work software directory*, based on the directory published in this journal in the previous issue. It lists human service software and describes the main characteristics of well over a hunderd software packages. The notion is that this electronic version of the software directory is maintained more regularly than the paper based version. The aim is also to link the software directory with uploadable demonstration or full-working versions of the programs. Technically, this is fairly easy as illustrated by the available software of Walter Hudson. It however involves getting permission and programs from the software publishers, which is not easy. The ENITH www-pages do already provide a link to the CUSSnet www-site, offering a variety of human service relevant North American shareware software.

Finally, the ENITH www-pages include a comprehensive *indexing and abstracting service*. This includes nearly a thousand references and abstracts to publications on the use of information technology in the human services. It is based on the work done by Don Mabey from Canada, but makes his achievements available to a great many users. It is one of the most interesting parts of the ENITH pages, but also the most difficult to maintain. While technically the whole process is quiet simple, the effort needed to track all literature, make references and write abstracts is quiet considerable. In the coming months, the references will be expanded to include not only English literature, but also Dutch/Flemish and German publications, as well as publications from the Nordic countries.

Ann,

figure 2 with the SWBIB page could be inserted here.

Production process

The production process of information for a www-site is relatively simple. It is similar to other

hypertext environments in that data needs to be fragmented into small units (called 'pages') and links or references need to be inserted between these pages and relevant pages at other www-sites. These links show up underlined or in a different colour when a reader retrieves a page, and indicate the possibility to click on the reference to jump to other pages of information. Often this includes jumping to other sites in other countries. Readers however cross national borders without necessarily being aware about it.

The lay-out of the pages can be done by any normal editor. It comes down to inserting codes to indicate title, bold, italic, references, and the like. These codes take the format of and , <I> and </I> (begin/end bold, italic) or similar codes. The editing task is facilitated enormously now wordprocessors such as WordPerfect and MS-Word include tools to write www-pages, as well as separate editors become freely available.

Overall, the production process is fairly easy and not labour-intensive. The main challenge is to structure the information into a number of pages and to search the world wide web for other relevant sites.

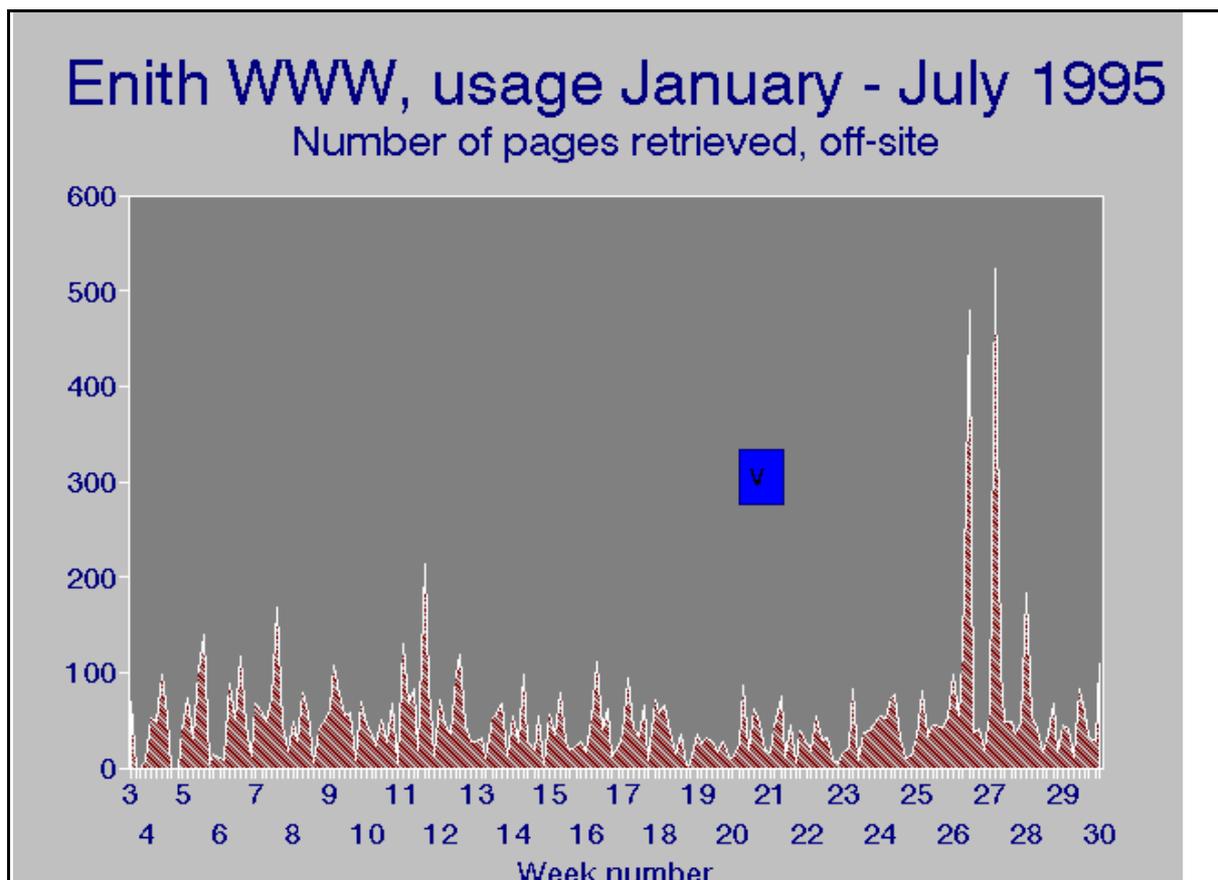
Usage

Is it being used ? This is of course a vital question for a new communication medium that draws attention for it's world wide accessibility and promises new dissemination challenges. The www-server software we use for the ENITH world wide web keeps track of usage by maintaining a log file. Each time someone from around the world retrieves a page from the www site, a line is added to the log file. In it, the date and time are noted, as well as the address of the computer retrieving the information and the name of the retrieved page. The identification of the user can normally not be deduced from the machine address, but country can.

Between the start of the ENITH www on 20th of January 1995 and the analysis for this article on 25th of July, 11.224 entries were made in the log file. Of these, 1656 originated from the developer's computer and cannot be considered usage in the real sense. This leaves of 9568 retrieved pages.

These were retrieved by a total of 976 different computers, mostly from European countries or North America with a few users in Australia and New Zealand. How many real life persons this figure represents is difficult to estimate. One computer can be used by more than one person, but similarly one person might use more than one computer during the 6 months of analysis. The figure of 976 origins of requests needs to be seen in perspective however, as only from 218 computers requests came for 10 pages or more. It is probably safe to consider computers requesting fewer than 10 pages cases of 'web surfers' or users who are only browsing through the information without actually using it. Conclusion is that the information has been retrieved from 218 computers for substantial use. Stated in non-technical language, 218 users have read our published information while another 758 users browsed through our pages. Compared to the two leading journals in this field (*New Technology in the Human Services* and *Computers in Human Services*), this is probably not too bad. One can only guess how many of these journals' copies are browsed through or actually read.

Finally, it is to be expected that usage will increase as more schools of social work and social service agencies gain access to the world wide web and the existence of this site becomes more known to potential users.



Challenges and threats for social work

The increased capacity of information provision that comes with the several instruments of internet offers both challenges and threats for social work. While access is currently limited to educational organisations and the odd service organisation, it is likely to increase and expand to all citizens once the competition between telephone and cable television companies starts seriously. One can already envisage a situation where citizens can access internet through their television set (as already done in one part of the Netherlands), thus creating a situation similar to France's Minitel, only on a more user-friendly and global scale. Such a situation would increase the importance of cyberspace developments for service providers and social work educators.

For social service providers, cyberspace challenges can take different formats. While many of these service providers now provide community information through leaflets or automated systems (as e.g. happens through public libraries in Flanders and the Netherlands), they can look forward to an easy technology to provide their information directly into the home of every citizen, thereby expanding their audience significantly. One can also think about the establishment of electronic offices through cyberspace. This is being experimented with through the use of 'information pillars' in public places. However, there is no reason not to open these electronic offices directly from homes. In this sense, a major challenge may be awaiting citizen advice bureaux and other information and referral agencies. In the Netherlands, several cities have already established an 'electronic city' in which citizens and tourists can wander around to collect information on culture as well as social services.

In the light of the international development from service provision in kind towards service provision in cash (as in care management in the UK or the personal budgets in the Netherlands), a major cyberspace application might be developed around welfare benefit calculation systems. While these now take the form of software programs operated by social service professionals, these also could be made available through cyberspace and become accessible for every household with a simple television set. The empowerment this gives to clients and citizens could be overwhelming. See <http://www.ferrit.com/> for a first worldwide example of this.

In the area of disabled and elderly, several European regions are experimenting with new alarm and remote monitoring systems, making use of cyberspace developments.

For the social work educator, as well as all other educator, the current internet and cyberspace developments open up important challenges regarding the use of distance learning and offers an excellent multimedia platform. One course organised last year on the internet drew as many as 80.000 participants. There is no longer a need to have both the educator and the student in the same room, let alone in the same country.

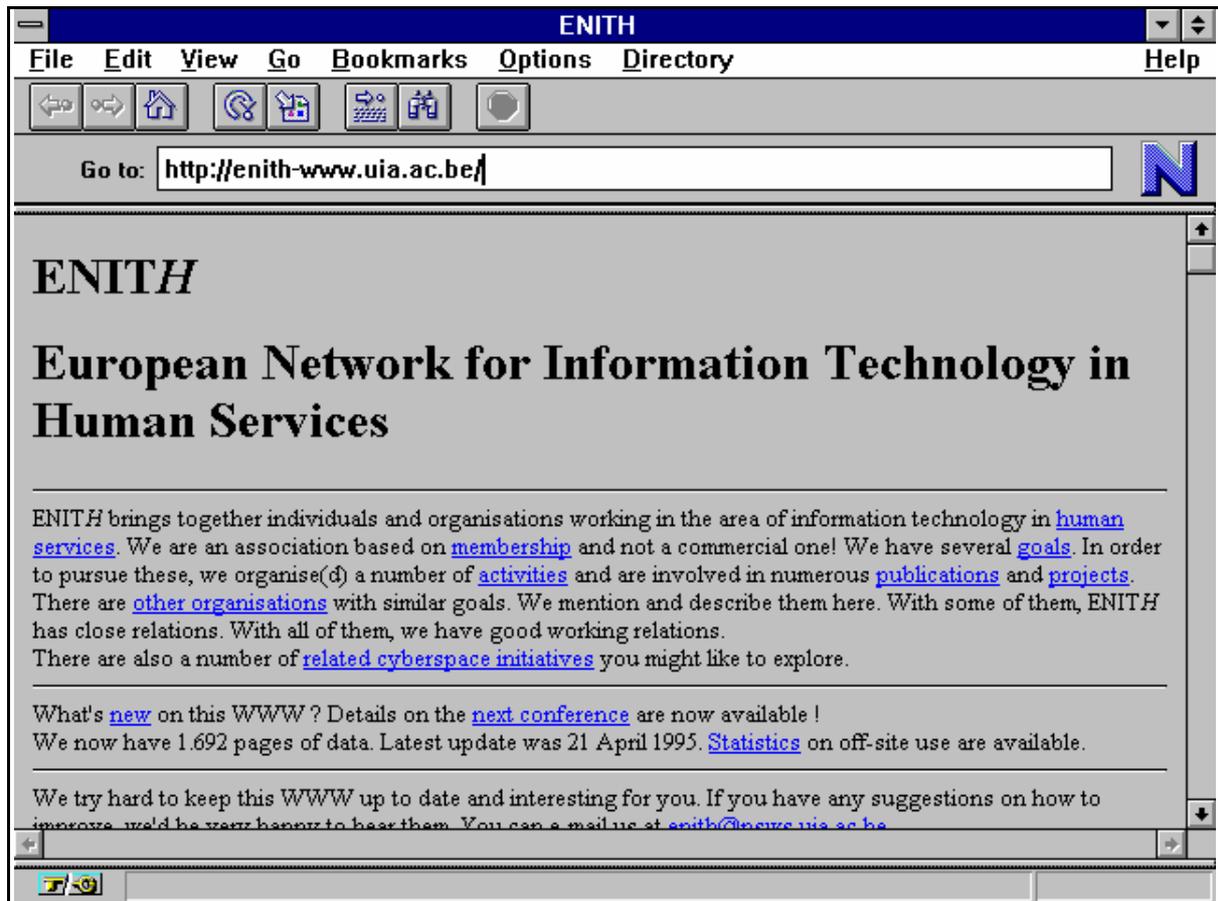
One will also have to pay attention to the new methods of gathering information for one's profession. While traditional methods of library and colleagues will keep on existing, new methods such as electronic discussion lists or thematic www-sites can become a efficient and effective alternative. As indicated earlier, the communication of knowledge through these media is characterised by its informal and interactive nature. Thereby being more close to person-to-person communication, these media may well fit better with learning styles of human service professionals.

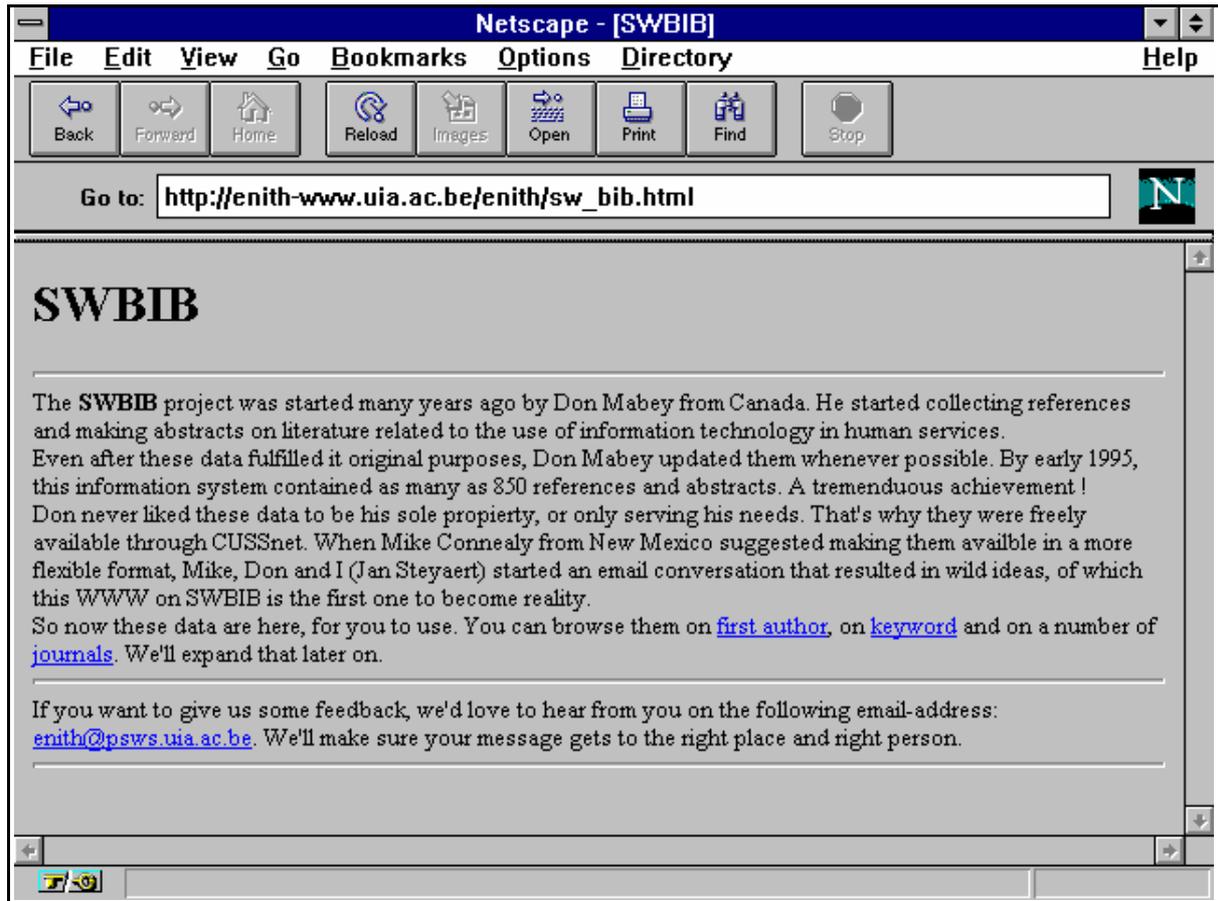
Threats coming from cyberspace developments come from the questionable privacy of information users and providers on the internet, as well as from the extreme democratic nature of cyberspace. Everyone is free to supply any information he or she seems fit, and no quality control whatsoever is available. This increases the need for users to make their own assessment about the quality of the provided information. While this was not an easy task with traditional knowledge dissemination through publications and conferences, it might prove unfeasible

through cyberspace.

Conclusion

Conclusions regarding cyberspace and its possible use by social work necessarily need to be temporarily. Current state of affairs could not have been envisaged a year ago, and who knows what next year might bring. Still, it is relatively safe to conclude that cyberspace is here to stay and will become an integrated part of our daily living very soon. As this becomes true, the number of applications in this area will grow and complement or replace traditional ways of disseminating information. This growing number of applications offers several challenges, as well as threats for the social work profession and social service provision.





i. Special thanks go to Wim Holemans and Karel Debruyne from the computer centre of the University of Antwerp for their help in establishing the ENITH *H*www-site and making the log file available for analysis.