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**The Internet and Academic freedom:
Implications for the University Library**

ABSTRACT

The principle of academic freedom is central to the true functioning of the university. It asserts the right of scholars and teachers to communicate their ideas and research results, free of interference on political or other grounds unconnected with the quality of what they might say. This includes the freedom to choose and pursue lines of investigation on academic grounds alone. The principle therefore implies the need for information services and resources for the academic community to be free of intervention on non-academic grounds. Academic librarians have recognized this need and have defended their role as providers of open and uncensored document collections and access to other resources. The Internet, as a means of obtaining a great range and quantity of information worldwide, is potentially crucial to the practice of academic freedom. However, for libraries as providers of access to the Internet and librarians as intermediaries searching the World Wide Web (WWW) on behalf of their users there are issues to be addressed. The Internet is a largely unregulated communication and information medium. It gives access to material including some which is allegedly harmful (pornography, hate speech, etc.), is unendorsed as to quality and accuracy, is of doubtful provenance and ownership, or may indeed have been created in a spirit of mischief. It also permits communication that may or may not be secure, could be used for harmful purposes and might contain misinformation. There is pressure for control of the Internet from commerce, interest groups of various kinds, and governments. The academic library is a key forum for the negotiation and resolution of these difficulties and contradictions. It is important that this is done with both a strong vision of the value of the Internet and an appropriate respect for academic freedom.

**BIOGRAPHICAL NOTE
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He researches and writes on a wide range of topics across the field of information and library studies, and has undertaken consultancy, lectured, and participated in conferences in over 30 countries. He is Chair of the Library Association's International Group (IGLA) and has held various other offices in the Library Association, Institute of Information Scientists and IFLA.

Is currently acting as a consultant for the Council of Europe on issues concerned with freedom of expression and freedom of access to information as they concern libraries and public access points to networked information. Has presented aspects of this work on behalf of the Council of Europe during 1998 and 1999 at conferences and seminars in Budapest, Paris, Oslo, Riga, Strasbourg, Munich and Helsinki, in addition to presentations on related topics in London, Berlin and Toronto. His report on Freedom of expression and the communication networks (Council of Europe, CC-Cult (98) 18,1998) along with draft recommendations on Public Access Points for Networked Information, has been available during the first half of 1999 for public consultation on the Council of Europe's Website. His other recent published work includes articles on Africa, on the history of British public libraries, and on legal and ethical issues in information work. He is joint author with Richard Neill of The quiet struggle: information and libraries for the people of Africa (Mansell, 2nd ed., 1998); and joint editor (with Margaret Kinnell) of Continuity and innovation in the public library: the development of a social institution (LA Publishing, 1996); and (with John Feather) of the International encyclopedia of information and library science, (Routledge, 1997).

Introduction

The view has frequently been expressed that libraries are in the process of becoming obsolete, to be replaced by a virtual information and communication environment. The reality is that all kinds of library, including the academic library, function very well within the electronic environment, without losing their original identity as providers of print on paper. The vision that one day soon an electronically-empowered user will not need the library continues to retreat into the future as libraries react and adapt to change. They still provide printed documents, but they use electronic means to identify the publications they need, order copies of them, catalogue them and disseminate information about them to users. At the same time they also provide workstations as access points for information in a variety of electronic formats, including the online information available via the Internet. To say that all this happens is not also to imply that this is easy for the librarian. In the first place it calls for enormous mental adjustments on the part of practicing librarians, great changes in the education and training of future librarians, and a continuing campaign to persuade parent institutions and funding bodies to rethink the financing of library and information services. There are also many very specific difficulties associated with the process of change.

The Internet, in particular, is a problematic medium. It brings new dimensions to communication through electronic mail and a host of related developments, and offers access to immense resources of digitized information from all over the world via the World Wide Web (WWW). All of this is clearly an enhancement of the academic institution's research and teaching functions. At the same time there are considerable public anxieties about the content and communication that the Internet offers. The consequences of the-

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se anxieties can be real threats to academic freedom. This paper will look briefly at the nature of academic freedom and its role in the work of academic librarians. It will then examine the nature and progress of anxieties about the Internet and the responses to these both from within and from outside the academic community. This discussion will seek to identify the dynamic behind the responses of both the official and the private sectors. The consequences of threats to the Internet for the academic library will be discussed in more detail, and suggestions will be made on the means by which the library can protect and strengthen its contribution to academic freedom.

Academic freedom

Academic freedom is a term that fills the listener's ear with positive resonance. It represents an idea to which scholars and teachers return on every occasion when there are threats to established practices and norms within the academic world. As most commonly used, it expresses a sense that the academic community consists of dedicated scholars with a special license to seek and to tell the truth, whatever that truth may be. Considerable numbers of books and articles deal with the definition, history and implications of academic freedom and just to follow the debate, providing all the necessary citations, would take a substantial article in itself [1]. The briefest of summaries is all that will be offered here. The concept can be traced at least as far back as Socrates's defense against the charge of corrupting the youth of Athens. The idea began to be elaborated in Paris, Bologna and the other European universities of the early Middle Ages. According to the peculiar circumstances of each university, the academic community sought to create for itself an area of security between the conflicting powers of Church and State. Gradually this balance became more and more clearly articulated in a vision of the university as a privileged area in which independent investigation could take place, and from which independent opinion would be expressed.

In the German universities the principle was then brought into a recognisably modern state of development. This is exemplified by the bold declaration of Christian Thomasius, in 1690, that the university should be a place of «unfettered freedom, freedom which is the very life of the spirit, without which human reason is as good as dead» [2]. The powerful German influence on the American universities of the nineteenth and twentieth centuries ensured the prominence of the principle in American academic life. Indeed, this is hardly surprising when it is so entirely in accord with the First Amendment to the US Constitution on the freedom of speech. Many strong recent statements on academic freedom originate from the USA, and the American Association of University Professors, states that:

> On a campus that is free and open, no idea can be banned or forbidden. No viewpoint or message may be deemed so hateful or disturbing that it may not be expressed. Rules that ban or punish speech based upon its content cannot be justified [3].

Elsewhere, the principle is also re-stated in ways that accord with local circumstances. For instance, a British definition, typical in its mundane practicality, expresses it thus:

> The freedom within the law [for academics] to question and test received wisdom, and to put forward new ideas and controversial or unpopular opinions without placing themselves in jeopardy of losing their jobs or privileges they may have at their institutions [4].

Perhaps the key definition of academic freedom is that contained within the Lima Declaration on Academic Freedom and Autonomy of Institutions of Higher Education, 1988.

This goes as follows:

> 'Academic freedom' means the freedom of members of the academic community, individually, or collectively, in the pursuit, development and transmission of knowledge through research, study, discussion, documentation, production, creation, teaching, lecturing and writing [5].

Various organisations have useful websites on academic freedom, and Human Rights Watch has an Academic Freedom Program, which monitors and reports on developments throughout the world [6].

For the librarian, academic freedom has had a strong and clear influence. A useful historical survey by DeVinney provides much background on the use of the principles of academic freedom to protect librarians who have become involved in controversy, even though her article is mainly limited to the United States [7]. Academic freedom should offer protection to the librarian so that the library can be developed as a resource for free and open enquiry. This implies that collections will first of all not be subject to censorship in the selection process, and secondly that there will be the fullest possible access to the material that is in the collections. Neither of these is easy. Even in the absence of a formal system of censorship, librarians may be tempted to avoid controversy by not acquiring materials on grounds of quality or relevance when the true objection is to alleged indecency, unorthodox political views, or some other disturbing content. Once in the collections, the disturbance that controversial material might cause can be limited if its presence is concealed by not cataloguing it, keeping it in a closed reserve, or restricting its circulation to a trusted group of users. The librarian's position is a vulnerable one and challenges still occur frequently.

To take just one modern instance, in March 1998 police officers visited the library of the University of Central England in Birmingham, UK, and confiscated a copy of the book Mapplethorpe, which contains photographs by the American Robert Mapplethorpe. Some of his photographs have very explicit homoerotic content, which has caused objection in libraries in the past [8]. Arguing that since the book was published in 1992 it had sold 6000 copies and was widely regarded as a work of important artistic merit, the university defended its position. More specifically, the University's Vice-Chancellor cited the concept of academic freedom, stating that:

> Any attempt to restrict the academic curriculum and the associated freedom of thought by seeking to destroy this book must and will be resisted. We will not voluntarily agree to the destruction of a book that is a significant part of the undergraduate syllabus [9].

The police did not take further action, having presumably received discouraging legal advice about their prospects of prosecuting their case in the courts against a firm and principled defence. The case is probably unremarkable to people from countries with a history of external influence on library collections (not to mention prevention and suppression of publication and other forms of control by censors). What it sums up, however, is the way the conflict between would-be censors and those who defend academic freedom continues, often with the library as a battleground. So important is the library that one academic freedom website argues that the most effective arguments and practices so far developed to defend freedom of expression in the electronic environment are those which emerge from the library profession [10].

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Fear and loathing and the Internet

The Internet is a medium that generates almost as much anxiety as in does enthusiasm. Institutions such as universities, which make very considerable use of the Internet, and service departments of the university, such as libraries and computer centres, which are providers of access to the Internet, also become focuses of that anxiety. The anxiety relates to both the information content that is available via the WWW, and the communication facilities that the Internet offers.

Information via the WWW

A number of aspects of content, particularly pornography, hate speech, and otherwise dangerous material, are a cause of concern. A 1994 study of pornography available on the Internet by Martin Rimm, of the of Electrical Engineering Department at Carnegie Mellon University, brought this to the fore. He claimed to have identified over 900,000 images with sexual content available over the network during a short period. Despite some publicly expressed doubts about Rimm's figures, they have entered public debate as benchmarks of a kind. Hate speech is also common. There are websites and Usenet groups that focus on denial of the Nazi Holocaust that resulted in the deaths of millions of Jews and other minorities. Abusive terminology is habitually used to refer to Jewish people in exchanges in such groups, and versions of the blood libel appear, often in forms familiar from the fictitious document 'The Protocols of the Elders of Zion' which has circulated in print for decades [11]. Other forms of racism, misogyny, anti-gay, anti-religious and similar abuse can also easily be encountered on the Internet. There is also publicly available information of an obviously dangerous kind available on the Internet. For instance, a bomb-making manual, The big book of mischief - the terrorists' handbook, has been available via the newsgroup rec.pyrotechnics. A Web site, provided by someone using the alias Candyman, is a collection of information on topics such as drugs, phone phreaking, techniques for killing people with bare hands, and bombs. Intriguingly, his justification for this is couched in freedom of expression terms. He claims that,

> My actions are those of a librarian or archiver of information. The action of authoring, archiving, or publishing information is protected in the United States Constitution under the First Amendment [12].

The Internet is also a means to make public other information that might remain private in the print environment. Official secrets have been made public in ways scarcely possible for the media previously available. Once posted on the Internet, a message tends to be re-posted in other Usenet groups or Web sites around the world. 'Mirror sites' in countries other than that of an original posting are frequently used to evade attempts by the authorities in the original country to suppress a particular item. The potential of this was exploited by Richard Tomlinson, a former member of the British secret service agency MI6. He wished to publish a book telling of his experiences with the agency. When the British Official Secrets Act was invoked to prevent him, he threatened to release the text on the Internet from a secret computer source where it was held in readiness for distribution. Suppression of this form of dissemination would have been virtually impossible. Defamation of an individual is also harder to deal with in a global medium with little regulation like the Internet.

There are important questions of other kinds about the quality and reliability of Internet information. All is not what it seems with electronically available information. The incident in mid 1998 when a young man and woman declared their intention to broadcast their first sexual experience together on the Internet seemed to many to be just a new

variant of exploiting sex for money. However, more careful examination of the record of the providers of the website that was to be used suggested that it was a fraud on the world's voyeurs by experienced tricksters who had no intention of providing the promised transmission. The examples of outrageous deception are numerous, but more worrying is the even more common lack of good provenance for content, and the tendency for it to be borrowed, stolen, distorted and misrepresented. The authentication which a book or journal article carries, from pre-publication peer review, scholarly apparatus which permits its content to be assessed, a well-established system of specialised publishers, extensive reviewing of publications, or even the ethics of journalism (such as they are), is absent on the Internet. Someone clearly needs to apply standards of accuracy, reliability and quality in filtering the flow of information to users. Information professionals have the skills needed to unravel this confusion, but whether they will be in a position to do this depends on institutions like universities recognising the need for their intervention.

There are also interesting paradoxes regarding the ownership of intellectual property on the Internet. Rights holders and their representatives say that digitized information is insufficiently protected. They can indeed point to hosts of infringements and a general climate of hostility amongst users towards the concept of intellectual property. Users habitually 'crack' new software products because of the technical challenge this involves. They then display their ingenuity by making these products available to all and sundry via bulletin boards. In response, the software industry has formed organisations such as the Federation Against Software Theft (FAST) to identify major sources of infringement and use the law to enforce intellectual property rights. Similarly, the unlicensed distribution of copyright-protected music via MP3 is a source of considerable anxiety to the music industry.

The paradox is that imaginative content creators no longer see the Internet as a threat, but as an opportunity to relate to user communities in completely new ways. The LINUX operating system is perhaps the best instance [13]. It was developed by a Finnish student, Linus Torvalds, as a way to offer the community of users an operating system with very high standards, which the community could test and develop according to its own needs and preferences. Its source code is freely available to anyone, though various versions of the system are developed and sold for use in specific circumstances. The whole spirit of Linux is a subversion of the proprietorial attitude of the major software companies, whose aggressive promotion of intellectual property rights is in the process of creating monopolistic control of the industry. As far as music is concerned, artistes such as the Beastie Boys and Chuck D of Public Enemy regard the Internet as a prime means to publicise, distribute and obtain revenue from their products. They are already ignoring the established distribution channels of the music industry and selling their albums and associated merchandise direct to the consumer through their own websites. The fact that these websites (and other unauthorised sites) also make some music available effectively free of charge is regarded not as an invitation to infringement, but as an encouragement to buy.

Yet at the same time the networked environment can be seen as a means of reinforcing the industry's control of rights. Password access to websites and encryption of content, coupled with secure methods of electronic financial transfer, actually make the Internet an attractive business medium for the selling of almost any kind of commodity. The selling of printed books (ordered online and delivered by post) by companies like amazon.com is one aspect of this. The publishing of books on demand, either printed and bound by the supplier or merely downloadable from an electronic database of content, is another. Intellectual property products are clearly a major form of Internet commodity. Since in

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this medium the user does not have to purchase a permanent copy of a product in physical form (book, tape, etc.) it is technically possible for that user to be charged for every instance of electronic use, however limited and transient that might be. This would be a major shift in the nature of charging for intellectual property products, and it would have enormous implications for an institution that provides public access, in the way that a library does. At present one can enter a university library and browse without cost through the whole range of available documents. These are also available for reading or loan, again without cost. This would be seriously threatened if the law were to reinforce the existing technical ability for providers of information to charge for each and any instance of access.

Communication

Parallel with these concerns over information on the Internet are similar concerns over communication through the network. Some of these are the concerns of individuals about the privacy of the messages they send. Messages can be intercepted whilst passing through the telecommunications system. Legal protection of the privacy of electronic communication, in the USA for instance, forbids external interception, but does not cover what happens within the organisation. It is not difficult for system administrators to intercept messages, or to retrieve past messages from the file stores of both receiving and sending computers. Employers and (embarrassingly) the administrators of academic institutions certainly use such means. The confidentiality of messages exchanged for academic purposes can be very important. Researchers pursuing some innovative or controversial line of investigation might very reasonably wish to keep the content of their communications as private as possible.

The user can look for privacy through encryption and this is obtainable through the use of a freely available program such as Pretty Good Privacy (PGP). The anxieties of individuals seem to be confirmed by the fact that the creator of PGP, Phil Zimmerman, was arrested and prosecuted by the FBI on the grounds that his program would be available to America's enemies, who might use it for some such purpose as espionage. As an alternative, the authorities prefer public key encryption, which offers strong protection through programs to which government agencies also hold a key – to be used 'only in emergencies'. The US Congress has debated a Security and Freedom through Encryption measure, known as SAFE. This would impose controls on the manufacture and use of encryption in the USA. No encryption product could be marketed unless it contained a feature that allowed immediate decryption of a user's messages, without the user's knowledge or consent. The British government, both before and after the change of political control in May 1997, has also investigated the licensing of trusted third parties for the provision of encryption services.

The official response to private encryption of messages exemplifies the concern of governments that Internet communication is actually too private. For instance, the use of encrypted communication for criminal purposes is said to be widespread. British police sources have alleged that people send pornography down the Internet together with the instructions as to how to use encryption to safeguard its onward transmission. The UK National Criminal Intelligence Service (NCIS) claims that hooligans who sometimes disrupt football matches in Britain use Internet communication to co-ordinate their activities. The NCIS now regularly search the Internet for password-accessible websites that may be in use for such purposes. On a larger scale, the American National Security Agency (NSA) and Britain's GCHQ are alleged to intercept enormous numbers of international messages each year, ostensibly to prevent the use of networks for criminal purposes such as drug-trafficking, pae-

dophilia and terrorism. This may, or may not, be an excuse for surveillance to identify possible political dissent. It is certainly the case that in countries where the rule of law is precarious, law enforcement and intelligence agencies habitually intercept messages, and even in countries where there is communications privacy law, permission for 'wire-tapping' can be legally obtained if good cause is shown. Universities presumably provide their faculty members and students with Internet communication facilities in good faith, but the freedom to use them without interference is far from as complete as might be wished.

Pressures on access providers

There is much pressure to impose systems of governance that would threaten the use of the Internet as a means to exercise academic freedom. This pressure is primarily directed at the content providers who create websites and newsgroups, but it also affects service and access providers of various kinds. Service providers include companies like America Online (AOL) and CompuServe that provide facilities for content providers to mount sites, and for users to access them. Access providers include the institutions like libraries that provide computers and network links so that the general public, or some broad group like members of an academic institution, can go online. At the same time the pressures affect libraries as users of Internet facilities themselves. The pressures come from a wide range of people and organisations, most of whom fear or dislike some aspect of Internet content or communication. The exceptions are the libertarians who campaign for complete absence of externally-imposed restrictions [14]. Apart from the latter, it is control that is sought, whether it be through legislation, policing, self-policing and commercial means.

Those seeking greater control of what they characterise as an anarchic medium include governments, both individually and combined through alliances and treaties; their police and intelligence services; and a wide spectrum of powerful commercial interests, not only from the media and communications sector. Much of the public polemic is, however, generated by groups with special concerns like religion, child protection or women's rights. Religious groups campaign for Internet control because of the medium's perceived domination by pornography, but also because websites carrying criticism of religious groups are quite common. The Church of Scientology, resenting criticism in the newsgroup alt.religion.scientology, actually took a series of legal actions against online critics alleging that their copyright had been infringed by material posted to the newsgroup. Child protection groups object not merely to the child pornography that can be accessed. They also allege that Internet communication is used by organised paedophile groups, and that children are lured into danger by contacts established using Internet chat facilities. Feminist groups also focus on pornography, on the grounds that it exploits, controls and demeans women. The use of pornographic images and abusive emails in the harassment of women is also cited as a reason for greater control.

Attempts to control the Internet through legislation are usually a direct response to the arguments of such groups, and the panic that they have been able to generate in the press and amongst the public at large. In the USA the Clinton government actually passed a Communications Decency Act (CDA) in 1996 that would have prevented the use of 'an interactive computer service' to 'send' or 'display' any 'patently offensive' material to a person under 18. The US Supreme Court declared the CDA unconstitutional in 1997, but there is still much legislative activity at both state and federal level directed towards Internet restriction. The Australian Broadcasting Services Amendment (Online Services) Act of 1999 was a similar measure, requiring the filtering out of sexually, racially and violently offensive ma-

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terial, and the restriction of some permitted material to adults only. Mandatory software filtering and blocking of Internet content, in some form or other, seems likely to become law in several jurisdictions, possibly including the European Union. The debate on this is outlined in a report to the Council of Europe, and the Council has also sought to influence decision makers through a 'charter' outlining principles for self-management of public access points to the Internet [15].

Where legislation has not been the chosen approach, the policing of the Internet and the encouraging of self-policing by content providers has been a significant feature. There is very strong policing of Internet access in a number of countries, particularly in the Far East, which usually relies some existing apparatus of control rather than new legislation. The policing approach is not exclusive to authoritarian regimes, however. In Britain, the London Metropolitan Police have consistently used the threat of intensified policing to encourage content and service providers to eliminate pornographic material. The dangers of this approach are obvious, for it requires material to be suppressed when neither the legislature or the law courts have ruled on whether specific items of content are illegal or not. The self-policing approach has been further developed in Britain by the setting up of an Internet industry body called the Internet Watch Foundation [16]. The IWF's activities include encouraging the public to identify possible offending material. If the IWF agrees with the opinion that the material is illegal, it encourages providers to remove it, and if necessary passes the case on to the police. With the best of motives, the IWF's creators do seem to have produced a formidable instrument of informal control.

There are also moves towards creating a more controlled and restrictive networked environment from powerful commercial interests. In the area of intellectual property law there are very important developments in process. The Draft European Directive on the harmonisation of certain aspects of copy-

right and related rights in the Information Society seeks to 'encourage creativity and investment within the EU, both of which are crucial for job creation and long term competitiveness.' The linking of creativity and investment in this way is superficially persuasive, but it should be asked if they are actually best encouraged by the same measures. It is arguably the availability of means to facilitate and disseminate works which encourages creativity, whilst investment is encouraged by the ability to control these means. Whilst the draft directive allows member states to provide certain exemption for libraries in relation to digitised works, it does not grant them the right of communication/ making available, on the grounds that this is fundamentally different from lending the physical book. Displaying an electronic resource on a screen, as part of a communication to the public, would require a specific licensing agreement. Browsing, digital copies for private study or preservation, access to a digitised service for remote users, would all be constrained in the same way. This would represent a limitation to public access of the severest kind.

Taken by itself this is disturbing enough, but there is a broader tendency towards a complete commodification of content which is even more disturbing. The negotiations within the OECD for a Multilateral Agreement on Investments (MAI), although aborted by the French government during October 1998, represent a broader trend in the global business environment that presents a significant threat to public access. The MAI proposals were intended to eliminate most barriers to international trade by the removal of restrictions on the movement of capital, provision for equal treatment of foreign firms in most economic sectors, and allowing firms to bring foreign governments before an international mediation panel. Precedents from the (very similar) North American Free Trade Agreement (NAFTA) suggested that this would undermine national regulatory systems in a way that could threaten public access both in a library and a networked environment. The

major corporations, with their great holdings of intellectual property rights in information and cultural content, would effectively be able to dictate the terms of access in national jurisdictions.

As another example of the type of problem that will be likely to emerge in a commercially-dominated environment, there are differences of opinion over data protection. The EU Data Protection Directive of 1995 is considerably stricter than anything contemplated in the USA. The EU countries are likely to enforce prohibitions on the export of personal data to countries that are considered to offer inadequate levels of protection. This would conflict with the loosely regulated electronic commerce environment favoured by the American government, as expressed in the 1998 US policy paper on the global information structure [17]. Data protection is arguably a significant part of the ethical framework for academic freedom, but it would have been hard to sustain and strengthen it in the MAI trade environment. Although the MAI negotiations were indeed brought to an end, further World Trade Organisation (WTO) discussions continue in the same, worrying mode. The Internet is an increasingly commercial medium, in a world where the restraints that governments might impose on the commercial activities of major companies are being broken down by the trend of international agreements. A number of organisations from the library sector, notably the American Library Association and the Canadian Library Association, are extremely worried by these trends. They have therefore applied for observer status at the WTO discussions in Seattle in November 1999, with a view to identifying problems quickly and moving to counter them whilst there is time.

Finally, it can be suggested that the two main tendencies towards Internet control, governmental and commercial, interact in a somewhat paradoxical way. On the one hand, the moral panic over Internet pornography is also very much a media panic, with news-

papers, television and radio, most of which form parts of major media conglomerates, pressing the case that something needs to be done. Governments are urged to take control and to assert their responsibility for what passes through the communications media. On the other hand, although the media's campaign against the Internet focuses on pornography, this same pornography is arguably the chief motor for the commercialisation of the Internet. The so-called 'adult business' on the Internet was estimated to have generated revenue of £350 million during 1998. There is also a case for saying that the development of technology like Internet chat, online video, multi-server Web hosting systems and others, has been inspired and funded by the global appetite for pornography. Librarians are obviously trying to pursue their vocation in a confusing and difficult environment, which is dominated by players whose influence dwarfs anything that the library sector can achieve.

Implications for the Academic Library

To a large extent the problems that commitment to the Internet as an information medium can create for the academic library have been left implicit in what has been discussed above. However, it is appropriate to conclude by highlighting a few of the more significant and threatening difficulties that the medium can bring. These are mainly problems of privacy and confidentiality, questions concerning appropriate use of facilities and matters concerning intellectual property.

Various aspects of privacy and security of electronic communication in the academic environment have already been mentioned. Most of these can affect the academic library in some way or other, but there is an important source of potential dilemma very specific to the library. Library management systems will normally generate comprehensive

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electronic files of information that can be used to examine the individual's use of the library. As an example of the difficulties that might arise from this, one can cite the American 'Library Awareness Programme', which began in a time when records were predominantly on paper. In 1988 it became known that the FBI was regularly asking librarians to reveal the names and reading habits of library users who might be considered 'hostile to the USA'. In some cases hidden cameras were focused on the reference desk, phone lines were tapped and library staff members were interrogated about the reading patterns of certain users. The American Library Association campaigned against the Library Awareness Programme as an infringement of individual freedom, and numerous librarians expressed their opposition. In 1989 it was revealed that the FBI had investigated over 250 librarians who had spoken out against the programme. What is more, the programme has carried on despite the opposition that it aroused. The effectiveness of such a programme is, of course, greatly increased when transactions and the records of library transactions are all electronic. Add to records of this kind the logs of Internet transactions held by academic institutions, and one can see a formidable problem for academic freedom implicit in the nature of the systems currently used.

This is an extreme example of the infringement of confidentiality to pursue inappropriate use of library facilities. The concept of inappropriate use is, however, regularly employed on a day to day basis to restrict access to networked information. Every university has, in addition to its general educational mission, certain specific educational goals in the form of the teaching programmes on which it concentrates, and the specialised research programmes to which it commits its resources. There is clearly a reasonable argument that any use of its facilities, such as office equipment, audio visual resources, libraries and Internet access, which does not apply to those specific goals may be inappropriate. Policies on

what is referred to as 'acceptable use' have been developed right across the academic world and it is possible to consult hundreds of examples [18]. They attempt to provide for situations such as the disturbance of fellow users by disturbing images and sounds (pornography is most commonly mentioned) accidentally or deliberately accessed at public workstations. This is regarded in some cases as sexual harassment. Instances, both reported and unreported, of the collection of pornographic files by members of the academic community, or circulation of such material between groups of users are widely known. Reporting of users to the police, internal disciplinary measures and a whole range of warnings and other interventions have been used in such cases. Such intervention may not seem like an infringement of academic freedom in principle, especially if the inappropriate use is actually illegal.

However, system administrators of many university and library networks also seek to anticipate and prevent such problems by permanently restricting access to certain categories of information and communication. The restriction might be on broad categories such as alt.sex newsgroups, and would seek also to exclude use of purely recreational websites. Precision in such restriction is hard to achieve, and filtering software products are often used with the aim of making the automatic blocking of content more precise. The evidence is that such products only achieve poor levels of precision, and that there is reason to regard them as threats to freedom of access to perfectly legitimate content [19]. Products currently on the market usually block access to sites which contain certain words or types of image. For example, sites can be blocked because they contain the words for sexual organs. This would certainly exclude pornography, but it would also exclude essential material for medical, social and literary research. What is more, the ambiguous nature of the English language also leads to confusion that causes the exclusion of

entirely innocent material such as recipes for chicken breasts along with the breasts of women in pornographic stories. The more one considers the issue of excluding access to certain content, the less satisfactory the whole concept seems. Librarians have struggled for years to ensure full access to print material and it is a clear step back if they are prevented from giving full access to electronic resources.

Intellectual property issues can be just as complex. As suggested earlier, there is an enormous amount of networked content which has very confused and unreliable intellectual property attribution. This is bad enough in its own right, but given the ease with which material can be downloaded and incorporated into someone's own text, this confusion is constantly multiplied. In an academic environment, the precise attribution of ownership of content and responsibility for its use is central to the whole enterprise. Libraries are arbiters in such matters, and to ensure their reputation for even-handedness must always acquire content in strictly legal fashion. Today, in the electronic environment the copyright holders increasingly rely on licensing arrangements as the preferred method of making content available to the public. This is not only a thoroughly unfamiliar environment for librarians, but in negotiating licenses they face the danger of acquiring access to content which is not only limited in scope, but has a high cost. What is more, the limitation in scope of licences looks likely to be endorsed by the new copyright measures from the EU, outlined earlier. These tendencies threaten to result in an intellectual property regime that has chaotic and confusing aspects, but within which the major rights owners are able to exercise increased control over the availability and use of their products.

Intellectual property issues are also important in dealing with student work. About half of the members of the 1999 cohort of computer science students at Edinburgh University were accused of cheating when very strong similarities were noticed in assignments they submitted. They were suspected of using an Internet site to obtain their ideas. In fact, by using software which analyses sentence structure, vocabulary, phrases and syntax, and examining the records of emails, it was found that the students had been circulating and discussing copies by email. This sophisticated form of plagiarism amongst a large group of students is an indication of the new problems that can arise from innovative, but unethical, use of the medium. Other students certainly do take advantage of the availability and ease of access to plagiarise material from the Internet. Not all are as easy to expose as the student who plagiarised a whole dissertation, complete with dedication to someone else's family and friends. The likelihood is that in the future librarians will increasingly need to assist in the delicate and frustrating matter of establishing whether the assignments that students present as their own intellectual property are indeed truly their own.

To sum up, the electronic environment in general, and the Internet in particular, offer undoubted benefits to librarians and users alike. At the same time there are very serious difficulties for libraries in the new environment. Worse than that, there are no easy solutions available. Librarians need a way through the difficulties presented by privacy, acceptable use of the Internet, and intellectual property, but this can only be found with strong, clearly-articulated policy as a guide. Developing policy is hard work, but fortunately, there is some helpful published guidance on the policy-making process – the work of Orna, for instance [20]. Within each institution, consultation, some research, discussion and preparation of carefully worded documents are needed. With good policy documentation to hand, the academic librarian should be able to face even the more difficult issues with some confidence that good solutions can be offered. However, if this sounds as if it might be a process with a clear beginning, middle and end, that is not the case. As the environment continues to change, so policy to pre-

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serve and enhance academic freedom is
likely to need to change with it. Freedom is a
condition that is always under threat and its
protection is a responsibility that never comes to an end.

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