To what extent can libraries ensure free, equal and unhampered access to Internet-accessible information resources from a global perspective?

Stuart Hamilton

PhD thesis from the Department of Library and Information Management
Royal School of Library and Information Science, Copenhagen, Denmark

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Abstract

This dissertation examines the extent to which libraries can provide equal and unhampered access to Internet-accessible information resources on a global scale. It is concerned with restrictions on access to information via the Internet in libraries, and it specifically investigates access to Internet-accessible information through web sites and online databases, and via communication-based mediums such as email. The overall aim of the dissertation is to identify a set of barriers that exist on a global scale, and to examine these barriers and assess the extent to which the international library community is able to overcome them. The research takes as its starting point the rapid growth of the Internet as an information provider in the last ten years. It takes place against a background of uncertain global security and a globalised economy that is increasingly taking advantage of Internet technologies to facilitate its operation. In light of this, the first part of the dissertation constructs a theoretical framework which allows for an examination of the role of the Internet as an information provider in a global arena where the forces of the nation state and big business are able to influence Internet development. Libraries are incorporated into this framework as providers of access to information via the Internet. The rights of library users to access information on the Internet are examined from a human rights perspective which enables the dissertation to assess differences in freedom of access to information on the Internet around the world. The second part of the dissertation empirically examines barriers to Internet-accessible information resources in light of this framework, using a combination of survey and interview work to expose differences in levels of Internet access and development across countries. These differences are then analysed to address the extent to which access barriers exist on a worldwide scale, as well as the extent to which they affect libraries as providers of Internet access. It is argued that as Internet infrastructure and use within a country develops, more obstacles to accessing information become apparent, and the extent to which libraries are able to overcome these obstacles is dependent on their ability to influence decision-making processes at a number of levels, from the local community up to levels of international governance.

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Introduction

The PhD project and the institutional setting

While there has been significant interest in freedom of access to information on the Internet in the past ten years, this topic has not yet been the subject of many serious research projects in Library and Information Science (LIS). The research that has been undertaken has been on a 'local' scale, or on a case-by-case basis (Chisenga, 2000; Moore, 2000; Moxley et al, 2004; Murray, 1998), and a global approach to the problem has been needed for some time. This need is expressed in the collaboration between the Free Access to Information and Freedom of Expression Office (FAIFE) of the International Federation of Library Associations and Institutions (IFLA) and the Royal School of Library and Information Science (RSLIS) in Copenhagen in funding a research project looking at the problems of accessing information on the Internet, from a global perspective. From the beginning of this research, two different approaches to a PhD project have therefore been reflected in every step of the work, both in terms of expectations and outputs. To understand why this has been the case, it is necessary to begin this thesis by briefly describing the roles of the two sponsors of the research.

The Royal School of Library and Information Science is a higher education institution responsible to the Danish Ministry of Cultural Affairs for education, research and development to the highest level in the field of LIS. Its main purpose is to serve as a leading academic centre, nationally as well as internationally, and to provide research-based undergraduate and postgraduate education as well as continuing professional education (RSLIS, 1999). The school itself is divided into three departments: The Department of Library and Information Management; the Department of Information Studies; and the Department of Cultural and Media Studies. This PhD research has taken place in the Department of Library and Information Management.

The PhD programme offered by RSLIS reflects the institution's policy statement regarding its main purpose and strategies. As the School's web site states, this means that its general educational perspective is "characterized by a shift from a more craftsmanship-like professional education towards the dynamic and analytical elements of a research-based programme" (RSLIS, 1999). With regards to the PhD programme, this means PhD project work should be firmly grounded in theory relevant to the subject being studied.

This theoretical approach to project work has been the cause of a slight tension between the goals of RSLIS and FAIFE. To understand why, it is necessary to illustrate the expectations of IFLA/FAIFE with regards to the PhD project. FAIFE is a core activity within IFLA dedicated to defending and promoting the basic human rights defined in Article 19 of the United Nations Universal Declaration of Human Rights (IFLA/FAIFE, 2004a). As stated on the office's web site:

"*The IFLA/FAIFE Committee and Office furthers free access to information and freedom of expression in all aspects, directly or indirectly, related to libraries and librarianship. IFLA/FAIFE monitors the state of intellectual freedom within the library community world-wide, supports IFLA policy development and co-operation with other international human rights organisations, and responds to violations of free access to information and freedom of expression*" (IFLA/FAIFE, 2004b).

The FAIFE office was established following the IFLA conference in Copenhagen in 1997. The office itself has been located at RSLIS since May 2001, thus cementing ties between the school and FAIFE. As part of FAIFE's activities for 2001-2004, it was decided to co-finance a PhD project focusing on the extent to which libraries can ensure free, equal and unhampered access to Internet-accessible information resources from a global perspective. In this respect, the project differed from the author's previous expectations of PhD research in that the topic was essentially pre-selected by a third party. Furthermore, the topic of investigation was required to be related to FAIFE's aims and objectives, strategies and main fields of activity. The finished project was to be of practical use to IFLA and FAIFE, and it was seen as adding to the knowledge base of the organisation. A key point was the expectation that a global report on the state of access to information on the Internet would be produced at the end of the research period.

From the beginning of the project it was apparent that there were two obstacles for the research to overcome – the need to produce a piece of work that met the expectations of the FAIFE office and was useable to members of the wider library community in a practical sense; and the need to meet the conditions of RSLIS with regards to completing a piece of work that would meet the criteria of a PhD and be grounded in a firm theoretical framework. In addition, there have been regular obligations to school and the office that, taken separately, would represent no additional burden on the project workload but, when combined, have led to very occasional conflicts of interest with regards to time-management. The FAIFE office has required attention in terms of reporting on the project's progress, along with contributions to an ongoing series of annual reports regarding the state of intellectual freedom around the world (IFLA/FAIFE, 2002a; 2003; 2004d). RSLIS has an accepted standard of course attendance, teaching and presentational requirements to meet. None of these obligations have ever been significant enough to threaten the project's success, but it should be noted that the work has leapt between writing for academic and professional audiences at several points (Hamilton, 2002a; 2003, 2004, Hamilton and Pors, 2003). Of course, this sort of situation can have both advantages and disadvantages, but it has perhaps proved to be more of a benefit than a burden to be shouldered.

Brief characteristics of the Internet in 2004

The context in which this research has taken place is important to note. The period 2001-2004 has seen many changes to the Internet, not least the continuation of a remarkable period of growth in the number of users. Accurate statistics relating to the total number of worldwide Internet users are hard to come by however. The International Telecommunication Union (ITU) estimates that in 2002 there were 623 million users worldwide (ITU, 2002). This number was reached after only 33 years of the Internet's existence. The Internet was born out of research carried out by the United States Advanced Research Projects Agency (ARPA) in the 1960s. Initial plans were made for the 'ARPANET', a network of computers capable of sharing information through which every user could quickly access data and programs from any location. Following this research, the earliest version of the Internet took its first steps in 1969 (Castells, 2001; Cerf et al, 2003). For the next 20 years the Internet was primarily a network for government and academic researchers. However, following the introduction of the World Wide Web and the first web browsers at the end of the 1980s and the early

1990s, millions of personal computers already in use were able to quickly and inexpensively access the Internet.

At the end of 1989, there were 1.1 million Internet users worldwide, about 86% of whom were in the US (ETForecasts, 2003). Today there are around eight hundred times as many users, equal to over 10% of the world's population. When judging these figures, it is instructive to note that in 1988 only seven countries – Canada, Denmark, Finland, France, Iceland, Norway and Sweden – were connected to the Internet backbone developed in the US by the National Science Foundation. Ten years later, according to the International Telecommunication Union, over 200 countries were connected (ITU, 2000). In 2004, users are spread unevenly around the globe and although growth rates in all regions continue to rise, large amounts of the world's population miss out on access due to infrastructure difficulties and the economic costs of wiring countries for the Internet.

As more and more countries come online, and the global population of Internet users continues to rise, the amount of information available online grows as well, creating issues for countries with traditionally closed information regimes (Boas and Kalathil, 2003). At the same time market forces are increasingly shaping the Internet's development, and payment for accessing certain online services is becoming more common, alongside an increasing regard for individuals' (or corporations') intellectual property rights (Lessig, 2002). The forces of global politics are also beginning to make their impact on the Internet as new legislation and new frameworks for development are debated at an inter-governmental level, most notably in the form of the World Summit on the Information Society (WSIS, 2004). The impact of the terrorist attacks of September 11th 2001 on the Internet environment also cannot be ignored (Privacy International, 2003a).

The cumulative effect is that the Internet is on the edge of a great change, from a self-organising, self-policing system with little form of central control to a more regulated entity where user responsibility and actor involvement is beginning to increasingly resemble the offline world. Of course, the Internet is a vast network that now contains over 5 billion web pages and it is unlikely regulation, organisation and market forces will stretch to its farthest reaches. However, this research project discusses the effects of this situation in libraries and, as libraries are wont to operate in environments regulated by law, there is a great need to examine how this new phase of the Internet will affect the library community's role as information providers for users.

Formulating the problem

This section presents the subject of the PhD and the key research questions of the project. These questions are outlined briefly below and are explored in much greater depth in the main body of the text. The aim of this section is to familiarise the reader with the structure of the dissertation and the way the research shall be presented throughout.

The subject of the dissertation is the extent to which libraries can ensure free, equal and unhampered access to Internet-accessible information resources on a global scale. From the point of view of IFLA/FAIFE, examining this subject means identifying the barriers to accessing information resources on the Internet, on a global scale, and recommending

ways in which the international library community can overcome them. This is a practical formulation of a problem, and seems to suggest a global report that can be used to inform library professionals about the problems the community faces and how they can be dealt with.

From the point of view of the RSLIS, the subject raised some immediate problems relating to scale, especially when compared with other LIS research projects taking place concurrently at the school. The global perspective of the work demanded a global theoretical framework, a framework that existing LIS theories were not best suited for. Nevertheless, the project had to have a firm theoretical base to work from if it were to be an acceptable piece of PhD-level research.

These two approaches affected the project from the very beginning by highlighting the differences in the way that individuals or organisations are likely to interpret a given situation. This is important, for IFLA claims to represent the entire international library community and yet this community is extremely varied, with differing attitudes and opinions informed by different, cultural, economic and political backgrounds (Yilmaz, 1999*)*. It is highly unlikely that a set of solutions proposed by a global report on the state of access to Internet-accessible information resources will be applicable to each and every IFLA member country.

In light of this it was realised at the beginning of the work that the project would have to be a combination of the two approaches, containing sections that would be of more use to FAIFE than RSLIS and vice versa. It was also realised that the scale of the research was too vast to be able to 'solve' the problem of unequal access to online information resources on a global scale. Instead, the project would concentrate on identifying the issues that most affected libraries seeking to ensure free, equal and unhampered access to online resources, and avoid attempts to provide solutions to these problems - while at the same time acknowledging solutions where they existed. Equally, the project would make use of relevant theories to enable the research to operate in an area with defined boundaries and to place collected data in an established context. The problems of global scale research and applying relevant theories to support it are explored in greater depth in the first three chapters.

Motivation and objective

The focus of this project is the international library community, with an emphasis on public libraries. It does not, however, ignore the experiences of academic or special libraries, and indeed takes note of the effects of the changing Internet on libraries in these spheres. The scope of the research is perhaps the most important and novel aspect of the project for LIS, for an attempt to examine the impact of the changing Internet on libraries from a global perspective has not been made before. It is a large task, but now is the moment to undertake it. The research offers LIS a marker, the chance to assess the spread and use of the Internet throughout the international library community, and an opportunity to identify the areas where libraries should concentrate their efforts to ensure a free flow of information to their Internet users.

From an LIS perspective, it is interesting to examine the ways in which the Internet is susceptible to blockages in information flow. While previous research has used ethnographic studies to look at factors influencing Internet access on a local level, a

comprehensive global examination of the ways in which accessing online information can be hampered is now needed (DiMaggio and Hargittai, 2001). Before such an examination can be carried out however, it is necessary to conceptualise the Internet as a global information system in an increasingly connected world; to look at the concept of 'access' itself; and to assess whether or not individuals everywhere have a right to freedom of access to information on the Internet.

The dissertation is concerned with the ways libraries are prevented from providing online information access to users, and how the international library community can continue providing the best quality access to information resources on the Internet in spite of obstacles. In light of this, the overall research question in this dissertation is:

- **To what extent can libraries ensure free, equal and unhampered access to Internet-accessible information resources, from a global perspective?**

The objective of the dissertation is:

- To develop a theoretical framework concerning the role of the Internet as an information provider on a global scale and how libraries fit into this framework as providers of Internet access
- To identify obstacles that libraries face in provision of access to Internet-accessible information resources
- To yield a better understanding of what issues libraries must be aware of regarding Internet access and how free, equal and unhampered access might be secured for library users in the future

This is undoubtedly a major piece of research for LIS. In many ways, the scale of the research is almost too large for a PhD project.

Reformulation of the problem into research questions

A key step in beginning the research was to reformulate the project into a series of individual research questions to be addressed one at a time. Breaking down the problem in this way helped identify areas for investigation, and methods of doing so.
The project was broken down into four broad research questions, each with a series of sub questions. The type of data required to answer the questions was identified, along with the sources for this data.

The first research question to be considered is "What is the nature of the Internet?" This question is asked in order to locate the Internet in terms of contemporary theoretical thinking about the role of information in global society. For a firm theoretical framework to be constructed, it is important to investigate the Internet and its potential within, for example, the realms of culture, economics and politics. Academic disciplines studying these realms, such as sociology, or political economics, offer a variety of theories on a scale large enough for the research project.

By identifying the Internet's current position in critical thinking, it is then possible to ask a further two sub-questions relating to the overall purpose of the research. What is the extent of Internet use around the world? What is the extent of Internet provision in libraries? By combining these more practical enquiries with a theoretical approach a

more concrete picture might emerge of critical thinking on the Internet's place in global society, the extent of the technology's reach on a global scale and how it fits into the library community's ideal of freedom of access to information.

Three types of data are therefore needed to answer these questions: a broad range of theory from scholars working in relevant fields; statistical information relating to the global spread of the Internet; and information regarding the extent of Internet access in libraries, including any variations around the world. Sources for this data include the work of published scholars and theorists on the subject, along with statistical indicators from official bodies. Regarding the Internet in libraries, an empirical investigation into the extent of use was carried out as part of the research and is detailed later in this volume.

The second research question asks "Do people have a basic right to freedom of access to information via the Internet?" The aim of the question is to put the Internet and issues of access together, and to bring in a human rights perspective. A key reason for pursuing this line of enquiry, in light of the overall research question, is to assess whether or not the Internet is something that all individuals can expect access to as a right. The question looks at this issue from a global point of view, and uncovers different approaches around the world.

For the FAIFE office, it is essential that issues relating to freedom of access to information and freedom of expression on the Internet are considered in the research, so it is important to define these terms and what they mean for the international library community. Three crucial sub-questions to be considered are therefore: what is freedom of expression? What does freedom of access to information mean? How do these concepts translate to the Internet? These questions seek to locate the Internet in a theoretical discussion of freedom of access to information, especially in relation to libraries, and allow the concept of 'freedom' to be explored in the context of the overall research question. Due to the scale of the research, it is also important to investigate any different approaches taken to freedom of access to information around the world. In light of this, two further sub-questions ask: how do attitudes to information access differ around the world? What factors contribute to this? This line of investigation will assess if there is a global standard for freedom of access to information and show what is behind any differences in attitude.

The data required to answer these questions must provide a global overview of the extent to which individuals have a basic right to freedom of access to information around the world, with particular attention paid to information on the Internet. To do this, a variety of sources are used, including the work of theorists and scholars paying attention to the Internet and human rights issues, and the responses of librarians around the world from empirical investigations undertaken as part of the PhD project.

The third research question asks "What constitutes access to the Internet?" This critical question looks at exactly what conditions need to be in place for an individual to access the Internet. For the project to approach the overall research question consistently, it is necessary to examine what access is, what it means to the user and what a provider has to do to fulfil the conditions of free, equal and unhampered access to the Internet.

To break the critical question down further, two sub-questions ask: what is meant by access to Internet-accessible information resources? What exactly are the information resources being discussed? By doing this it is possible to see if a difference exists between access to the Internet and access to online information resources. Clearly delimiting these two concepts is crucial in answering the overall research question which is concerned only with the extent to which libraries can provide access to Internet-accessible information resources. The aim of these critical questions is to identify the factors that contribute to each type of access and to define the types of information resources that libraries can provide access to.

To answer these questions data must be collected that defines the different types of 'access' and the factors that affect it. There must also be a definition of Internet-accessible information resources produced to clearly identify the services libraries supply to their users. Due to the global scale of the research, data collected should display any variations that occur due to cultural, economic and political factors present in different regions of the world. The sources for this data come from relevant theorists and experts on the concept of access, along with results from empirical investigations carried out during the project.

The final and most important research question asks: what barriers exist to accessing Internet-accessible information resources, and why? This question seeks to identify what factors interfere with the rights of individuals to access information on the Internet identified in critical question two. It also seeks to show what stands in the way of the 'access' defined in critical question three. Only by identifying barriers to accessing information on the Internet can efforts be made to overcome them, and this question seeks to not only do this, but also look at the motivation behind the creation of access barriers.

Further sub-questions pay attention to these motivating forces, asking whether or not the barriers can be categorised in any way. To what extent are barriers the result of the actions of nation states? To what extent can the effects of a globalised economy be held responsible for the creation of barriers? Questioning the actions of nation states and global business entities with regards to the Internet enables the research to keep a global perspective, both in terms of the areas investigated but also within the theoretical framework of the project.

This final research question is a key part of the project, and the data collected in answering it must contribute to a listing of barriers that restrict freedom of access to information on the Internet. In keeping with the global scale, developmental and geographical variations in barriers must also be shown, along with the forces behind them. The key data source for the identification of the barriers is existing literature on the subject of Internet access barriers, and the barriers themselves are investigated through exercises undertaken during the data collection phase of the project.

The structure of the dissertation

The dissertation is structured into seven separate chapters followed by a conclusion. While theoretical concepts are present in every chapter, the main theoretical framework of the dissertation is outlined in Chapters One and Two. Freedom of access to information, libraries and the Internet are discussed in greater depth in Chapters Three

and Four, but it is Chapters Four, Five, Six and Seven that constitute the main focus of the research – the identification of barriers to accessing information on the Internet and their effects on libraries as information providers. The conclusion brings together the findings of the research, suggests ways that libraries can make a difference to the problems of access and outlines possible areas for future research.

In Chapters One and Two the general theoretical framework of the PhD is outlined, with a discussion of the theories of Manuel Castells relating to the growth of the globalised 'Network Society'. The chapters also introduce theories from Anthony Giddens regarding the role of the nation state in an age of globalisation. The globalised economy, and especially the role of transnational corporations in it, is considered. Consequently, following the lead of Castells and other scholars of globalisation, the rise of the informational economy is outlined in order to give context to the role of the Internet as an information provider. The first research question is thus tackled in part in these two chapters. The theoretical framework is expanded further in Chapter Two with a discussion of the concept of simultaneous globalisation and fragmentation, with an emphasis on the role of the individual and the potential dissolution of shared identities in Andrew Shapiro's vision of the network society. Commentary regarding the utopian and dystopian futures of the Internet is discussed and linked with a discussion of Jurgen Habermas' public sphere. Chapters One and Two are intended to outline the global scale of the project through a demonstration of a theoretical framework suitable to such an undertaking, and, following a brief discussion of the implications for the research of the current global condition after the September 11th 2001 terrorist attacks, Chapter Two logically concludes the theoretical introduction with a restatement of the actors able to influence the Internet's development and use around the world.

Chapter Three examines two of the core concepts in the dissertation – freedom of access to information and freedom of expression. The relationship between these concepts is explored and reference made to their status as a basic human right, as enshrined in the Universal Declaration of Human Rights. In keeping with the second research question, the aim of this chapter is to explore freedom of access to information on a global scale, and the work of Geert Hofstede on global cultural differences, as well as work on recent library controversies in Cuba, is discussed to illustrate the problems of ethnocentrism and the need for cultural relativity when researching on a global scale. This chapter also introduces the role of libraries as agents of freedom of access to information, and looks at some of the methods used to regulate information flow throughout history, including copyright and censorship. The final section of the chapter looks at the role of IFLA and FAIFE within the library community, and whether or not it is possible for libraries to adopt the same attitudes to freedom of access to information worldwide.

In Chapter Four a deeper discussion of the role of the Internet as an information provider is commenced, with specific reference to its effects on freedom of access to information and freedom of expression in libraries. Particular consequences are discussed, including the effect on the librarian's traditional role as selector of materials for library users. In this chapter the third research question, regarding what constitutes access to the Internet, is answered and what Internet-accessible information resources are is defined. Following a discussion of the extent of global Internet use, the chapter draws upon empirical research to look at the extent of Internet access in libraries, in order to give some context to the findings presented in the remainder of the dissertation.

The issues raised in this chapter contribute to the identification to a fundamental barrier to information access, one that is commonly conceptualised as the 'Digital Divide'.

Chapters Five, Six, and Seven address the final, and most important, research question and are concerned with identifying barriers to accessing Internet-accessible information resources. Following on from the framework outlined in Chapter Three, these chapters show that curbs on freedom of access to information and freedom of expression can combine to create serious obstacles to accessing online information. Chapters Five and Six discuss barriers that are created by the nation state, while Chapter Seven assesses the impact of market forces on the Internet. Chapter Five tackles the direct barriers erected by the filtering and blocking of information on the Internet, provides examples on a global scale and assesses the extent of the problem in the international library community by presenting the results of empirical research. Chapter Six follows the same format, but tackles the adverse effects that the surveillance and monitoring of Internet use can have on Internet users' information seeking activities. Alongside examples of Internet surveillance worldwide, research findings are presented to show how the library community is affected.

Chapter Seven examines the increasing commodification of the Internet environment in some depth. Using the concept of the 'commons', the chapter shows how the Internet is becoming more and enclosed by the forces of the free market. A wide variety of changes are examined, from the expansion of copyright frameworks in the digital age to the increasing need to pay in order to access certain types of information. The consequences for libraries of such developments are outlined and empirical findings presented to show the extent to which financial barriers are affected the provision of library Internet services.

The findings of Chapters Four to Seven influence the final part of the dissertation, the conclusion, where an attempt is made to suggest the ways that libraries can best preserve free, equal and unhampered access to information resources on the Internet. The conclusion brings together the research findings and contextualises them in developmental terms suggesting that barriers to access appear at certain stages of a country's Internet development. In light of this, a framework for future examination is proposed whereby environmental changes can be monitored and the library community can stay informed of possible dangers to information access online.

Methodology

This section of the thesis is concerned with the techniques used to gather information for the research project and the ways in which areas and issues were investigated to assess the extent they affect the international library community. It briefly explains each method used, why it was selected and the advantages and disadvantages it brought to the research project. Special circumstances that led to the use of each method are explained where appropriate.

There were three phases of information gathering during the research. The first phase consisted of uncovering relevant information from trusted third party sources such as information technology mailing lists, established organisations working with statistical indicators (relating to information and communications technologies (ICTs) and others) and further on and offline sources that serendipitously appeared as a result of

preliminary information-seeking activities. The information gained in this phase directed the project towards areas for further investigation, as well as providing many examples of barriers to accessing information on the Internet.

The second phase used empirical methods to investigate the extent to which barriers identified in the first phase affected the international library community. This meant investigation through mechanisms such as a global survey of IFLA member countries and interviews with senior library professionals in the United Kingdom and Serbia and Montenegro. The final phase used a variety of methods to evaluate information from the first two phases, such as roundtable discussions involving library professionals from around the world; email interviews with senior IT professionals; and an open workshop format involving library and information professionals from Africa.

Phase one - Mailing lists and third party sources

The work carried out in the first phase of the research was akin to a traditional literature review, albeit a review heavily skewed towards online information resources dealing with IT-related matters. The field of information technology changes incredibly quickly, and the use of daily emails from organisations monitoring the global IT environment enabled the project to stay up to date with any new occurrences. During the first month of the research several mailing lists were subscribed to that distributed emails on a daily, weekly or irregular basis. These emails consisted of links to news stories, information sources or original academic research that concerned ICTs, intellectual freedom or human rights. The senders included established IT-related news magazines; organisations specifically concerned with the Internet and users' rights; organisations concerned with IT in developing countries; human rights organisations; national and international organisations concerned with intellectual freedom; and academic mailing lists such as the daily digest prepared by the Association of Internet Researchers.

Additionally, certain web sites (often referenced in the email dispatches sent out by the above senders) were consulted with regularity to keep abreast of the ever-changing cultural, economic and political environment and its effect on the information technology sector. These web sites included, but were not limited to: news organisations such as Reuters, the Associated Press, the BBC and CNN; English language newspapers from Europe and the US, and a variety of newspapers from Africa, Asia, Oceania and, where, possible, Latin America; and Google News, a continuously updated portal featuring news headlines from over 4,500 different sources worldwide. Stories are selected by computer algorithms as a result of many factors, including how often and on what sites a story appears elsewhere on the Web.

Online statistical sources were also called upon in order to remain aware of the growth of the Internet worldwide. Attempts were made to use as authoritative sources as possible, and work from the International Telecommunication Union, the United Nations and UNESCO were especially used for figures relating to demographics and ICTs. Details on the main sources used in the first phase of the research can be found in Appendix 3.

All of these sources have two things in common. Firstly, they are free. Over the three years of this research more online sources have begun subscription payment models, something that has particularly affected the online newspaper market. There is still a

large amount of news-related content provided online for free however, and it has been easy to keep up to date with any events in the world that are likely to have an impact on the Internet. This has been an advantage and a disadvantage for research in the area, for at times – in the aftermath of a terrorist attack for example, or a court ruling - the online environment can change extremely quickly. The ease of sending out large numbers of emails to list subscribers can also lead to information overload, and sources like the American Library Association-produced IFACTION list provide so much information that a great deal of time has been used weeding out relevant items.

The second commonality to all of these sources was that they are all in English. This greatly limits the pool of information available for the research. It restricts the viewpoint on examined areas to that of English speakers, and this, combined with the fact that the majority of regularly-published comment on information technology is from Northern America and Europe, means that a particular mindset towards issues of human rights, for example, is undoubtedly present in the sources for this research. Information on the state of the Internet in Latin America has been hard to come by, and any information gained on the Internet in Eastern Asia often has a 'western' interpretation. This is a complication of global scale research where limited resources mean that only one language is competently spoken by the researcher. On the other hand, the double-edged sword that is a lack of online content in the indigenous languages of Africa has meant that the few information resources for the continent's countries have been open for examination.

With regards to sources of statistical indicators, the key area for examination was often the number of Internet users within a given country or region. A combination of several sources was felt to give a broader picture in this area and the calculation of the user figures spread throughout Chapter Four are a result of this approach. The CIA World Factbook (2003a) is a gazetteer containing elements of basic intelligence on all areas of the world first published (in a declassified format) by the US Central Intelligence Agency (CIA) in 1971. The Factbook covers areas relating to a country's geography, population, communications, economy, transport network and military capability. It is also a useful, regularly updated source of Internet user statistics which is free to access. If there is a problem with using the CIA's figures it is that the methodology behind the collection of user figures is not revealed on the web site. To try to maintain some control over figures therefore, the figures presented in Chapter Four come from Clickz.com (formerly NUA.com), a marketing solutions company with a large section of their web site devoted to Internet statistics and trends. Clickz is used because it takes Internet user figures from the CIA World Factbook but replaces these, when appropriate (i.e. when more up to date surveys exist) with figures from the Computer Industry Almanac. This has happened for 50 of the countries that contribute to Table 4 on page 128 (Clickz, 2004). The Computer Industry Almanac does reveal more information about how it calculates Internet user statistics on its web site (Computer Industry Almanac, 2004), albeit with the disclaimer that the quality of their sources around the world sometimes differ greatly in quality. Their methodology is to collect available data on computer and Internet statistics from market research companies, associations, government agencies, computer companies and other sources and to project Internet user numbers from this.

What exactly constitutes Internet access and an Internet user is further discussed in Chapter Four, but it should be noted here that this is not an easy thing to define. There

are many disagreements amongst commentators and many missing definitions. The Computer Industry Almanac's definition, as far as is possible to tell, exists only in a $1500 report. The most authoritative definition of an Internet 'user' found during the research comes from the ITU who state that it is someone aged 2 years old and above, who has been online in the past 30 days (Internet World Stats, 2004). In contrast, a subtle but important difference can be seen at the US Department of Commerce, who define Internet users as those 3 years or older who 'currently use' the Internet (Ibid). Up to date statistics from these sources, however, can only be accessed after expensive reports have been paid for. In light of this, Chapter Four uses figures from the CIA World Factbook and Clickz.com where statistics vary from country to country and may include users who access the Internet at least several times a week to those who access it only once within a period of several months. While this means that it is impossible to declare, with full authority, which exact definition of 'user' is in play in the figures represented in Chapter Four, it is possible to take advantage of the information-compiling activities of these sources to offer comprehensive up-to date statistics on global Internet use. Future studies with better resources could consider alternative statistical sources that operate off of a standard definition of 'user', but, as Minges (2000) points out, until a standardised global test is developed, there will continue to be a variety of different calculations in the market.

Finally, population figures also come from the CIA World Factbook, and are estimates from the US Bureau of the Census based on statistics from population censuses, vital statistics registration systems, or sample surveys pertaining to the recent past or assumptions about future trends (CIA, 2003b). Internet penetration figures have been obtained by dividing the number of Internet users within a country or region by the population figures. This is a basic calculation due to the fact that population totals will include those under two years old but one that will suit the purposes of the research in these circumstances. The United Nations Population Prospects Database (UNPD, 2004) has been used to define regions of the world.

Phase two - Empirical investigations

Undertaking an empirical investigation on a global scale using only limited resources is a difficult task. The need for a comprehensive look at the international library community is integral to this project however, and an attempt had to be made to undertake some type of global survey designed to reveal differences in Internet access around the world. Circumstances dictated the need for a quick and easy way of gathering information and the circulation of an email based questionnaire was an attractive method of collecting data on issues relating to Internet access in libraries. The International Federation of Library Associations and Institutions (IFLA) provided a readymade target group for investigation, and the likelihood of co-operation was increased as a result of IFLA's co-sponsoring of the PhD project. A further advantage was that the questionnaire could be advertised as part of the IFLA/FAIFE World Report 2003 data collection process, lending an air of authority to emailed requests for co-operation.

There are many advantages of using an email approach in these circumstances. IFLA consists of 143 member countries and a postal survey would have been a daunting logistical task. However, the close connection of the FAIFE office to IFLA headquarters meant it was a simple process to gain contact details for all national library associations,

national libraries, institutional affiliates or individual members. Distributing a questionnaire via email reduces the cost and effort of sending packages through the post meaning a large distribution was possible at minimal outlay. The speed of email meant that some questionnaires were returned within hours of being sent out – a rapid and effective turnaround. The questionnaire was set up in such a way as to require minimal effort on behalf of the respondent. A Microsoft Word format was chosen due to its ubiquity as a word processing package, and questionnaires were sent as attached Word documents in English, consisting of a series of short, simple questions that used tickboxes to enable the respondent to indicate preference. The level of interaction required above the click of a mouse button and the typing of text into pre-prepared areas was hoped to be as low as possible.

There were drawbacks to the approach too. The email addresses being used had to be valid, and able to accept incoming mail. Recipients had to be computer literate, to a degree, to complete the questionnaire in Word, re-save it and return it as an attachment. They also had to be able to read English – resources demanded that the first batch of questionnaires were entirely in the English language. In the second half of the data collection period it was possible to provide Spanish speaking countries with a Spanish version of the questionnaire thanks to the translation skills of a colleague in New York.

Development and testing

Preparation for the data collection exercise began in January 2003 when the design and structure of the questionnaire was examined. It was decided that the key areas of focus would be barriers to accessing information on the Internet. This meant enquires about the extent of Internet access offered within each country, along with further questions relating to the issues of filtering of Internet access, user privacy, financial obstacles to access and the digital divide – areas for investigation that had arisen from the information gained in phase one. Questions relating to specific IFLA/FAIFE initiatives, IFLA policy implementation and intellectual freedom were also to be included to provide information for the World Report 2003.

A preliminary version of the questionnaire was drafted and dispatched to a selection of pre-testers. The pre-testers were library professionals chosen from different continents so as to judge the response of people from a variety of cultural and linguistic backgrounds. A total of six pre-testers were approached but two did not respond. Responses were received from four pre-testers in four different countries, and they supplied useful recommendations for the development of the questionnaire that were then incorporated into the final version.

The exact nature of the questions were the result of discussions within the Office, consultation with Niels Ole Pors at the Royal School of Library and Information Science in Copenhagen, and the remarks of the four pre-testers. In order to test the nature of the digital divide in the library community, Question 1 concentrated on the extent of Internet access within each country's libraries. Two types of library were listed for evaluation – public libraries and research libraries. Because it was hoped to encourage responses by keeping completion time as short as possible, it was decided to make this an opinion led question, asking the respondent to estimate the extent of Internet access within the two types of libraries. This approach was designed to keep completion time as short as possible and therefore encourage responses. While this

leaves a lot of room for subjective interpretations, an exact assessment of the extent of Internet access would require far greater investigation and access to detailed sources, and a lot of time and effort. It was hoped that by targeting senior members of the country's library community who were familiar with Internet issues the answers given would be valid, even if they were a personal estimate. The same goes for all opinion-led questions in the questionnaire, such as the second part of Question 1 which asked the respondent to nominate an initiative that would make searching for information on the Internet easier for users.

Question 2 sought to gain opinion on the extent to which filtering of online information is occurring in the international library community. The question asked for the national library association's position on filtering, as well as for an opinion on whether the use of filtering software was widespread in the country's libraries. For those countries using filtering software a list of motivations for filtering access was given and respondents asked to indicate those relevant. Question 3 dealt with user privacy and asked if libraries in a given country keep records of users' Internet activities. A second part to the question asked if respondents believed there was a link between keeping records of use and users' freedom of expression. Question 4 addressed the financial aspects of Internet use in libraries, asking if access is charged for and whether or not the state or other library authorities have made any funding available to increase the extent of Internet access within the country's library system. Question 5 sought an opinion on what the biggest obstacle to accessing information on the Internet was in the country, and offering the respondents a number of options to choose from that corresponded to the subjects of the previous four questions. Questions 6 to 9 concerned IFLA policy initiatives and

Question 6 asked if there was an existing code of ethics in the country, whether or not it had been promoted and, if relevant, when it was adopted. Questions 7 and 8 tackled the status of the *IFLA Internet Manifesto* and the *Glasgow Declaration on Libraries, Information Services and Intellectual Freedom* in the same format. Finally, under the heading 'Reported Incidents', Question 9 asked the respondents to give examples, if there were any, of library users in the country being denied access to information in the past two years. However, only Question 7, relating to the IFLA Internet Manifesto, is utilised in this dissertation.

As an aid to respondents, Questions 1 to 4 contained brief descriptions of the topics they addressed to avoid confusion. Additionally, a URL for the Internet Manifesto and the Glasgow Declaration were provided in Questions 7 and 8. A copy of the final questionnaire is included in Appendix 1.

Distribution of questionnaires

The targets for the finished questionnaire were selected at the same time as the pre-testing was taking place. IFLA Headquarters in The Hague, Holland, provided contact details for all IFLA member countries. It was decided that the ideal respondent to answer questions about the state of Internet access and intellectual freedom within a country would be a senior member of a country's library association, preferably someone who dealt with these issues on a regular basis. If such a person were unable to be identified then the questionnaire would target a respondent at a country's national library. If this proved impossible then institutional IFLA members would be targeted,

followed by personal affiliates for countries without any associations, national libraries or significant institutions.

As the contact details being provided by Headquarters could not immediately provide the ideal person to answer the questionnaire it was decided to draft a preliminary email explaining the process and rationale behind the questionnaire. The email announced the forthcoming data collection process and outlined the themes to be covered in the questionnaire. It explained the role of the *IFLA/FAIFE World Report* series and the need to collect up to date information for the 2003 report, and informed the initial respondent that the questionnaire proper would be sent out in the coming days. It asked the recipient to identify a member of their organisation best placed to answer the questionnaire, preferably a senior figure with knowledge of the identified issues, if they were unable to do so themselves. By doing this it was hoped to secure the questionnaire a better chance of success than if it had arrived without warning. As an incentive to take part in the data collection process, the email stated that 30 randomly selected respondents who completed and returned the questionnaire would receive a copy of the *IFLA/FAIFE World Report 2003* for their institution – this incentive was of great benefit to the PhD research. Finally, a deadline for completed questionnaires was stated.

To further enhance the chances of a strong response rate, it was decided to adopt a process whereby participants would be sent two reminder emails, one a week before the deadline and another one day before the questionnaire was due to be returned. These reminder emails contained details of the names of countries that had already responded in an effort to encourage respondents to return their questionnaire and not be left out of the report. In a final piece of promotion, the survey was also announced on the IFLA web site to further raise its profile.

The preliminary letter was sent to the contact email address for each country provided by Headquarters. In the initial run 86 sets of contact details for 82 countries with national associations were provided, 42 sets of details for national libraries, 23 sets for a main institution in countries not already covered and 6 sets for personal affiliates in countries without any associational or institutional members. By sending a letter it was possible to ascertain how many email addresses were valid. The letter was sent to all available email addresses in the first week of March 2003 and it was quickly discovered that of the 154 email addresses supplied, 51 (32.5%) were unobtainable. Bangladesh, North Korea and Myanmar were the only member countries not to have email addresses.

The failure of so many email addresses presented problems for the data collection exercise in that contact details were missing for a number of IFLA member countries. To counter this, Headquarters sent further addresses (e.g. for national library contacts in countries where national association contacts had already been supplied) and more contacts came from searching the appropriate web sites, or from connections gained through working with IFLA. This process of continually searching for and receiving more email addresses followed the same procedure of preliminary letter, followed by questionnaire, for each new group of contacts. It also meant that some countries received their questionnaires some time after the first batch was sent out.

The thinking behind using so many sets of email addresses was a desire to get responses from as many IFLA member countries as possible. This data collection exercise was

very closely linked to the work of FAIFE and it was important to the FAIFE office that a comprehensive report could result from the work. For example, the *IFLA/FAIFE World Report 2001* (IFLA/FAIFE, 2001) received responses from 46 countries (just over 30% of IFLA members) and it was hoped to significantly increase this figure in the 2003 report to 60%. The chance of receiving completed questionnaires from more than one country was now increased but it was decided that any duplicates could be used for control purposes and to gain extra information on the country if possible. As a large number of questions dealt with the national library association's position and policies, the questionnaire of the association was taken as the most authoritative representative of the country if more than one reply was submitted.

In total, questionnaires were sent out to 335 email addresses between 5th March and 5th April 2003. Accompanying emails were sent with each questionnaire containing full instructions on how to complete the form, along with a reminder for the form to be filled out by the best-placed person within the organisation to do so. It was also made clear that while the FAIFE office needed to know the country and organisation of the respondent, all contributions would be treated with necessary discretion and confidentiality. Individual contributors themselves were to remain anonymous - their identities only known to the FAIFE Chair and Office - unless consent of public release was specifically given. The deadline for returning the questionnaires was tight due to the circumstances the report was carried out under. The initial deadline for completion of the forms was 31st March 2003 but this was extended several times over to accommodate continuing failures with email addresses and also the mailing of a Spanish language questionnaire to countries that requested it. Delivery of the final document to be accepted took place on 12th June 2003, some 3 weeks after the penultimate returned questionnaire.

Number of respondents

Responses were received from 89 different countries. More than one response was received from 19 of these countries. This is over 60% of IFLA member countries, and almost double the number of countries represented in the *2001 World Report*. Five continents were represented, with strong representation from Africa and Eastern Europe. Regional definitions according the United Nations Population Prospects Database are used in the table below. The respondents break down thus:

Region	Number of Countries Responding
Africa	16
Asia	18
Europe	34
Latin America and the Caribbean	14
North America	2
Oceania	5

Table 1: Continental breakdown of questionnaire respondents

Problems, analysis and evaluation

Respondents generally filled out the forms correctly. There were, however, some occasional problems in sending back the completed questionnaire as an attachment that led to a handful of respondents sending their answers back via text in an email. Time and effort was spent writing emails explaining to a number of contacts how to correctly open the attachments and fill out the questionnaire. Questionnaires were also returned by fax, or scanned and then sent as an attachment. In these cases handwriting was sometimes difficult to interpret.

Language and interpretation was also understandably an issue. Several protracted negotiations took place with French speaking African countries in an attempt to get a response to the questionnaire, and future exercises of this kind should strongly consider including at least French translations of questions. A Spanish translation was eventually sent out to 22 Spanish-speaking countries and this helped increase the overall response rate. How respondents interpreted the questions is an area that is difficult to judge, and knowledge of the English language, along with familiarity with the concepts being discussed, undoubtedly meant different respondents viewed questions in different ways.

Actually receiving a response from many countries required a lot of time and effort. A lot of time was spent encouraging contacts to respond to the questionnaire and getting promises that a reply would be sent. Responsibility for the completion of the questionnaire was shifted from one person to another, or bounced from one section of a library association to the next. Also, as previously mentioned, the deadline for questionnaire responses constantly shifted. This was a result of wanting to give each recipient an equal length of time to respond to the questionnaire. With new contacts being supplied by both IFLA Headquarters and as a result of Internet searching, questionnaires were being distributed in a staggered fashion. This led to a complicated system of record keeping and required staggered reminders as well. However, in order to achieve a high response rate it was felt necessary to be generous regarding deadlines.

It must be remembered that the timetable for the creation, distribution and collection of the questionnaires was dictated by the need for the FAIFE Office to edit, print and launch the completed *World Report 2003* (IFLA/FAIFE, 2003a) at the IFLA World Congress in Berlin in August 2003. Crosschecking of information gathered from the questionnaires was severely hampered by constraints on resources and delays in responding. Where possible, information relating to the adoption and implementation of the *Internet Manifesto*, the *Glasgow Declaration* and codes of ethics was checked against URLs provided by respondents and information available on IFLANET. Duplicate responses from 19 countries were also valuable for comparing information and identifying areas of confusion which could then be clarified through consultation with relevant library association web sites. In general, however, the information contained in the responses stands on its own as a statement from an identified IFLA member within each country. Given more time, the responses would have been checked against ICT indicators (where available and relevant) as well as human rights organisations' reports into freedom of access to information and freedom of expression within each country, but this was sadly not possible.

Interviews

While the questionnaire enabled a comparative survey to be made of Internet access in libraries around the world, one-on-one interviews with relevant professionals allowed a more nuanced and in depth discussion of some of key areas raised in the research. One of the problems of research on a global scale is that choosing a representative sample of interviewees is hindered by restrictions on travel, time and resources - as well as language skills. This meant it was not possible to interview library professionals from all over the world, but it was feasible to speak to senior library and information professionals in a formalised setting in the United Kingdom and Serbia and Montenegro. That interviews occurred in these two countries is simply a result of the connections of the author and opportunities taken during attendance at an academic conference in Belgrade. Details of interviewees can be found in Appendix 2.

In 2002 a series of 'test' interviews were carried out in London in preparation for work in 2003. In light of these, the interview format consisted of 45 minutes to 1 hour of open-ended conversation, starting with a set of prepared questions relating to Internet access barriers in specific work environments and broadening out to a general discussion of barriers within the library and information profession in general. Interviews took place with four subjects in the United Kingdom in April and May 2003, and with two subjects in Belgrade in September 2003. Conversations were digitally recorded and later transcribed. The flexible approach of an open-ended interview yielded useful anecdotes about the experience of librarians regarding the Internet, along with an idea of how the profession has coped, and will cope in the future, with the medium. The format had the advantage of being able to explore subjects in depth and at comparative leisure, but the fact that interviewees were only drawn from two countries on the same continent – albeit two countries with contrasting levels of Internet development – meant that generalising from interview findings was impossible. Nevertheless, the interviews yielded useful information and further sources for investigation.

Phase three - Evaluation methods

The first phase of data collection revealed areas for investigation and examples of access barriers; the second empirical phase allowed for examination of these areas and examples within the international library community. Both phases contributed to the formation of tentative hypotheses regarding the extent and effects of Internet access barriers in libraries. The third phase of investigation used three methods to test and evaluate these hypotheses and solicit third party opinion on the extent to which libraries and librarians were affected.

At the IFLA World Congress held in Berlin in August 2003 two roundtable discussion sessions were held to present the findings of the PhD research at that point. The sessions lasted two hours and 14 library and information professionals from all over the world attended. During the sessions, the access barriers identified in phases one and two were explained and comments and opinion were sought on whether or not those attending recognised and agreed on their existence and threat. These sessions were a chance to discuss the research with professionals from a variety of different backgrounds. It was also an opportunity to see how librarians from developed and from developing countries

viewed the identified barriers, and whether or not the extent of a country's Internet development played a part in their existence.

The sessions proved to be extremely helpful in focusing the final stage of the research and formulating tentative conclusions on the findings so far. By opening up the work for comment flaws in thinking were exposed and able to be rectified, while other arguments were reinforced through the participants' acceptance and recognition. Furthermore, nearly all participants were able to contribute some sort of anecdote relating to the problems of Internet access in a library, something which gave concrete form to previously hazy assumptions. While the barriers of language were again an issue (the sessions took place exclusively in English) the session was lucky enough to have English-speakers from all over Europe, Africa and Asia, as well as professionals with experience of working in Latin America.

Following the roundtable sessions it was possible to revisit parts of the research and refine certain arguments. In a further evaluation exercise three email interviews were carried out explaining the model presented in the Conclusion and asking for feedback and opinion. One interviewee was unable to return any information, but two replies from senior information professionals in North America and India were able to contribute with detailed responses to the project's findings. The email interviews consisted of three pages outlining the main findings of the dissertation – as discussed in Chapters Four, Five, Six, Seven and the Conclusion – and six questions related to these findings. The questions asked the respondent for comment on the way the dissertation frames the digital divide; the extent to which the respondent recognises the remaining identified barriers; whether or not there are any further barriers to consider; the appearance of barriers at different stages of Internet development; the greatest threat to the Internet on a global scale; and the partners libraries should look for to overcome access problems.

The advantages of this method were that it was possible to ask very targeted questions and receive very specific information relating to the findings of the research. However, with only two replies, even if they were from different parts of the world, the responses were unavoidably narrow in their viewpoint. To temper this, the final evaluative activity was able to get a broader view on some of the issues thanks to the number of people involved. In July 2004 a workshop was held at the Standing Conference of Eastern, Central and Southern African Library and Information Associations (SCECSAL) in Uganda to examine the issues surrounding the IFLA/FAIFE Internet Manifesto (IFLA/FAIFE, 2002b). As part of this workshop, the dissertation findings were presented and an hour was allocated for participants from all over Africa to comment on barriers to accessing information on the Internet. Comments were recorded and transcribed, and can be found in Appendix 4. The participants were senior library and information professionals from all over the continent who were able to illustrate their problems with reference to experiences within their libraries. The stark differences in the problems facing developing countries vis a vis the developed were made clear in this session and, where necessary, thinking in the dissertation was able to be revised accordingly. The workshop format, with an open microphone approach, was a highly successful way of gaining a wide range of comments from a specific region, and it would have been to the advantage of the research if such an approach had been able to be repeated in all regions of the world. Unfortunately, time and resources could not stretch to such a programme, but the success of the session in Africa at least allowed the

research to adopt a more global perspective rather than relying too heavily on the input of American and European colleagues.

Conclusion

The data collection methods described above represent a good set of tools for the researcher working on a global level. As with all research however, more time and more resources may have yielded more information. Generally though, the main problem for the data collection process has been the question of scale and how to use processes that can adequately generate findings on a global level. These issues are discussed in greater depth in Hamilton (2003). For example, the dangers of ethnocentrism are present in all attempts to generalise findings of global level research, and much effort has been made to adopt an approach which stresses cultural relativism. Additionally, it should be recognised that efforts to collect data have been at times caught between the two stools of the research's co-sponsors, a situation clearly seen in the rigid timescale under which the global survey of library associations took place. As with much of the research, the need to fulfil obligations to one sponsor while at the same time trying to balance requirements for the other proved, in the end, to be more of a benefit than a burden, although it cannot be denied that printing schedules, for example, meant that additional pressures were felt at certain times.

Despite this, the three-pronged approach to the data collection process has provided the dissertation with a wide-ranging selection of information. The mechanisms used in the first phase enabled the research to stay abreast of current events in the field of ICTs, along with providing a great deal of information that enabled the answering of the main research question – what barriers exist to accessing Internet-accessible information resources and why? Resources such as the daily email bulletins from *Wired* or The Association of Internet Researchers also meant that any new online information resources, or research into any facet of the Internet, were flagged early enough to come to terms with and analyse its importance for the research. Empirical analysis in the second phase, coupled with evaluation in the third, meant that findings were identified and then discussed among information professionals in order to test their strength. While these two phases undoubtedly contributed to the main research question, they also focused on the concept of 'access' and therefore helped answer the third research question. Information from all three phases can be found from Chapter Four onwards, but a particular emphasis on the findings of the third phase is present in the conclusion, alongside a model of Internet development and access barriers that is a product of all methods used.

Chapter 1 – The 'Information Society' and the Nation State

Introduction

This chapter outlines the general theoretical framework of the PhD. Beginning with a brief revisiting of Daniel Bell's theory of post-industrial society, the chapter proceeds to construct a theoretical framework that uses thinking from scholars working on a scale large enough to support global level research. Bell is an important place to start, given his concentration on the increased presence of information in society, but the chapter brings in work from Anthony Giddens, Jurgen Habermas and Herbert Schiller that can adequately provide a background against which the Internet as an information provider can be judged. Following this, the work of Manuel Castells is explored to highlight the parts of his theory of the network society that can be utilised in the research. The work of all these scholars regarding information - and how it has changed society - is examined in the first part of this chapter, and further reference to their work is made in Chapter Two.

The main focus of Chapter One is on how information, and in particular the role of information in modern society, can be influenced by the forces of the nation state. This is done by first outlining a brief history of the information technology revolution and its implications for communication, and then by showing how the nation state has developed over time to use available technologies to manage information flow regarding their populations. Giddens' work on modernity is explicitly referenced in this section, and the relationship between the state, industry and the military is explored to show how the interests of these actors converge.

Although the Internet itself is not explicitly examined in this chapter, concentrating on the nation state lays the groundwork for an exploration of the first research question. The aim of this Chapter is to give context to the role of the Internet as an information provider by providing an introduction to an actor, the nation state, that is able to make political and economic decisions on a global scale. Chapter Two complements this approach by concentrating on the globalised economy and the coming of the Internet. Taken together, the two chapters seek to construct a theoretical framework against which information flow on the Internet can be studied.

The 'Information Society' and 'Post-industrialism'

When considering a theoretical framework for a study of Internet-based information access on a global scale, it is impossible to ignore the influence of Daniel Bell's theory of the Post-industrial Society (Bell, 1973). Information[1] and knowledge[2] are central to post-industrial society; the new society is characterised by the heightened presence and significance of high quality information. Consequently, the terms 'post-industrial society' and 'information society' are widely regarded as interchangeable (Webster, 1995).

[1] For the purposes of this discussion it is appropriate to use a definition highlighted by Castells in *The Rise of the Network Society:* Porat's (1977) idea that information 'is data that have been organised and communicated.'

[2] Again, in this discussion, knowledge is "a set of organised statements of facts or ideas, presenting a reasoned judgement or an experimental result, which is transmitted to others through some communication medium in some systematic form" (Bell, 1973, p175)

There is a traceable historical pattern present in the work of Bell, moving from pre-industrial society, through the industrial revolution and industrial society to the current age. This distinct trajectory and chronology gives the impression that all societies are undertaking a journey towards post-industrial society. The key factor to change is rationalisation and associated increases in productivity caused by advances in technology[3]. Pre-industrial society ended with agricultural advances that led to a surplus of workers who went to the city to work in factories. The end of industrial society came about when advances in industrial production techniques led to greater profits and a worker surplus that moved towards service industries. In post-industrial society new jobs in the service industry fulfil the needs and desires that new wealth generates. Ultimately, argues Bell, once a mature post-industrial society is achieved the rationalisation that led to job losses in pre-industrial and industrial society will disappear; automation cannot be increased in many parts of the service sector, in social services, for example, so rationalisation is unlikely to have severe repercussions. Services will continue to increase as more wealth/productivity is squeezed out of agriculture/industry and with the coming of post-industrial society mankind will "reach an end of history as regards to job displacement caused by technological innovations" (Webster, 1995, p36).

Information is key to the whole process that leads to post-industrial society. In pre-industrial society work is best accomplished with a predominance of muscle and brawn; success in agriculture requires the taming of nature, to an extent. In the industrial society machines predominate as they tackle pre-fabricated opponents in the form of factories. Once the post-industrial age is reached, however, services predominate and muscle power and machinery are not as important as information in a process of working with people. In post-industrial society there is more professional work, more of a role for intellectuals, more importance placed on qualifications and more person-to-person employment. The role of information and knowledge is promoted, along with the impulse to plan and the impulse to care – all of which leads to a communal society in which the needs of the community are met. In post-industrial society, Bell believes that life concerns the shift from economizing (maximisation of return for self-interest) to sociologizing (judging of society's needs in an acknowledgement of the 'public interest'). This is a superior form of society, a new society and a definite break with the past.

Bell's claim that technology has been the basis of new productivity and the transformation of society can be criticised on the grounds that he is essentially saying technologies are the decisive agents of social change. This is technological determinism and is problematic in social science due to the double-sided claim that technologies effect social change while at the same time being aloof from the social world. The technologically deterministic slant is troubling for Bell's theory, as is his refusal to accept an interconnectedness within the structures of society. Bell splits society in three: the social structure, the political and the cultural – and argues that post-industrial society comes about through changes in social structure. According to the theory, these three sectors are independent, not organic, but Bell highlights trends – increased numbers of professionals in post-industrial society for example – that will undoubtedly impact on

[3] In this instance, technology is defined as 'The use of scientific knowledge to specify ways of doing things in a reproducible manner' (Castells, 2000a, p28-29)

both the social and political structures, if not the cultural. Furthermore, the historicism of his approach, in which the trends of history are identified in order to predict the future, is suspect, and the teleological approach of the march towards post-industrial society is also open to question. In Bell's account societies move in a pre-determined journey from agriculture to industry to post-industry, meaning that a move from an agriculturally based society to a society specialising in the provision of services is somehow unfeasible. This idea seems dated in an age when the information technology industry is routinely moving information technology jobs from the developed to the developing world (BBC, 2003a). It is unsuitable for the research framework, in that it creates too rigid a background for the movements of global society to take place against.

The informatisation of society

For Bell, post-industrial society is characterised by the heightened presence and significance of information. His thinking, however, overlooks the previous role of information in agricultural and industrial societies, and it is difficult to prove the break in society needed to visualise the 'information society'. Instead, a more subtle approach is needed, incorporating the heightened importance of information in society, but also acknowledging continuities with the past. An alternative to the information society can be found in a thread that runs through the work of Anthony Giddens (1989; 1990), Jurgen Habermas (1989) and Herbert Schiller (1996). These scholars assert that the world today is seeing an 'informatisation' of established relationships. This means that information has a heightened presence in society and the flow of this information has a special significance for individuals, businesses and governments, all of whom are adjusting to new information technologies and the opportunities they brings with regards to information access. In opposition to Bell, however, the form and function of information is still subordinate to long established principles and practices. This means that the heightened presence of information does not constitute the dawning of a new age and that the central feature of the present is the continuities it has with the past.

For the sociologist Anthony Giddens, all societies have been information societies since their beginnings (Giddens, 1989). Giddens' work explores the differences between traditional states and modern societies, which are discussed in greater depth below. In order to fully assess whether or not a definitive break has occurred in society as a result of a greater presence of information however, this section must concentrate on the era of modernity – which Giddens takes to have begun from around the 17th century onwards. In the era of modernity, he argues, information and communications are very closely linked. Information is certainly central to developments in modern society, but its importance is not a novelty. Its centrality is a result of the need, in modern society, for nation states to achieve a level of administrative co-ordination not seen in pre-modern states. This level of co-ordination would not be possible without the pooling of knowledge facilitated by new communications technologies, whether those technologies were Internet-based or something more basic (Giddens, 1990). Indeed, one of the features of the modern state or organisation is the systematic study and utilisation of materials relevant to their own reproduction – in short, a reflexively monitored system of production, which in turn requires information gathering, storage and control of information. Giddens terms this information gathering *surveillance*, and he sees it as the only way to overcome the complex organisational problems present in modernity (Giddens, 1989). Noting that organisation and observation are two sides of the same coin, and that surveillance is equally important to the political, economic and military

sectors, he suggests that while an increase in information has not changed society into Bell's post-industrial society, the spread of surveillance in modernity could be said to account for the informatisation of society (Webster, 1995).

For Jurgen Habermas too, there is more information available in society (Habermas, 1989). The quality of this information, however, is declining fast, and too much of it is tainted to constitute an 'information society' – if such a society does exist it is disproportionably controlled by the powers behind advertising, public relations and 'spin'. In *The Structural Transformation of the Public Sphere* (1989), Habermas discusses the existence of a public sphere in 18th and 19th century Britain. Created by the spread of capitalism, the sphere was an arena dedicated to rational debate that was independent of government control (even if in receipt of state funds) and autonomous of partisan economic forces. The sphere was accessible and examinable by citizens through such mechanisms as records of parliamentary debate, or the communications media of the time. Information, therefore, is core to the sphere. Habermas' idea is that by the mid to late 20th century this sphere had declined due to an increase in unreliable and distorted information that prized opinion over reasoned judgment. The phenomenon of information management is identified as the culprit in this decline, with governments disseminating or restricting (censoring) information as they see fit to manipulate public opinion and retain social control. Equally, the corporate sector can be singled out for an increased commitment to tackling information issues, with Habermas pointing to the increase in the political mobilisation of businesses, the growth of public relations departments to disseminate information advantageous to companies and to minimise danger, and also the great increases in advertising expenditure since the Second World War.

Habermas, therefore, is not denying an increase in information in society but he is adamant that this increase does not signal a clear break with the past in the way that Bell posits. He is concerned chiefly with the quality of information being made available to people and the influences behind it. In this, he is similar to Herbert Schiller, the American political economist. Schiller's work examines the centrality of information behind the scenes of the cultural industry in the 20th century (Schiller, 1976; 1996a; 1996b). Schiller is convinced there is more information circulating in society, but he goes as far as to call this an information glut that diverts attention from an "invisible deficit of socially necessary information" (Schiller, 1996b, p15).

The true importance of information is to be found in its centrality to ongoing developments, with information and communications being core elements in established capitalist behaviour. Schiller accepts that it might be argued that information plays a greater role in capitalism now, but he argues that it has not changed any central concepts or displaced any established priorities in the capitalist system (Webster, 1995). Instead, information, in economic terms, remains subordinate to corporate needs – primary among which is the need to maintain the existence of the corporation. Similar to Habermas, Schiller points to the way corporate capital manages and develops information within the economy, whether it is by producing relevant information in areas where opportunities for gain exist or by commissioning research and development projects for commercial reasons. He states:

"*What is called the information society is, in fact, the production, processing and transmission of a very large amount of data about all sorts of matters – individual and*

national, social and commercial, economic and military. Most of the data are produced to meet very specific needs of super corporations, national government bureaucracies, and the military establishments of the advanced industrial state" (Schiller, 1981, p25)

What can be seen in the work of Schiller and Habermas, and in Giddens' examination of nation states' need to control, gather and store information, is a willingness to look behind the increases in information generation and confront who is creating it and why. Daniel Bell's teleological approach on the other hand misses some of the subtlety present in these accounts. Placing technology at the centre of productivity and emphasising society's move from self-interest to public interest does not stand up well to Habermas and Schiller's accounts of the informatisation of society. By rejecting Bell's theory and embracing alternative insights into the generation of information, this research is able to deal more effectively with the realities of global society, notably the changing political and cultural situations around the world and the effect these have on the flow of information on the Internet. It can encompass the forces behind the creation of barriers to accessing information and allow for unplanned factors such as the terrorist attacks of September 2001.

The 'Network Society' and informationalism

The following section examines the work of one of the most influential recent scholars to tackle the role of information at the beginning of the 21st century - Manuel Castells. In his Information Age trilogy (Castells, 1997; 2000a; 2000b) he makes the case for the arrival of the network society, a new social structure associated with a new mode of development – informationalism. If Giddens, Habermas and Schiller assess information flow in, to a large extent, pre-Internet history, Castells' network society takes as its starting point the turbulence of the last 25 years of the 20th century. The global spread of capitalism and the fall of communism are key to understanding this period, as regions rise and fall in terms of economic and political influence and the north and south race apart in terms of development and shared wealth. Furthermore, criminal activities are increasingly globalised along with the threat of terrorism, while interactive computer networks grow exponentially facilitating the emergence of new forms of communications. Castells is proposing that all major trends of change in this new world are related - and that some sense can be made of them

For Castells, the network is "a world of global flows of wealth, power, and images, [where] the search for identity, collective or individual, ascribed or constructed, becomes the fundamental source of social meaning" (Castells, 2000a, p3). Society is increasingly structured around a bipolar opposition between the network and the self, leading to people basing their meaning not around what they do, but who they believe they are. It is a fractious society; when communications break down or when there is a conflict between function and meaning, social groups and individuals become alienated from each other. The other becomes a stranger and eventually a threat. The same society produces cults, extremists, and religious fundamentalists.

The network society is born in California during the 1970s, a time when there existed an emphasis on interactivity, networking and progress that came from the 1960s libertarian spirit. Theoretically, technology is still the point of departure, especially the information technology revolution discussed in some depth below, but technology does not determine society or vice versa. From the technological advances made at this time

comes the diffusion of technologies into global society along with explosions in a wide variety of unseen uses. In a reflexive way, feedback from these uses flows back into technological innovation and begins the process again. For Castells, the Internet - a technology that cannot be controlled from the centre - is the prime example of a network technology that is capable of facilitating groups as diverse as the Zapatistas, Falun Gong, anti-globalisation protesters and Al-Qaeda.

Despite this, the state can suffocate technologies too, or master them to accelerate technological modernisation. It is this ability to master technology, especially strategically decisive technologies, that shapes the destiny of an historical period. In the network society, technology embodies the capacities of societies to transform themselves. Using the example of China's innovation up until 1400AD, a period followed by nearly 600 years of technological conservatism, it can be illustrated that that the state/society relationship can induce different technological trajectories (Castells, 2000a). When it is considered that state intervention can go both ways - hold you back (China) or push you forward (Japan at the end of the 19th century, after being held back) – it is apparent that in some cases the role of the state, therefore, can be decisive. In light of this, Castells believes the new network society is emerging from considerable variation in different countries "according to their history, culture, institutions and their specific relationship to global capitalism and information technology" (Castells, 2000a, p13)

Castells' work studies the emergence of a new social structure associated with a new mode of development – informationalism. History is being shaped by a restructuring of the capitalist mode of production at the end of the 20th century. In Castells' theory, societies organise around human processes structured by historically determined relationships of production (the action of humankind on nature, the appropriation and transformation of it to obtain a product, consumption of same, accumulation of any surplus for investment, all according to various socially determined goals); experience (the action of human subjects on themselves, in relation to their social and natural environment); and power (the relationship between human subjects that imposes the will of some onto others. Social institutions are built to enforce power relationships in each historical period including controls, limits and social contracts).

Production is organised in class relationships, experience around gender/sexual relationships and power is founded on the state and the institutionalised monopoly of violence, and through the diffusion of power throughout society via institutions and organisations. There are two modes of production: capitalism and statism – these modes determine the appropriation and uses of surplus. The production process is characterised by the technical relationships of production, and the technological arrangements - which ultimately determine the level and quality of surplus. The modes of development are defined by technological arrangements and until the coming of the network society they consisted of the agrarian mode, where surplus was determined by increases of labour and natural resources and the industrial mode, where surplus was determined by the introduction of new energy sources.

In the network society, Castells argues for a new mode of development, informational development, where surplus is determined by the technology of knowledge generation, information processing and symbolic communication. The action of knowledge upon knowledge itself – this is the main source of productivity. An example of this can be

seen in the way the Internet provides positive externalities for its users. Contributing to information flow on the Internet can enable subsequent production at a lower cost by the original information providers or others – a positive feedback effect. Cooper (2004) calls this the Internet's 'network effects'. Therefore, if industrialism aims towards economic growth and maximising output then informationalism aims towards technological development and the accumulation of knowledge. In such a mode of development libraries, as providers of access to information, may have a key role in ensuring all members of society have access to the benefits.

Technology and technical relationships of production diffuse throughout all social relationships and social structures. They penetrate and modify power and experience, thereby shaping all social behaviour including symbolic communication. Consequently, new forms of social behaviour, social control and social change can be expected. Castells believes the network society is experiencing a deepening of capitalist logic that leads to 'informational capitalism'. His thinking on the globalised economy is explored further below, but this new form of capitalism has many features including an enhancing of productivity of labour and capital; a globalising of production, circulation and markets; a marshalling of state support for the above, often at the expense of social protection and public interest regulations; and flexibility, adaptability, restructuring (Castells, 2000a). Of course, societies have reacted differently to the demands of technological innovation and the changes in the global economy, so it would be unwise to assume that everyone lives in an 'informational society'. There are some common fundamental features but no large-scale homogenisation and universal modernisation. However, Castells maintains that all societies will be affected.

The information-technology paradigm

The centrality of information to Castells' conception of society and those views of society espoused by Giddens, Habermas and Schiller is very clear. Giddens sees information as key to surveillance processes present in modernity. Habermas is concerned with the declining quality of information available in the public sphere. Schiller argues that information, while central to ongoing developments in global society, is sub-ordinate to corporate needs. For these three scholars, information flows are a requisite of a globalised economy, particularly the financial and service networks which tie together and support dispersed activities. Information is central to the management and control of both nation states and transnational corporations, both within and without their borders/organisations. Information now plays a more integral part in work practices, at once because computerisation has pervasive effects and also because there has been a noticeable increase in the information intensity of many occupations (Webster, 1995).

For Castells, on the other hand, it is the combination of information and technology that is at the very core of the network society, creating the driver behind a new mode of development – informational development, where surplus is determined by the technology of knowledge generation, information processing and symbolic communication. The informational capitalism system that Castells outlines relies on information and communications technologies to enhance productivity of labour and capital, globalise production, circulation and markets and remain flexible and adaptable at all times.

To fully understand the centrality of information in theoretical conceptions of global society it is necessary to examine the changes in information and communications technologies in the 20th century. Castells has called the end of the 20th century a rare interval in history, where material culture was transformed by the work of a new technological paradigm organised around information technologies. During this period, technologies began to converge in microelectronics, computing, and telecommunications and broadcasting. While indeed there is some hype to the communications revolution, there is fundamental significance too due to its deep penetration into all domains of human activity. Like the industrial revolution, this new revolution is dependent on new knowledge and information but the difference is that knowledge and information are applied to knowledge information processing devices – creating a "cumulative feedback loop between innovation and the uses of innovation" (Castells, 2000a, p31). This reflexive aspect amplifies the power of technology as users can take control of and shape future use.

According to Castells, the information technology revolution occurred in three main technological fields: microelectronics, computers, and telecommunications. These fields came together in the 1970s and led to decreasing costs and qualitative advances in the production of technology, and the quick diffusion of new technologies into society. In Castells' history, most discoveries in new information technologies were made in the United States in the 1970s as a result of a time/place clustering that can be traced to the "autonomous dynamics of technology discovery and diffusion, including synergistic effects between various key technologies" (Castells, 2000a, p59-60). For example, the microprocessor makes possible the microcomputer; telecommunications advances enable networking and increase power and flexibility; the growing microcomputer market stimulates new software; computer networking expands through user interest in the World Wide Web.

Advances in the 1970s form the fundamental basis for the processes of socio-economic restructuring in the 1980s – such as the global integration of financial markets. Likewise, uses of technology in the 1980s conditioned the uses and trajectory of technology in the 1990s. For Castells, the network society is conditioned and driven by advances in technology, and the constant development and diffusion of new technologies since the 1970s has led to the development of a new information-technology paradigm. Within the paradigm, the most essential concept is that information is raw material. New technologies act on information, a situation different to previous revolutions where information acted on technologies. The second characteristic is the pervasiveness of the effects of new technologies. With information being the central raw material and an integral part of all human activity, all the processes of individual and collective existence are affected by the new technological medium.

Castells states that any relationships that use new information technologies pursue a networking logic. Networks, in particular the Internet, are uniquely qualified to manage complexity through co-ordinated decision-making and decentralised execution. The network society is able to structure the unstructured, yet preserve flexibility and remain adaptable (Castells, 2001). Networks diffuse, and grow exponentially – the benefits of being in the network grow, but the costs of not being in grow too. Convergence is another specific feature, with the growing union of specific technologies into a highly integrated system. One element cannot be imagined without another – computers need

chip power or data transmission's reliance on coding and recoding. Furthermore there is a remarkable convergence between fields, such as the massive computing power that underpins the biotechnology industry. The information-technology paradigm is "powerful and imposing in its materiality, but adaptive and open-ended in its historical development" (Castells, 2000a, p76). Comprehensiveness, complexity and networking are its decisive qualities.

Castells' conception of the information-technology paradigm and the centrality of technology to the network society could be said to place technologies too centrally in an analysis of society. While Castells does not ignore the negative aspects of technology, the techno-deterministic slant present in his work opens up an area for criticism. Winner (1984) points out that technologies are not socially neutral, they reflect/articulate social relations in the societies that they are mobilised in i.e. capitalist social relations, or communist social relations. Critiquing technology cannot just be a technological matter – cultural and political issues must be placed against it too.

A holistic view may therefore be more appropriate, not one which advocates a break with the past with the conception of a new paradigm. Any conception of the 'information society' must be one that considers all forces, including social relations. There is a reading of the history of the information revolution that starts from the basic premise that, from the late 1970s onwards, there was a feeling that technology would change everything dramatically (Toffler, 1972; Naisbitt, 1984). Robins and Webster (1999) distrust any degree of futurism in analysing the changes in information technology in the last quarter of a century. In their opinion, the futurist predictions of the 1970s and the hyping of technological advances in the 1980s left little room for dissenting voices. They feel that this situation led to technological development being viewed as a benign spectacle that was neutral, inevitable and should be adopted as soon as possible. It could be said therefore, that when technological development is seen as a practical necessity for achieving social development, to stand in the way of technology makes one a reactionary. Society tends to acquiesce to innovation –technology (and its history, its genesis) is treated as a mystery.

Information and technology are more closely linked than ever before, but in light of the centrality of information to ongoing developments (as espoused by Giddens, Habermas and Schiller) it is appropriate to question the assumptions being made about the information revolution, especially the idea that this revolution is a novelty. The revolutionary aspects of technology can be questioned – knowledge and information were used to run factories and govern nation states before computers arrived. Instead, it could be suggested that the information revolution is substantially an economic matter, where a business is made of information and knowledge expansion is equated with wealth expansion. The revolution should be understood as a matter of "differential (and unequal) access to, and control over, information resources" (Robins and Webster, 1999)

The integration of communications

The following section sheds some light on the existence of the new paradigm by highlighting the convergence of information technologies. This fundamental factor of Castells' work must bear further analysis to shed light on the extent to which alternative opinions on the information revolution are present in the conception of the network

society. To do so a brief history of the nature of communication is given, especially relating to mass media, along with an examination of how computer-mediated communication is evolving, via Internet-based technologies, to segment message receivers into those who know how to get what they want from new technologies, and those who are restricted in their choices.

It is some 2700 years since the invention of the alphabet made conceptual discourse possible, superseding – temporarily – the primacy of sounds and images in the world of communication. Now, in the 21st century, the integration of all modes of communication into an interactive network is occurring. Thanks to hyperlinks and rich media technology, the written, oral and audiovisual modes of human communications can be integrated into the same system. Castells points out that the globality of this network, and its vast number of access points fundamentally changes the nature of communications (Castells, 2000a).

It also changes the nature of culture itself. If culture is mediated and enacted through communication, cultures themselves – which are here taken to mean historically produced systems of beliefs and codes - will be fundamentally transformed by the new technological system described in the *Rise of the Network Society*. Castells' idea is that the powerful influence of the new communications system (mediated by social interests, govt policies and business interests) is creating a new culture – the culture of *real virtuality*.

Castells retraces the formulation of mass media and its interplay with cultural and social behaviour to illustrate his point. The diffusion of television created a new galaxy of communication, he says, with the TV screen as its influential heart and face. Television has a greater reach – often international as opposed to simply just national – than other media such as radio, and as such it has such a great influence on global communications. Television is inevitably associated with 'mass media', meaning top down communication, tailored to a lowest common denominator audience. Mass culture – produced from mass society – was a direct expression resulting from the new media system being controlled by governments or business oligopolies.

Television brought about the end of the dominance of the alphabetic communications system, creating, as Castells terms it, "an historical rupture with the typographic mind" (Castells, 2000a, p360) A few years after its development, television became the cultural epicentre of society and over the last three decades a worldwide communications explosion has appeared in its wake. Radio and television have become the audiovisual environment with which people interact endlessly and automatically. The real power of television, however, is how it shapes discourse and sets the stage for all processes that intend to be communicated to mass society – from politics to business, from sport to art. Businesses and politicians have to be represented on television – if not, other businesses/politicians will be. While messages can get lost in a lax syntax and a blurring of information and entertainment this matters little - the message has to be in the mass media. If it is outside, it will not register on the collective mind.

While mass media is a one-way communication the audience must not be forgotten - everything depends on how the receivers interpret the message. But because the audience is not passive, and indeed is an interactive subject, Castells points out that in the 1980s the media began to differentiate thanks to the introduction of new

technologies. From mass communication the media moved to segregation, individualisation, and choice precisely at the moment that deregulation was passed to let it happen. New printing and newspaper production techniques were introduced, specialisation in e.g. radio programming began, and in peoples' homes video recorders began to give more control to individuals about what they wanted to watch. Camcorders even began to facilitate the self-production of images. The biggest move however, was the multiplication and diversification of television channels through cable and satellite broadcasting. Private broadcasting companies grew, and state broadcasting began to be scaled back.

The result of this was that the mass audience remained in terms of numbers, but due to segregation and an abundance of channels to choose from it was no longer mass in simultaneity and uniformity of received message. The change in the media environment meant the audience became more selective and able to choose their own messages. Castells characterises this as a move from mass society to segregated society – according to ideologies, values, tastes and lifestyles. However, despite this transfer of power into the hands of message receivers, corporations and governments did not lose control of television. The rise of media corporations in the 1990s is testament to this fact, whether illustrated in the huge mergers of America Online and Time Warner, or the diversification and global reach of News Corporation. Consequently, an odd effect emerges: the mass audience segments and diversifies while at the same time control over TV and media is more centralised at a global level, and more commercialised than ever. Therefore, even with the increase in choice taken into account, television remains a fundamentally one-way, top-down medium, granting the audience little opportunity to feedback, save as consumers. Communication, not interaction, is the order of the day. Castells sees this as inevitable because computers were not ready to free TV from the screen until they had learned to talk to each other. Once this happened, the audience could speak up for itself.

Computer-mediated communication

The backbone of computer-mediated communication (CMC) comes from ARPANET, the United States military program designed to enable communications networks to withstand an attack targeting a central command centre. ARPANET eventually developed into the Internet known today. Along with military/scientific establishments, the origins of the Internet come from the personal computing counterculture and the university and academic communities. The worldwide scope of the technology, its computer to computer connections and the communal roots that built the infrastructure from the bottom up have all contributed to its success and rapid diffusion to date. Much of the responsibility for this diffusion can be laid with universities, who are the "major agents of diffusion of social innovation because generation after generation of young people go through them" (Castells, 2000a, p384). They take their knowledge of the new medium into the mainstream of society when they leave. It is not unimportant who had access first either, because consumers on the Internet are also producers – content providers, environment shapers. The Internet fits neatly into Castells' theories regarding the reflexive aspects of technology in the information revolution; users have the ability to shape the online environment and use their minds as a direct productive force. The lasting consequences of this situation are the computing languages of the Internet, its legal systems (e.g. copyright and intellectual property), and its control systems (censorship).

Castells believes the architecture of the Internet will remain technologically open, with widespread public access and serious limits on government or business abilities to limit such access. In stating this, he gives the example of the origins of the network – openness and innovation and free accessibility supported by the hacking and networking community. While he does admit that attempts to regulate, privatise and commercialise the Internet are being made, the CMC networks inside and outside of the network as a whole are characterised by pervasiveness, multi-faceted decentralisation, and flexibility. They will reflect private interests and the controlling logic of public and private organisations but due to culturally embedded procedures of interactivity and individualisation they are unlike the mass media that has gone before.

Castells' views on the future openness of the network are at odds with those of Lawrence Lessig (Lessig, 2002). For Lessig there is a very real danger that the controlling logic that Castells warns of will not be negated by the forces of openness and innovation. Instead, Lessig is at pains to point out that innovation on the Internet is clearly under threat from big business and legal networks seeking to impose some degree of order on the Internet. For Lessig, the innovative days of the Internet that produced Hotmail, ICQ and the World Wide Web are almost gone, and he is not alone in warning of a darker future for the freedom to innovate online (McChesney and Schiller, 2002).

Nevertheless, the coming of CMC and networked computers leads to new patterns of communication. Online virtual communities for example – "self-defined electronic network of interactive communication organised around a shared purpose or interest, although sometimes communication becomes the goal in itself" (Castells, 2000a, p386) – were one of the first phenomenon to appear in the new communications environment (Rheingold, 1993; Wellman, 1999). Many varieties of community are possible – small networks, big networks with weaker ties, specialised and functional or broad and supportive. There is also the rise and rise of text-based communications to consider, in the form of email and instant messaging, supplemented by increasing visual representation as services become more sophisticated. New types of communication solidify existing bonds between individuals or facilitate the forging of weak ties with strangers and the linking of people with different social characteristics. Castells believes this expanding of sociability beyond socially defined boundaries of self-recognition could be a good contribution to expanding social bonds, in a society experiencing rapid individualisation and civic disengagement (Castells, 2000a)

Castells asks whether CMC is a return to the typographic medium or something new, like a writing telephone. It is difficult to precisely define the new medium due to its mix of communication forms, but it is important to remember that people shape technology to their own needs – for example, the telephone expanded social networks and reinforced existing ones (Castells, 2000a). But while CMC does not substitute for other means of communications – it reinforces existing social patterns - it does have advantages for its users that previous communication tools do not. The anonymity of CMC stimulates participation and provides a degree of protection for its users, thus encouraging uninhibited communications (Markham, 20003; Mann and Stewart, 2000). These advantages are particularly felt amongst oppressed groups in society (Delio, 2003). It is in the spreading of information that CMC really comes into its own, combining the one-way approach of television with a far more interactive aspect that

lets users choose their information sources selectively and spread information to others in a variety of ways – email, online mailing lists, web sites. The new electronic environment has begun to show characteristics of a public sphere with political activity, debate and awareness-raising activities taking place online alongside entertainment and commerce (Computer Professionals for Social Responsibility, 2004**)**. Of course, at the same time networks of criminals, insurgents and terrorists are able to take advantage of the new medium to organise and mobilise resources in darker struggles. The supposed secrecy CMC offers its users is attractive to many groups in society, some of whom have agendas different to those of the original founders of these new communication channels.

The obvious has not yet been stated about the new technologies of the information revolution. CMC and the opportunities offered by the Internet are by no means available to the vast majority of the peoples of the world. The Internet, at the time of writing, can only be accessed by approximately ten percent of the world's population (ITU, 2002; UN, 2003). Despite the quick diffusion of new information and communications technologies the world still faces a so-called 'Digital Divide' regarding those who have access to information technologies and are able to use them, and those who do not. Because of this problem, which will remain with society for the foreseeable future, it could be that the most important impact of CMC potentially could be the reinforcing of culturally dominant social networks – the part of the world that has the power at the moment – and the increasing of their cosmopolitanism and globalisation. Castells puts it thus, that new information and communications technologies might "reinforce the cosmopolitanism of the new professional and managerial classes living symbolically in a global frame of reference, unlike most of the population in any country" (Castells, 2000a, p393). Could it provide material support to the meaning of a global culture – and strengthen the cohesion of the global elite?

Computer-mediated communication and multimedia

The integration of communications does not stop at CMC. New electronic communications systems are characterised by the integration of different media - globalised, customised mass media and CMC - and by interactive potential. Castells calls this fusion 'multimedia', and with its coming electronic communications will be extended to all spheres of life. The promise of multimedia is considered so important that governments have rushed to create national information infrastructures to support its emergence, and although the dot.com crash at the beginning of 2000 delayed the implementation of new services and punctured some of the enthusiasm for the new medium, the possibilities for the technology have continued to encourage investors into the field and cheerleaders into print (Bill and Melinda Gates Foundation, 2004a; People's Network, 2004*)*.

A problem exists however, in that multimedia interactive systems require a network capable of dealing with the rich media transmissions – dial-up connections cannot provide the required speed of data transmission and, despite quick growth, global broadband take-up is still in its infancy (Clickz.com, 2004)[4]. The possibilities for the

[4] Generally, broadband refers to telecommunication in which a wide band of frequencies is available to transmit information. This means that information can be sent on many different frequencies or channels within the band concurrently, allowing more information to be transmitted in a given amount of time. Broadband Internet access is high speed, generally over 256 kilobits per second (whatis.com, 2004)

technology are endless, but the infrastructure is not there yet. In fact, the necessary investment in infrastructure could only be covered if there was sufficient demand for services. This is an important point to make, for the future communications environment will depend on how the multimedia infrastructure is created.

This is an argument that Lessig is prepared to agree with (Lessig, 2002). When faced with the costs of creating a global technological infrastructure able to provide multimedia in sufficient quantities to cover initial expenditure and indeed turn a profit, media companies are liable to turn to the safest option to make sure investment is recouped. Castells believes that the cultural meaning of the system will be deeply affected by the timing and shape of the technological trajectory – meaning that entertainment and commerce are more likely to be the drivers for the multimedia environment than education, health or arts for example (Castells, 2000a). It is already possible to see media corporations seeking to consolidate their position in the field by diversifying their interests in the areas of content provision – for it will be the ability to supply required content, to reach the niche, that will enable corporations to secure a foothold in the new environment. Hence global media corporations are purchasing content providers to stay in a position of control, and it is not unusual to find Hollywood studios, TV channels and programme archives, Internet services or movie production companies all under the wing of a single corporation – as exemplified in the AOL/Time Warner merger of 2000.

The dangers of such a situation are the message in the works of Lessig. In *The Future of Ideas* (2002), he paints a picture of a future online environment where corporations are able to control the Internet at three levels – the physical layer, the code layer and the content layer. This control enables the commodification of the Internet and the power to direct the course of innovation online for years to come. Castells is more unsure of the implications of the new multimedia environment for society but does accept that communications habits are likely to be greatly affected. As he points out, an increase in electronic equipment in homes has already increased self-sufficiency – the world is available from the home. The development of the multimedia environment and the integration of communications technologies, according to Castells, will support a social/cultural pattern with widespread social and cultural differentiation.

This pattern will be seen in the segmentation of viewers/users/readers/listeners. Due to the interactive nature of integrated communications, messages will be segmented by senders' strategies, but also diversified by the users of media, with users choosing exactly what it is they want. Further segmentation will occur through an increasing social stratification amongst users, with access to multimedia being dependent on time and money; cultural and educational differences of users that directly impact on the ability to use the technology to find what is wanted; and the need to be a receiver in a region with enough market potential to justify investment in infrastructure.

Consequently, the multimedia world will be populated by two distinct camps: the interacting – who know what they want and how to get it; and the interacted – those who get a restricted choice of pre-packaged choices. Class, race, gender and geography decide who gets what. The communication of all kinds of messages in the same system, even if the system is interactive and selective, induces an "integration of all messages in a common cognitive pattern" (Castells, 2000a). By getting information, commerce, entertainment, and news from the same medium, users of multimedia will go one step

further than the blurring of contents that takes place on television. All forms of content start to look similar with codes borrowed from each other and various messages under the same communication mode. The distinction between audiovisual media, print, popular and intellectual culture, entertainment and information, education and persuasion is ended. Instead a new symbolic environment is created - all cultural expressions are brought together into a "digital universe that links up in a giant, non-historical hypertext, part, present and future manifestations of the communicative mind" (Castells, 2000a, p403). As Castells puts it, virtuality becomes our reality.

The relatively recent advent of CMC and multimedia are advances in communications technology that both blur the boundaries between different types of content and offer the possibilities of an increasingly segmented audience of message receivers. There are further consequences too, of having most cultural expressions in an integrated communication system. The power of traditional senders (religion, morality, authority, traditional values, political ideology) is weakened and to regain strength they must recode themselves into the new system. Shapiro (2000) argues that traditional senders in the form of governments and organised religions have already done this through the imposition of control systems on a national media level such as in China or Iran. Lessig would argue that the private sector is already seeking to control both messages and the environment that messages circulate in (Lessig, 2002). To further examine the ability of actors to influence Castells' real virtuality the role of nation states and the globalised economy must be examined within the informational society.

The nation state and modernity

The work of Anthony Giddens regarding the role of information in modern society has already been summarised, but it is appropriate at this point to further explore his theory of modernity in order to illustrate the role of the nation state within the theoretical framework used in this project.

At its most basic, a nation state can be considered a bounded territory inside which political power is exercised by governments (Giddens, 1989). The nation state came into being in the late seventeenth/early eighteenth century, a period of time that Giddens associates with the term 'Modernity'. Modernity is used to describe modes of social life or organisation which emerged in Europe from about the 17th century onwards and which subsequently became more or less global in their influence. Whereas Bell believed in the existence of a post-industrial society that came into existence after the Second World War, Giddens is not convinced of this and instead believes society has entered a period where the consequences of modernity are becoming more radical and universal than ever before.

The modes of life in modernity move away from traditional types of social order in two ways. Extensionally, there is the establishment of social interconnection on a global scale, a conceptualisation of globalisation that is discussed below. Conversely, intimate and personal features of our day-to-day existence are altered from our previous 'traditional' existence. This dual existence is similar therefore to Castells' opposition of the Net and the self explored in more depth in Chapter Two. Giddens seeks to identify discontinuities which separate modern social institutions from traditional social ones, and to understand this it is important that traditional society is defined.

Before modernity, there were what Giddens calls 'traditional societies'. Traditional states, also known as class-divided societies, are segmental in character, with a low administrative reach from the political centre. Due to this, the authority of the state apparatus is weak and there is no 'governing' in the modern sense. City states or feudal systems are two examples of traditional states – both entities that differ from nation states in that they have frontiers, not borders. These entities depend on the generating of allocative (planning and administration) and authoritative (power and discipline) resources, an action only made possible by relations between the countryside and the city. Inherent in this action is the early development of surveillance capabilities, which later become the basis of administrative power created by states or organisations. Giddens defines a state as "a political organisation whose rule is territorially ordered and which is able to mobilize means of violence to sustain that role" (Giddens, 1989, p17), and warfare was a leading preoccupation of dominant classes in all non-modern states – in some places there was nearly continual war. In traditional states however, state apparatus never had complete monopoly of the means of violence due to the difficulty, expense and potential dangers of raising a standing army. This situation was compounded by the relative slowness of transport and communications, along with various types of insurrectionist that were found within the traditional state at any one time. Despite this, force was the main method of the dominant classes to ensure compliance from their subjects.

It is not possible to describe the forms of rule found in traditional states as 'government' as it might be understood today, if 'government' means the "concern of the state with regularized administration of the overall territory claimed as its own" (Giddens, 1989, p57). Instead, 'Polities' was limited to the governance of conflicts within classes, and the main urban centres, with no overall enforcement of state sanctioned laws. The main link concerning state and subjects in the traditional society was taxation, and Giddens suggests it was irrelevant what the majority of the population did with their everyday lives, as long as they paid taxes and did not rebel.

Despite this fiscal relationship between the governing classes and the governed, traditional societies saw a great separation between the politic and the economic, with the state intervening very remotely in economic activity. In contrast, the nation state sees a close meshing of the politic and economic spheres. Modern capitalism is the creator of the economic sphere and modernity, too, brings politics to far more people than in traditional societies. There are key distinctions in the area of property too - in traditional societies, property invariably means land whereas with the coming of capitalism, property is capital that is freely available to be sold.

With the coming of modern society private property becomes part of a set of interconnected economic mechanisms linked to specific modes of social organisation and social transformation. This marks a break with traditional society where peasants were 'fixed' to land and tied to the dominant classes for protection - property-less wageworkers needed employers for survival. In modernity, labour can be 'sold' and a mass labour market created. A key distinction between the two types of society therefore, is that in traditional societies, if peasants do not conform as expected then the dominant class can use force for compliance. In the nation state of modernity, as discussed below, dominant forces no longer directly control the use of violence – the main sanction is 'dull economic necessity': the economic necessity of employment.

Modern societies are those living in a time of modernity, and they can be distinguished from traditional societies in a number of ways. The pace of change is different – in modernity it can be extreme, as illustrated by Castells' history of communications in the 20th century (Castells, 2000a). The scope of change is also on a different scale and is now global in its reach. Further changes can be seen in the nature of modern institutions, with the introduction of new forms, such as the political nation state discussed below. Giddens' modernity is multidimensional on the level of institutions, and is affected by combination of characteristics including capitalism, industrialism and rationalisation (Giddens, 1990). For the purposes of clarity, it is useful to briefly explore these terms.

Capitalism, industrialism and rationalisation

Capitalism is a form of economic exercise originating in Europe some 400 years ago. Taking his cue from Marx's 16th century dating of capitalism, Giddens involves capitalism centrally in the discontinuity of modern history (Giddens, 1989). Capitalism involves the production of commodities, and relies on money as a means of storage and transfer of resources. Giddens says money is a means of expansion of time, space, distanciation and therefore power, as it is not tied to a specific locale – it goes beyond immediacy of context by virtue of being a disembedded system that transcends time and space. For Marx, money was the reflection, in a single commodity, of the value relations between all commodities (Giddens, 1989)

In a capitalist society, capitalism is the primary basis of production of goods and services for the vast majority of the population. A distinct 'economy' emerges, insulated from the political sphere, although state intervention in the economy is not uncommon. The insulation of the economic from the politic presumes the processes of commodification mentioned above, leading to the creation of two classes - the 'propertied' and the 'propertyless', where wage-labour is the other face of capital. The nature of the state (as a mode of government) is strongly influenced by alignments with private property and the insulated economy, thus conditioning the state's autonomy. Giddens states that the 'capitalist state' and 'capitalist society' are synonymous due to the boundary-maintaining imperative of nation states (see below) being integral to their existence (Giddens, 1989).

Industrialism, on the other hand, is linked to capitalism but its most important characteristic is the concentration of ownership in the workplace. Giddens defines industrialism as the use of inanimate sources of material power such as electricity in production or in processes affecting circulation of commodities. The means of production, power and raw materials are in the hands of the entrepreneur. Industrialism is the mechanisation of production and other economic processes and is seen mostly in the manufacturing of commodities where routinized processes create a flow of produced goods. A key feature of industrialism is the existence of a centralised workplace in which productive work/activity is carried on. At its heart, industrialism is an extension of the basic features of pre-existing capitalist enterprise (Giddens, 1989).

Over time, and partly thanks to mechanisation and the application of technology, economic processes came to be improved and more efficient – rationalised. Rationalisation is the organization of a business according to scientific principles of management in order to increase efficiency and output. Robins and Webster (1999)

point to F.W. Taylor's 'Scientific Management' in the late 19th century/early 20th century as an example of the use of information and new technologies in rationalising the production process. In 'Taylorism' there is an emphasis on planning, logistics and the division of labour in the workplace, processes that ultimately lead to increases in production. Managers take care of administration and control – planning – by applying their previous skills and knowledge – information –to the production process, carefully assessing methods in order to maximise output. Henry Ford took this situation further by adding the effects of newly available technologies to develop industrial mass production techniques and deepen the process of rationalisation in the workplace. Over time, the unreliable human elements in the production process are subordinated to technology and the production process is made more efficient, effective and ultimately more cost-effective. Today, the effects of rationalisation are seen mostly in flexibility of production and labour. Flexible, just-in-time production processes enable niche markets to be reached far easier and over production to become (more or less) a thing of the past. Equally, the search for cheaper labour means employees are expected to become just as flexible in terms of working hours or contracts.

Capitalism, industrialism and rationalisation contribute to the separation of modernity from existing forms of social order. The commodification of labour power, and the resulting locking in of wage-labourers to 'management', is a key difference, while the presence of Taylorism on the shop floor, and the expansion of administrative power in the workplace mark a new era in social order. Industrialism - with its centralisation of the workplace – gives a venue for these processes. In traditional societies production was usually carried out away from the ruling classes making surveillance measures and information storage far more difficult to implement. In the capitalist society that is a consequence of modernity, the link between capitalism and industrialism is well advanced and surveillance and information storage are the norm.

The dynamism of modernity

The pervasiveness of capitalism, industrialism and rationalisation, therefore, contributes to the spread of new 'modern' institutions. After a discussion of the dynamism of modernity, this chapter continues to look specifically at one such institution, the nation state. The role of information in the nation state, and governments' need for surveillance both inside and outside of its borders is examined before the drawbacks of such a situation are highlighted. The final section of the chapter moves further to outline the global scale of the research by discussing the consequences of modernity, in particular the spread of modernity's institutional dimensions to a worldwide level.

The dynamism of modern institutions, and of modernity itself, derives from three linked factors: the separation of time and space and "their recombination in forms which permit the precise time-space 'zoning' of social life" (Giddens, 1990, p16); the 'disembedding' of social systems, which interacts with the time/space separation; and the "reflexive ordering and re-ordering of social relations in light of continual inputs of knowledge affecting the actions of individuals and groups" (Ibid, p17). These concepts have great consequence for the research, especially when judging the first critical question relating to the nature of the Internet.

In pre-modern societies time was linked to space, in that the 'when' was connected to the 'where', as illustrated by the identification of time through the noting of regular

natural occurrences such as seasonal changes in agricultural communities. Modernity has seen the separation of time and space through the introduction of the mechanical clock permitting the zoning of the day into 'work' or 'rest' periods for example, or the standardisation of calendars and time across regions. Where pre-modern societies saw the coincidence of time and space and activities on a local scale, modernity sees localities penetrated and fashioned by social influences far from them. This is a result of the awareness that comes from maps, from the discovery of distant locales and from an influx of 'foreign' news, and it leads to a consciousness of 'places' we might never see, even if they are represented on an atlas. The Internet has a major role to play as disseminator of new and foreign ideas, for it is able to spread hitherto lesser-known concepts into nation states previously indisposed to their circulation. Democratic ideals, for example, can be spread quickly and simply via the Internet, encouraging freedom of expression among citizens who may be unused to it.

The disembedding of social systems can be illustrated in modernity's use of symbolic tokens - media of exchange that can be passed around by all e.g. money. It can also be seen in the proliferation of expert systems – "systems of technological accomplishment or professional expertise that organise large areas of the material and social environments in which we live today" (Giddens, 1990, p27). Examples of these systems might include technological standards on the Internet or rules regarding the construction of aircraft. Disembedding systems depend on trust which, inevitably, is an article of faith where we trust that the systems will work as they are supposed to. Trust operates in environments of risk, in which varying levels of security (protection against dangers) can be achieved. As discussed further below, the trust/risk trade-off on the Internet has been affected by the aftermath of September 11th 2001, along with the effects of commodification and the worries of Cybercrime that are shaping the future of the technology. Trust issues that create barriers to access and affect freedom of expression – such as user privacy – are crucial to resolve if freedom of access to information on the Internet is to remain achievable.

The separation of time and space is a main condition for the disembedding of social systems that previously depended on the contexts and specifics of a local environment. If properly co-ordinated across time and space, disembedded systems can greatly enhance the extent of time-space distanciation, as can be seen in the existence of currencies valid across wide areas. The separation of time and space also provides the impetus for rationalised organisations, including nation states, to connect the local, the regional and the global through information and telecommunications technologies such as the Internet.

On of Giddens' most important concepts is the third contributor to the dynamism of modernity, the reflexivity of modernity. Reflexivity, in Giddens' context, is the process of directing examination back on oneself, or on one's actions. On a larger scale, it is the existing social order or structure that becomes the object of scrutiny by itself. Reflexive modernisation, therefore, is the practice of reconciling the limits and contradictions of the modern order, in light of a constantly renewing flow of information that continually revises society's modernity (Giddens, 1999). Traditional society integrates the reflexive monitoring of action with the time-space organisation of the community. In pre-modern societies reflexivity is largely limited to the reinterpretation and clarification of tradition - and tradition within the community does not remain static, each generation re-invents it for themselves. In modern society, reflexivity is seen in the fact that all social

practices are constantly examined and reformed in light of new information about those practices, therefore constitutively altering their character. The effects of globalisation, discussed below, with the dialectic of distant events influencing local relationships heighten the reflexive process. The Internet, with its continuous information flow, is a great contributor to this process, as it enables users to examine behaviour on any number of levels. The ability to assess relationships in light of previously unavailable information extends the process of reflexivity even further. Reflexivity can be called a defining characteristic of all human actions – human action has a consistent (and never to be relaxed) monitoring of behaviour and its contexts.

Giddens feels that living with the dynamism of modernity might be more like trying to control a careering juggernaut than a controlled and well-driven car. This is because many of the abstract systems inherent in modernity are unstable due to their complexity and the varying knowledge of their operators. Compounding this is the circularity of social knowledge, or the consequences of reflexivity. Any new knowledge about concepts or theories relating to society takes the course of further investigation off in new directions. Certainly, increases in information availability resulting from Internet access mean different nation states may find themselves constantly confronted by challenges to long held cultural norms regarding privacy and freedom of expression. The juggernaut analogy is a way of saying that social life cannot be completely controlled because a homogeneity of interest, a definite truth, does not exist. Culturally relative approaches to certain issues – such as freedom of access to information – are the result, and new technologies such as the Internet have the potential to fragment this process even further. This is the consequence of reflexivity – all knowledge is built on shifting sands.

The formation of the nation state

The dynamism of modernity contributes extensively to the transformation of traditional societies to nation states. The nation state is a key actor in this thesis' theoretical framework and as such requires detailed examination.

The nation state is an institution that followed on from the 'absolutist' state which came into being in Europe in the second half of the 15th century – a bridging state between traditional and modern societies. The absolutist state saw the beginnings of basic surveillance through standing diplomacy, an activity that also introduced the concept of international relations and the 'balance of power'. This was the early days of the sovereign state, as frontiers began to turn into national borders, often based on language, and exclusive authority began to be exercised within a state for the first time. The spread of European capitalism via the oceans also contributes to the introduction of the nation state, although absolutist states might have different laws in different areas, or different tax systems.

Between the 16th and early 17th centuries absolutist states began to attempt to apply statues to whole populations and begin to take control of criminal punishment. The beginnings of a concentration on social order and discipline, and the corresponding emergence of the idea of 'deviance' led to the appearance of a distinctive political order. Absolutist states began to solidify by beginning to manufacture a guaranteed legal order enforced by a centralised state apparatus. Attempts were made to protect contractual rights and obligations, especially property rights. Through the development of a state

co-ordinated and sanctioned monetary system there were the beginnings of a distinct arena for economic transactions, along with a specified political sphere for those in power. All of these features are to be found in a fully formed nation state, but in the absolutist state they were still in transition.

Giddens, in *The Nation State and Violence* (1989), states that the real vehicle for the development of the absolutist state was military development. "It was war, and preparations for war, that provides the most potent energising stimulus for the concentration of administrative resources and fiscal re-organisation that characterised the rise of absolutism" (Giddens, 1989, p112). The period was characterised by the development of military capability through technological advances, the introduction of fighting *and* discipline, and the development of European naval strength. These developments were a catalyst in the advancement of administrative power that eventually gave rise to the nation state.

The term 'nation state' describes the type of state that emerged from the absolutist period, a state with designated borders inside which political power is exercised by governments. The origins of most nation states are to be found in war, and their continuing existence is down to maintaining the integrity of the state's borders through the possession of credible forms of defence. The nation state is a bordered power container, internally pacified due to a successful claim to the monopoly of violence within its borders by its rulers. Giddens states:

"*The nation state, which exists in a complex of other nation states, is a set of institutional forms of governance maintaining an administrative monopoly over a territory with demarcated boundaries (borders), its rule being sanctioned by law and direct control of the means of internal and external violence*" (Giddens, 1989, p121)

Development of the nation state sees the emergence of administrative orders of high intensity. Giddens describes the nation state as inherently polyarchic, a characteristic that derives from administrative concentration (through expanding surveillance) and the resulting altered nature of the dialectic of control this produces. Nation states can only exist in systematic relations with other nation states, for internal administrative co-ordination depends on reflexively monitored conditions of an international nature. Following on from the work of French diplomacy during the time of the absolutist state, international relations is contemporary with the origins of the nation state.

While the spread of capitalism was fundamental to consolidation of these new systems from the 16th century onwards, by the late 18th century, the nation state had become linked to industrial capitalism, and administrative co-ordination was able to expand further within its borders. This was not achieved through means of violence but by sanctions brought about by the controllers of large capital assets, sanctions that can be brought about through control of authoritative resources in the workplace - such as the threat of not being paid.

The role of information in the nation state

The level of administrative control needed to impose sacnctions is a result of increased surveillance in the workplace. Surveillance is the act of closely supervising a person or a group. In the age of modernity urban living has replaced a rural, community-based

life; from a life of neighbours and families and close personal connection to a life of detachment and strangers. Urban society leaves behind gossip, personal observation and scrutiny and instead moves nearer to personal freedom, privacy and anonymity. In order to function however, urban society must gather detailed information on its members. In village life it was the memory of individuals, or the collective memory of the community that gathered and stored information; in urban life computers, databases and written records perform the same feat and gather information over time.

Urban living might take people away from the prying of neighbours but surveillance is hard to avoid. The kind of information gathered on individuals living in modernity is wide-ranging, but often impersonal and anonymous. Indeed it might be a mistake to see the collection of all this information as the coming of an Orwellian society – the extent to which surveillance is needed to organise such a complex society must be considered. Modern society is more organised than ever before, with highly complex organisations that routinely and systematically manage everyday living. Giddens is at pains to point out that this does not necessarily restrict individual freedom, pointing out that to maintain these levels of organisation information must be systematically gathered on people and their activities – what they buy, and when, the spending capacity of certain groups etc. This is the only way that complex systems such as supermarkets (featuring the co-ordination of suppliers, manufacturers, transport, stock replenishment etc.) are able to function. In order to do so, routine surveillance becomes a pre-requisite of social organisation – organisation and observation are very closely related.

This situation is easy to interpret as a nightmare scenario where an unseen Big Brother oversees all activities and actions. Individuation versus individuality must, however, be considered. Individuation is the situation where everything is known about a person, a record of date of birth, residency, education, job etc. Individuality, on the other hand, is when one is in charge of one's destiny and has genuine choices about courses of action. It is an oversimplification to argue that an increase in individuation necessarily leads to a decrease in individuality, for what may actually happen is that by society may have to know a great deal about someone to respect and support the individuality of members. An increase in individuation might actually enhance individuality as far as people will be treated as particular beings and receive entitlements due to them. It is a paradox – "individuation, by enhancing the rights of the individual, leads to greater surveillance and control of large populations" (Abercromie, 1986, p155). Instead of a step on the road to 1984, individuation might be unavoidable consequence of the requirement to treat people equally (Webster, 1995).

In light of this, it might be said that information has special significance for those living in modernity and the nation state. For all citizens of a nation state to be treated equally, the government must know the state's members, and those who do not belong. The political power within the nation state – the government – needs to maintain control of both allocative resources and authoritative resources. Allocative resources refer to the techniques of planning and administration, and encompass such things as benefits for individuals entitled to them, or the creation of new areas of housing for those in need. Authoritative resources on the other hand are the mechanisms of power and control, such as the police or the judiciary that enable governments to remain in charge. For governments to retain control over both these types of resources there has to be effective surveillance of the population.

Certain types of locale form 'power containers' which are circumscribed arenas for the generation of administrative power. Administrative power is based on the regulation and co-ordination of human conduct though the manipulation of settings in which it takes place. Surveillance – as the coding of information – is an essential element of this power. This coding has to be applied directly to the supervision of human activities because it detaches individuals from tradition and local community life. In traditional societies the exercising of authoritative power was found in military and religious settings, or in slave labour in mines or plantations. While this situation is not comparable to modern authoritative power in that time, space and authority are not integrated and it was not carried out by governments as such in defined territorial boundaries, it is an important taste of what was to come in modernity (Giddens, 1989).

Power containers permit a concentration of allocative and authoritative resources – they are places that generate power such as castles, manorial estates and cities or hospitals, schools and universities. The nation state is the pre-eminent form of power container – a territorially bounded administrative unity. Power containers can generate authoritative resources by surveillance, or by assembling large numbers of specialised administrative officials to implement the law of the nation state. Part of these officials' job would be to facilitate the scope and intensity of sanctions, especially sanctions relating to military power. Administrative sanctions backed by the use of violence is a very effective means of generating authoritative resources, or the use of a legally binding rules could be another alternative. A further method might be the creation of certain conditions that influence the formation of ideology, such as certain types of education, or the physical layout of cities within the nation state, featuring the use of state and/or religious architecture as visual representations of power. The more an ideology is accepted, the easier it is to wield power (Taubman, 2002).

The ability of power containers to generate authoritative resources was greatly helped by the development of writing. Previously, in traditional societies, use of the means of violence was used to enforce sanctions upon the 'enemies' of those in power. As writing developed so did administrative power, and this became a more advanced way of imposing structure upon society. Writing developed to keep records - meaning information could be stored and coded and activities more efficiently co-ordinated. Through the use of calendars structure and order can be imposed on society, the law can be framed in text and history can be written – and perhaps appropriated and administered by those in power. Detailed files on individuals or segments of the population can begin to be kept – and the beginnings of an extensive surveillance program are created.

As modernity dawns, the dynamics of administrative power begin to change. Administrative power becomes concentrated through the combined influences of industrialism and urbanism, and connected to the class structure in relation to sovereignty and democracy. Surveillance remains a key means of mobilising administrative power, carried out through the growth of communications and information storage. Printing is the first step in the mechanisation of communications and as such is essential for the growth of state administration and the enlargement of state surveillance. While the keeping of official statistics and records existed in traditional society, the mechanisation of the information recording process further enables the expansion and consolidation of administrative power. Furthermore, the progressive introduction of time-space ordering devices such as the timetable (for

transport) or the telegraph (for the separation of communications from transport) imposes a regularity upon society that can be reflexively monitored by the state in order to better understand production and the administration of resources.

Internal pacification is also used as a means of mobilising administrative power in the nation state. The tackling of 'deviance' leads to the creation of a perceived need for law and order. 'Order' comes to mean policing plus imprisonment, and the introduction of sequestration – creation of workhouses etc. for the poor, jobless, or mad – consolidates the concepts of 'disciplinary power' and 'restriction of freedom' and marks a move from open punishment to hidden discipline (Giddens, 1989). The military are removed from direct participation in policing internal affairs and instead point outwards towards other nation states, and a distinction is drawn between martial forces (external) and 'police' (internal). As a result of the influence of industrial capitalism sanctions become 'dull economic compulsion'. The state's way of dealing with deviance constitutes part of its administrative reach and the achievement of an effective monopoly of violence in the hands of state authorities cements its position.

Violence, surveillance and the nation state

Giddens posits that because of an imperative to survey modern societies might be considered to have been 'information societies' since their inception (Giddens, 1989). Today, in the 21st century it is likely that they are information societies to a far higher degree than ever before. Giddens suggests that one of the reasons for this greater 'informatisation of society' is the relationship between the state and violence, and the importance of information in this relationship. To illustrate this he explores the formation of the nation state and the centrality of the nation state system to modern society.

The world is made up of a system of nation states. The nation state is an essential part of people's identities, leading to pride in sporting activities or nationalism in wartime. These national identities are highly potent in modern history, and they are defined by who belongs to each nation and who does not. The nation state is therefore critical to the economic, social, cultural and legal life of its citizens. Despite this, it cannot be forgotten that nation states are a relatively new phenomenon, with the oldest states being no more than a couple of centuries old. The overwhelming presence of the state is still, to some extent, a novelty, and nation states themselves remain mutable, as events in the Balkan region in the 1990s proved. If it is considered that many nation states have been created in conditions of war and then sustained by possession of credible defence, then it can be seen that war, and preparedness for war, are essential contributions to the formation of the nation state which must uphold the integrity of its borders to survive. As a result, wider society has become far more involved with modern warfare as a greater percentage of the population are killed or maimed through war than ever before. Generally, citizens are required to get onside of any war effort and success in war depends on this, depth of government coffers and the relationship between industrial activity and preparedness for war.

The nation state's war activities and its links with chemical, energy and engineering industries has been looked at by both Giddens (1990) and Schiller (1996). There is a link between information, information technologies and the state/military/industry relationship, with information technology at the centre of all defence/war activities.

Growth in information technology is fuelled by the demands of the military – as is seen in the beginnings of the Internet – for it is intelligence and information that is at the core of modern warfare, in the heart of weapons themselves, or in the systems that control them. In light of this, surveillance is therefore essential to modern defence/war operations. An example of this is the importance of satellite technologies and their facilitating of long and short-range communications that are useful in peacetime (observation) and wartime (deployment). The military is reliant on its information systems to conduct its affairs because the monitoring of global events – military and civilian – is essential for any country looking to protect its borders. Internally too, insurrection must be guarded against and the very same systems – and now the Internet, as shown in Chapter Six - are used to search for subversives or weed out terrorist networks. At the same time, economic surveillance grows too – the prosperity of the economy depends on success in business and adequate protection of business interests within the state means global economic trends and individual firms' practices must be looked at.

Therefore through the nation state's duty to defend its borders and interests, surveillance grows. In order for a nation state to be confident while looking outwards however, it must achieve stability within its own territory first. In traditional states this was done through force of arms, but modern society differs in that dull economic necessity took over as a key sanctioning tool since industrial capitalism consolidated the position of the nation state in the 18th century. The modern nation state achieves stability by knowing its inhabitants – gathering information in order to conscript or tax for example – and a census is a first priority. Such an activity yields large amounts of information about a population, from demographics or performance indicators to employment patterns.

The possible resentment activities such as surveillance or conscription might stir up on behalf of the population is countered by a hypothetical contract between the state and its inhabitants. Such a contract takes the form of duties (to the state) and rights (for the citizen). For example, those fighting in a war on behalf of the state's interests might receive certain citizenship rights, such as the right to a passport or a vote. Giddens suggests the example of the Second World War in Britain, where sacrifice in war was to correlate with social reform such as the growth of the welfare state and a 'land fit for heroes' after 1945 (Webster, 1995). Surveillance determines how the contract – rights in exchange for duties – shall be delivered. Administrative apparatus is developed to aid delivery, contributing to the growth of the modern social democratic state. This surveillance means citizens' rights – to e.g. benefits – can be administered because the state knows who is poor enough to receive benefits.

Surveillance and its risks

"The delivery of welfare benefits and services is at the heart of the system of mass surveillance, because it is here that the processes of classification, information gathering and recording are constantly multiplying" (Hillyard and Percy-Smith, 1988, p172)

Giddens uses the above quote to illustrate the importance of surveillance to the allocation of benefits to those in need, but if it were indisputably true critics of increased surveillance would be fighting a losing battle. Surveillance, in its various forms, makes many people uncomfortable. Civil liberties groups highlight the danger of the misuse of

files for example, asking what happens if people's medical or banking files are abused, or made available to police without notification (Privacy International, 2003b). The melding of disparate databases is an issue, a practice that gives administrative agencies access to a wealth of information through one way in such as an identity card. Standardisation of computer systems, which might have many bureaucratic advantages, advances the process but creates fears regarding who knows what about whom.

Jeremy Bentham's 'Panopticon' is a useful way of explaining why many people find the idea of surveillance intrusive (Bentham, 1995). As a metaphor for modern life, it describes how populations are watched, from the darkness, with little idea of who is doing the watching. While the Panopticon approach might explain the process and the reasoning behind surveillance of populations, it important not to forget that information gathered can be used by citizens for their own benefits – for example statistical indicators such as crime statistics or school league tables can be consulted when deciding where to move.

Many problems are raised with the continuing discovery of new ways to carry out surveillance. The increase in use of closed circuit television, or the myriad of ways the Internet can be turned towards observation of its users creates an impression of 'surveillance society', where personal freedoms are exchanged for security in society. This scenario and the privacy/security trade-off are further described in Chapter Six**.** Regardless of citizens' fears, the quest for new surveillance technologies on behalf of governments and the desire for a see-everything-through-more-ways-of-seeing approach are expressive of the nation state's imperative to survey. In light of this, it can be hard not to see these tendencies of modern society as a threat of totalitarian rule – precisely because surveillance is maximised in the modern state.

On top of state surveillance there is also corporate surveillance. Information work is key in the modern company and accumulating information on internal operations and external rivals is common business practice for larger companies (Drahos and Braithwaite, 2002; Schiller, 1996**)**. The beginnings of this situation can be seen from the advent of Fordism, where surveillance of the production process, logistics surveys, and rationalisation were mobilised in pursuit of profit. As companies get bigger, become corporations and take on a transnational presence it is essential that they gather information about their client base to survive. Increases in market research - surveys, public opinion trawls, customer lifestyle research – are symptomatic of modern business practice, and a lucrative sideline in the selling on of consumer preferences has emerged to satisfy businesses desperate for information on the future of their (and other's) markets (Schiller, 1996). This 'transactional information' – the use of credit cards, the hiring of cars, even library details – is data on everyday activities that can give agencies detailed lifestyle pictures and enable better planning for the future in terms of production of goods and services for the consumer.

The spread of surveillance, in light of Giddens' work, could be said to account for the informatisation of society. The spread can be seen in the extension of the nation state's administrative authority and its intimate concerns with war and defence, along with the growth of citizenship rights and duties and the extension of corporate capitalism.

The consequences of modernity

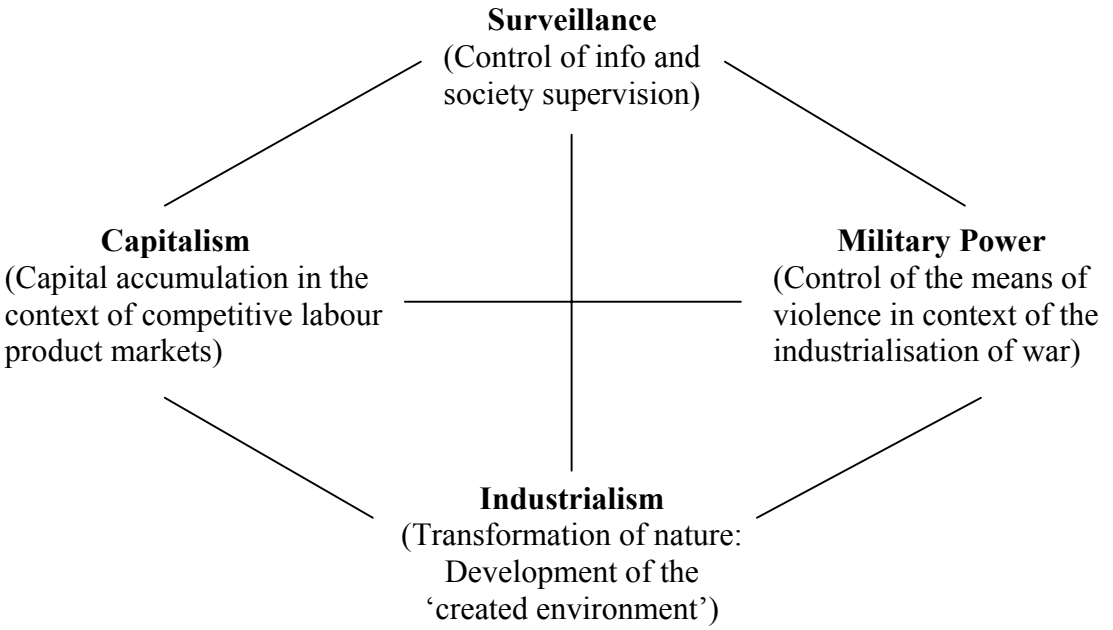
In light of the rise of the nation state, the pervasiveness of industrial capitalism and the informatisation of society, what are the global consequences of modernity? It has been suggested that the modern world is shaped through an intersection of capitalism, industrialism and the nation state system. In order to assess the consequences of modernity, therefore, Giddens (1990) sets out to define its institutional dimensions by avoiding looking for a single dominant institutional nexus in society and instead attempting to define institutions as capitalistic or industrial, on the grounds that these two terms must be seen as two distinct dimensions of modernity.

Giddens explains the difference between the two terms through a timeline of the development of modern institutions. In a capitalist society economic order is based on a system of commodity production where the general relation is between private ownership of capital and property-less wage labour. This relation forms the main axis of the class system. As a result of this, technological innovation is constant and pervasive in search of surplus. Giddens believes that the economy is fairly separate from other societal arenas, especially political institutions, and that economic relationships have high priority. This separation of the economic and the political is an important point in this project's theoretical framework in that while the main actors in each arena (nation states and businesses) will often find themselves pursuing goals that cross between the economic and the political, their main activities are focused on one of these specifically. The separation is reinforced by the fact that private property is pre-eminent in the means of production as it affects both the relationship between politics and economics, and the class system. The autonomy of the state is conditioned by its reliance on capital, which it has far less than complete control over.

Capitalism, through its restless search for surplus begets industrialism. Industrialism then revolutionises technology and commodifies labour. This action incorporates class relations within a framework of capitalist production. Previously, in a traditional society class relations were not wholly economic – they were sanctioned by violence on the part of the dominant class. In modernity, violence is taken out of the labour/class dynamic and concentrated in the hands of the state authorities. The development of the nation state, complete with hitherto unseen concentrated administrative power, complements capitalist production and therefore greatly accelerates the development of modern institutions.

Capitalism and industrialism are therefore two separate institutional dimensions of modernity. At a more basic level, a capitalist society is only a society because it is a nation state. As discussed above, nation states have levels of administrative co-ordination not seen in pre-modern states as a result of extensive surveillance activities. They also retain control of the means of violence and the 'industrialisation of war' – a distinct connection to industrialism. Surveillance and military power must therefore be considered as further dimensions of modernity alongside capitalism and industrialism. These four dimensions are illustrated in Figure 1 below:

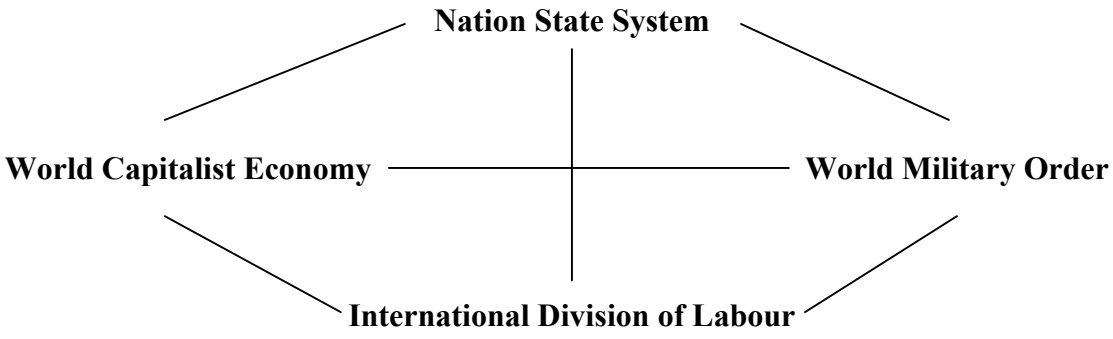
Figure1: Giddens' 'Institutional Dimensions of Modernity'



According to Giddens, modernity is inherently globalising (Giddens, 1990). This is illustrated with reference to the characteristics of modern institutions such as the disembedding of social systems and reflexivity, characteristics that ignore the time-space zoning present in traditional society. For Giddens, globalisation is the "intensification of worldwide social relations which link distant localities in such a way that local happenings are shaped by events occurring many miles away and vice versa" (Giddens, 1990, p64). Any local transformation is affected by factors operating an indefinite distance away.

The link between modernity and globalisation is a very important one for the project, in that the scale of the research demands a framework that can adequately deal with the role of information, and the actions of powerful actors, on a global level. The dimensions of globalisation that Anthony Giddens produces in Figure 2 below provides a starting point for discussion of the implications of globalisation for information flow and enable the identification of the two primary actors in the project's theoretical framework.

Figure 2: Giddens' 'Dimensions of Globalisation'



The nation state system is discussed in some detail above. This system is connected with the world military order, which is the consequence of the flow of weaponry between some parts of the world to others and the alliances states build with each other on a truly global scale. As has been seen in the first and second world wars, and in the current global war against terror, war itself can get global.

The industrial development that is a consequence of capitalism's restlessness leads, on a global scale, to the global division of labour. As a consequence of specialisation and rationalisation, modern industry is based on this. In considering its global implications, Giddens is concerned with the major shifts in the worldwide distribution of production that have occurred since WWII. The worldwide diffusion of machine technologies can alter relations between human social organisation and the environment. Examples of this might include the controversy over genetically modified foods, or the ecological changes as a result of industrial pollution that can now harm individuals greatly removed from the scene of production.

Conclusion

The consequences of modernity that have led to the dimensions of globalisation displayed above provide a backdrop upon which the nation state operates. Within this situation the power of information plays a key role as an enabler of operations for governments exercising administrative power over their citizens. Likewise, information is of similar importance for citizens – especially those able to use the types of computer-mediated communication discussed in the first part of this chapter. However, the extent to which users of the new communications technologies are able to take advantage of a medium such as the Internet, to become interacting rather than interacted, is dependent, in part, on the level of control imposed by the nation state responsible. This chapter has sought to show that nation states, due to the need for organisation, security and exercise of allocative and authoritative resources, have a special interest in information flow within their borders.

A background has therefore been constructed against which the first research question, concerning the nature of the Internet, can be considered. By using concepts from Castells' network society, such as informational development and the convergence of communications technologies, and then approaching these concepts from the point of view of Giddens, Habermas and Schiller, certain forces behind the generation of information have been identified. One specific force, the nation state, has been examined in depth and put forward as a source of obstacles to information access thanks to its ability to influence information flow. Simply put, the actions of a nation state's government can have implications for citizens' access to information. Chapter Two seeks to place the nation state in a wider context through a discussion of globalisation, while further exploring the globalised economy as a another actor able to influence the development of the Internet, and access to information on it.

Chapter 2 – Globalisation and the Promise of the Internet

Introduction

This chapter follows on from Chapter One by placing the nation state into a broader global context. The scale of the research demands an investigation into globalisation, and the first part of this chapter examines what exactly this term means, along with its contributions to the theoretical structure. The nation state as an actor able to influence information flow through surveillance mechanisms was discussed in the previous chapter, and here the globalised economy is examined in order to assess the extent of its influence in comparison. The chapter therefore continues with theories from Giddens, regarding the role of the nation state in an age of globalisation, and Schiller, amongst others, who provides a reading relating to the globalised economy and the role of transnational corporations in it. In order to further explore the first research question assessing the nature of the Internet, in this chapter there is a specific focuses on the central role of information and communications technologies in globalisation. As the research is discussing the flow of information on the Internet worldwide, a macro-level approach is needed in terms of applicable theories, and the discussion of globalisation that makes up a large bulk of this chapter seeks to assess some of proposed views of the phenomenon that might be useful.

Once a framework has been laid out that emphasises the ability of the nation state and the global economy to play an influential role in global development, the concept of simultaneous globalisation and fragmentation is discussed with reference to the work of Castells and the implications for the Internet's development. In the final part of this chapter, the role of the Internet in the outlined context is discussed. This means answering the first research question relating to the nature of the Internet in contemporary society. This chapter attempts to look at the Internet from a theoretical point of view, rather than assessing the spread of the Internet – which is covered in Chapter Four. It does, however, seek to make a case that the terrorist attacks in the United States in September 2001 have affected some of the hopes and fears commentators held for Internet technology. Consequently, utopian and dystopian visions of the Internet are discussed and linked with a discussion of Jurgen Habermas' public sphere to assess the extent to which information flow may be manipulated. The chapter ends by restating the main facets of the theoretical framework that will carry through the rest of the dissertation.

Globalisation

The concept of globalisation has held the attention of sociology over the past ten years and has come to mean many things to many scholars (Arrighi, 1998; Bauman, 1999; Beck, 2000; Hirst and Thompson, 1999; Robertson, 1992; Strange, 1996; Wallerstein, 1974). Any a discussion of globalisation must involve an awareness of historical perspective and scepticism towards the radical transformation of society, and it is true that classical theorists of sociology have considered the global scale previously. Marx discussed the limitless expansion of the economy, the movement of capital to new markets and the capitalist mode of production inevitably creating a globalised world (Morrison, 1995). Durkheim focused on internationalisation, the international division of labour, differentiation and functional specialisation on an international scale, while Weber saw the spread of rationalisation and capitalisation out of Western Europe to the

rest of the world (Ibid). There is not a shortage of past commentary with regards to the globalised world.

Today, discussion of globalisation in sociology is still very much on the academic agenda. Held et al (1999) identify three types of globalisation theory: hyperglobalism (Ohmae, 1995), which sees the world as extremely globalised with transnational corporations wielding more influence than the nation state; scepticism (Hirst and Thompson, 1999), which claims that the world is not globalised, or only moderately so; and transformationalism (Held et al, 1999; Giddens, 1990), which combines thoughts from the previous two positions. The transformationalist position allows more subtlety for dividing the world into certainties (into political, economic or cultural dimensions, for example) is useful only in an analytical sense – reality is a more holistic affair.

Giddens (1990), from a transformationalist position, gives a timeline of globalisation that helps put the phenomenon into some sort of context. From a starting point of Figure 1 (p61), globalisation expands from Europe to the world, and finds form in the dimensions of modernity displayed in Figure 2. For Giddens, the first phase of globalisation occurs between 1500 and 1960, where the institutional dimensions found in Europe are transported around the world via ocean-going trade, exploration and the expansion of empire. This phase is characterised by an increase in the pace and scope of change in society. The second phase, from 1960 onwards, sees the effects of instantaneous electronic communications, especially as a result of satellite technology, and the coming of global communications systems such as the international telephone network or eventually the Internet. Giddens argues that this situation creates more information and therefore more reflexivity in global society. 'Actions at a distance' can be seen: all social activity in the world becomes interconnected; industries relocate from one place to another; the buying of imported goods increases; an interplay between the local and the global springs up. These actions at a distance mean that globalisation is a complex and dialectical process, with inputs from all countries.

To reiterate, globalisation for Giddens is the intensification of global social relations that link distant localities so that local happenings are reciprocally shaped by events occurring many miles away. "This is a dialectical process because such local happenings may move in an obverse direction from the very distanciated relations that shape them. *Local transformation* is as much a part of globalisation as the lateral extension of social connections across time and space" (Giddens, 1990, p64). Local transformation, interaction and interdependency are key concepts in the study of globalisation (Robertson, 1992; Thompson, 1995; Waters, 2000).

But what are the causal factors? While reservations regarding the separation of the world into economic, cultural and political dimensions are well founded, an analysis of the motivating factors of globalisation often starts from one of these viewpoints. Giddens' analysis of the dimensions of modernity, the nation state, and the expansion of the nation state system, has been examined in Chapter One. The world capitalist economy must now bear further scrutiny. The nation state is a key actor in this thesis' theoretical framework but the actors within the globalised economy, particularly transnational corporations, are equally important. In order to judge how important, the concept of globalisation and its effects on the actions of nation states and business must be discussed, along with its contribution to what Castells calls the new 'informational economy' (Castells, 2000a).

Global capitalism and the informational economy

Castells proposes that the last 25 years has seen the emergence of an informational economy. It is informational in that it depends on applying knowledge-based information to all processes, and it is organised on a global scale. Crucially for his theory of the network society, all production and competition is played out in a network of business networks. The emergence of this new economy is a result of the information technology revolution that sprang out of America's west coast in the 1970s and the information-technology paradigm that makes information the key product of the production process. Because information technologies are at work in all domains of human activity, connections are established between all of these domains.

It is essential to point out that Castells' informational economy is different from Bell's post-industrial society. Bell believed that increases in information-related jobs in the second half of the twentieth century, and a worker surplus that moved towards service industries was evidence enough to declare a break with the past and the beginnings of a new information society. Castells takes issue with this, arguing that the evidence for the emergence of a post-industrial economy "is based on data for the 1909-1949 period of the US economy, namely they heyday of the American industrial economy" (Castells, 2000a, p80).

Instead, he offers the following alternative economic history. From the late 19th century to the Second World War Castells highlights steady, moderate economic growth, with some downturns. This is the period that sees the formation of the industrial economy. From 1950 to 1973 production growth accelerates, ushering in the mature period of industrialism, and then in the period 1973-1993 production growth slows down, even after the inclusion of information technology inputs and acceleration in pace of technological change. This is especially true in the area of production of services. Castells believes this is because there is a time lag between technological innovation and economic productivity (Castells, 2000a, p85). He illustrates this by showing that technological innovations are first used in the industries that are their source, as in computing for example, and that after adoption in their natural environment they later go on to diffuse amongst other industries and spread their benefits. In light of this, he suggests (at the turn of the millennium) that there could be hidden trends of 'explosive productivity' - growth in leading industries that is just waiting to happen. Additionally, he argues that there is considerable potential for error in the measurement of production, especially in the areas of software and research and development. This is in common with criticisms of Bell's post-industrial society (Webster, 1995) where the greyness of the 'services' classification has the effect of placing massage parlour workers, public administrators and cinema ushers in the same economic sector (Jones, 1980).

Regardless of how the impact of technological innovations is measured, there has been a shift in production patterns in the third period of Castells' timeline. Susan Strange (1996) argues that key changes in politics at the highest level and in the life chances of individuals everywhere are caused by the change in production structure of the world economy. As modernity progresses, with its inherent globalising tendencies, a change has occurred in production patterns, a move from local or national production to production for the world (or regional) market. For Strange, the market has become multinational.

Castells agrees, and details new business strategies to increase productivity and enhance profitability in the global economy including the search for new markets. He also echoes Giddens by identifying a key trend in the informational economy as being the international division of labour, buttressed by the internationalisation of production and production in multiple locations. Consequentially, competition in international trade is stimulated. These new business strategies are facilitated by information and communications technologies, for without them the standardisation and integration of financial markets on a global scale would not be possible. New technologies enable the global tracking of goods and people, enhance managerial mobility and administrative coordination and, furthermore, permit real time monitoring of all of these actions. Crucially, from the point of view of this research, in the 1990s the Internet became the backbone of this system.

The harnessing of information and communications technologies and the shift to international markets has arguably made political players of transnational corporations. Strange (1996) argues that this new profile for corporations is partly a result of state policies, for businesses and technologies could not have created the global economy on their own. Indeed, wealthy governments have been instrumental in creating this new economy, along with the International Monetary Fund (IMF), the World Trade Organisation (WTO) and the World Bank. Castells (2000a) points to three crucial policies: the deregulation of domestic economic activity (including financial markets); the liberalisation of international trade and investment; and the privatisation of publicly controlled companies. These policies arrived in the US in the early 1970s, the UK in the early 1980s, and the European Union in the middle of the 1980s. Countries in other areas of the world, in developed and developing regions, began to follow this economic doctrine too, aided by the supervising role of the IMF and WTO who made adherence to the tenets of deregulation and liberalisation conditional to joining their organisations (Stiglitz, 2002).

Castells and Strange have advanced reasons for the willingness of governments to give up their sovereignty to globalised rules and institutions. The perceived strategic interest of any given nation state is a contributing factor, along with the prevailing ideological context at the time. Furthermore, with more countries joining a free trade network the benefits theoretically increase but the costs of not joining increase too. Not joining could lead to ostracism and collapse (e.g. Peru in the 1980s), or an unwillingness to liberalise a nation state's economy to the required extent could lead to the imposition of strong sanctions from the WTO (Hunt, 2001; Rikowski, 2001).

With the prevalence of free trade policies, the influence of the IMF and WTO in shaping the global economy and the resulting power shift towards newly influential corporations, it is tempting to suggest that corporations are becoming more influential than the nation state (Ohmae, 1995; Arrighi, 1998). Strange (1996) thinks it unlikely that the power and influence of the state will disappear, but concedes that control of production does shift power, and that power in civil society relations can shift too. Diversification from mineral and agricultural production to processing, manufacturing and services, coupled with the multinational production techniques mentioned above and a general welcoming of foreign direct investment from governments around the world over the last 30 years (Global Policy Forum, 2003; UNCTAD, 2003) have greatly increased the reach and influence of transnational corporations.

Strange (1996) makes four hypotheses to back up the argument that power has shifted from nation states to transnational corporations. First, states have collectively moved out of production of goods and services due to the privatisation of heavy industry and the cutting back of government funds for research and development. In light of this, for transnational corporations, relationships with other transnational corporations are often more important than relations with governments, especially in terms of attracting business. Secondly, by relocating the manufacturing industry to developing countries (Klein, 2001), transnational corporations have become more involved with redistributing wealth to poorer nations and raising standards of living than states and international aid organisations. Thirdly, the management of labour conflicts has changed in that management-labour relations used to be seen as part of government public policy, at least up until the end of the 1960s in Europe and the US. Fluctuations in the financial markets and economic sector have left governments unable to guarantee job security and consequently labour relations have become more of a concern for the corporate sector. Pay bargaining, for example, increasingly takes place within firms. Finally, Strange points out a change in the corporation-nation state tax relation, with transnational corporations becoming both tax avoiders and taxers. States have the right to tax, but are unable to enforce this right due to loopholes and legal wrangling courtesy of specially employed tax lawyers. The failure of governments to devise an appropriate tax regime imposes serious costs on them and moves the tax burden increasingly onto individual citizens. At the same time, corporations pay less tax and distribute money within the company as they see fit in the form of bonuses or stock options. These four hypotheses suggest that transnational corporations have encroached on nation state limits of power in that they are increasingly operating as a parallel authority alongside governments.

Alternative drivers of globalisation

Strange and Castells are not the only commentators to link the expansion of capitalism with the phenomenon of globalisation. Wallerstein (1974) however, with his world system theory, changes the unit of analysis from nation states to transnational social spaces and makes the investigatory frame of reference the overarching capitalist world system. Following Marx, Durkheim and Weber, Wallerstein asserts that the logic of capitalism is necessarily global, and everything – from a society, a government, a company or a person must insert and assert itself within a single division of labour. The world is then divided up into three divisions, with a core of countries reaping most of the rewards of the system; a semi-periphery of countries who feed and strengthen the centre and want to benefit more; and a periphery of countries who are exploited by the core countries for natural and human resources. Due to Wallerstein's emphasis on transnational social spaces, the three areas are seen as being connected by the demands of the capitalist system, with resources flowing into the centre from the edges. Arrighi (1998) continues on from Wallerstein, seeing globalisation as a development of capitalism that is intertwined with the idea of intense inter-state competition for increasingly volatile capital, and a tighter subordination of most states to the dictates of capitalist agencies. In this situation a conflict arises between the political and economic dimensions, or between nation states and transnational corporations – as Strange (1996) also outlines.

Many scholars have lined up to add to the debate surrounding nation states versus transnational corporations. Rosenau (1990) describes a globalised world where the domination of the nation state in politics is finished. In his conception of a post-international political era, he declares that states now have to share the arena of global politics with a variety of transnational actors including corporations, non-governmental organisations and bodies such as the IMF and WTO. World society has two levels therefore, the community of states, where rules and diplomacy and power are still key to the wrangling between nation states; and an area of transnational sub-politics where transnational actors operate. Rosenau calls this polycentric world politics, where all actors compete with one another to achieve their aims.

Gilpin (1987), on the other hand, dismisses the idea of a new era of world politics and declares no novelty in the current global situation. Nation states are more linked to each other than ever before and national politics remains of the highest importance – indeed it creates the permissive global order that results in globalisation. Moreover, economic globalisation is entirely dependent on a hegemonic power, or at least the tacit consent of a core of states (echoing Wallerstein) that permit the existence of a world market. Held (1999) disagrees with this analysis and believes that globalisation is making obsolete the concept of political sovereignty that Gilpin presumes exists. National politics is losing its sovereignty through the internationalisation of political decision making and the growing interdependence of security policy. Consequentially, the boundaries of domestic politics are blurring, affecting the context of policies at a national level along with the legal frameworks and administrative practices of governments, thus obscuring the lines of responsibility and accountability of nation states. As nation states have to work in an increasingly complex international system their autonomy is limited and their sovereignty impinged by regional and international agencies such as the European Union, the United Nations or NATO.

Rosenau, Gilpin and Held share a common bond in that they place an emphasis on the political aspects of globalisation. Whether or not the globalised world exists in a pre-eminence of polycentric world politics, national politics or the signing of international treaties, it is apparent that economics is not the only contributing factor to globalisation. There are other scholars who are less keen to focus exclusively on capitalism or politics as the dominant logic of globalisation. Robins (1991), for example, seeks to place emphasis on the cultural changes that accompany economic globalisation. Culture is a set of shared meanings contrasting other sets of shared meanings. Language – a system of signs - is the medium in which people 'make sense' of 'things' and produce and exchange meaning. Consequently, meaning can only be dispersed and shared through common access to language or common cultural denominators (Gurnah, 1997). Swindler (1986) calls culture a toolbox of practices (e.g. science and religion) that help people understand and act upon the world (e.g. technology and prayer), and a source of emotional symbols (e.g. national identity) and values (e.g. freedom and justice) which orientate and justify our actions. Cultural practices are assumed to differ between groups, and certainly between nation states. Culture is interactive by nature, in that it can be the source of change but also affected by change, and it is order-maintaining, or order-transforming (Holton, 1998).

Cultural globalisation stresses the consequences of an increasingly interconnected world for cultures, identities and lifestyles and points out what is often referred to as the 'McDonaldisation' of the world – a convergence of global culture in a single

commodity world, where indigenous cultures are uprooted and replaced by the dominance of western consumer culture. This is a viewpoint echoed in Schiller's thinking on American cultural imperialism (Schiller, 1976) and is often referred to as a process of 'homogenisation' (Holton, 1998). Said (2003) is a proponent of the view that cultural construction by the West is the basis for cultural domination.

Alternatively, the resistance of the globalisation process by a combination of nationalism and ethnicity is known as 'polarisation' (Holton, 1998). Giddens (1989) mentions the backlash against imposition of foreign cultures that can be mobilised through nationalist feelings, and Barber's *Jihad vs McWorld* (Barber, 1996) articulates the point that at present there is considered to be a particular polarisation between the West and Islam. A third viewpoint, 'Hybridisation', is a term used to refer to the emergence of global cultural forms that are transnational but not necessarily capitalism-dominated (Hannerz, 1990). Flows of people, ideas and cultural styles across borders are emphasised in the hybridisation of culture and regional influences are highlighted over the influence of one dominant culture over the world e.g. the influence of Mexico in Latin America, or Japan in East Asia.

The role of information and communications technologies in globalisation

Whether or not culture, economics or politics is the key driver behind the process of globalisation, it is important to emphasise the contribution of technology to changes in global society, especially since the 19th century. Thompson (1995) argues that in order for any organised interactive activities to take place in a global arena there have to be interconnected communications networks structured on a global scale. He points to three key developments since the 19th century that facilitated this situation: the laying of underwater cable by the European powers; the formation of international news agencies and the division of the world into spheres of operations; and the creation of organisations that allocate electro-magnetic spectrum and increase the capacity of information distributors.

Castells (2000a) moves discussion of technologies forward to the 20th century where the global network of communications is embedded deeper into society as a result of the technological revolution that took place in America in the 1970s. Without the development of global communications networks as a result of the infrastructure building of the 19th century and the advances in and convergences of technology of the 20th, the process of globalisation – as exemplified by the intensification of global relations, be they social, financial or political – would have failed to take off. Information and communications technologies, while not the fundamental cause of globalisation, are nonetheless a key dynamic in the process (Rosenau, 1990). Within the process of cultural globalisation, for example, the ability of television and radio to send images, sounds and information worldwide greatly contributes to the spread of ideas and cultural styles across borders. Economic globalisation and the emergence of the informational economy would not be possible without global information and communications technologies such as the Internet, or the software that drives the global financial markets. Likewise, international politics can only be made possible by efficient global communications networks between all parties.

Schiller (1976; 1996) takes these developments and looks at their motivation, declaring the globalisation of communications to be driven by the commercial interests of large

American transnational corporations. Schiller sees information and communications as core elements of established capitalist endeavour. While they may have come to play a greater role in capitalism they have not changed the central concepts or displaced the established priorities. Drahos and Braithwaite (2002) and McChesney (2000) join Schiller in citing the presence of market criteria in information developments, believing innovations in the information and communications sector to be largely driven by market forces. A recent example of this might be the movement of American technology firms into the area of homeland security in the wake of the September 11th 2001 terrorist attacks (Manjoo, 2004; Mieszkowski 2003). This area, representative of the link between military power and surveillance present in Giddens' dimensions of modernity, is where profit can now be found (Email from Peizer, 2004a; 2004b). Schiller (1996) also believes information technologies to be the driving force behind 'information imperialism', the selling of a primarily American viewpoint to the rest of the world. Citing the UNESCO call for a 'New World Information Order' in the 1980s as proof of the existence of such imperialism, he sees corporate capitalism as the main benefactors of the increase in information and information technologies around the world. Due to market forces, information is created for and made available to those able to pay, thus maintaining a hierarchical structure that gives more access to information to those at the top.

While Schiller takes a very firm stand on the presence of capitalist imperatives in the information society and the increasingly commodified market for information, the reality, as ever, is likely to be somewhat more nuanced. Certainly there is some debate as to whether or not technologies are socially neutral or influenced by the forces behind their creation (Robins and Webster, 1999; Webster, 1995; Winner, 1986). For Castells it is more of a grey area, with information and communications technologies remaining open-ended in their historical development. He quotes Melvin Kranzberg with regards to the relationship between technology and society: "Technology is neither good not bad, nor is it neutral" (Castells, 2000a, p76).

The concept of simultaneous globalisation and fragmentation

The purpose of this thesis is not to advance a case for the best account of globalisation. The reality behind globalisation is a combination of factors that conspire to bring about the intensification of social relations that Giddens highlights. As Beck states, it is in the interplay of different perspectives that "a plural sociology of globalisation comes into view" (Beck, 2000, p31). What is important to note is a concern, in all the theoretical viewpoints discussed above, with two central actors: the nation state and the players in the global economy, the transnational corporations. These actors take centre stage in the theoretical framework of this thesis and represent the two most important forces contributing to the future of the Internet as a provider of information to its users. To further explore why they are so important it is necessary to outline a key concept for the thesis, simultaneous globalisation and fragmentation, two conflicting trends of identity that are capable of taking the Internet towards a utopian or dystopian future (Shapiro, 2000).

Castells (1997) believes globalisation and identity are the two great and conflicting trends now structuring the world. Alongside the global transformation of capitalism and the changes in the nation state system there has been a powerful surge in expressions of cultural identity. Identity is people's source of meaning and experience, and it is

constructed through a process of individuation that draws from history, geography and biology, along with materials from collective memory, power relationships and religious revelations (Castells, 1997). Any social construction of identity always takes place in a context marked by power relationships. Individuals, social groups and societies take the building materials, process them and then rearrange them according to social determinations and cultural projects rooted in social structure and time/space framework.

Castells identifies three distinct forms of identity building. Legitimising identities are introduced by the dominant institutions of society to extend and rationalise domination over social actions. Legitimising identities can be associated with various forms of nationalism, such as the propaganda machines of closed regimes. Resistance identities, on the other hand, are generated by actors devalued or stigmatised by the logic of control. This is resistance on the basis of holding different principles to the dominant institutions of society. The third type, project identity, is taken on by social actors seeking to build a new identity in order to redefine their position in society by transforming its overall structure. An example of this might be the gay rights movement seeking to stake out a place in society for itself, thus challenging the status quo.

Legitimising identities lead to a civil society with institutions that enforce and rationalise sources of structural domination. It is possible, as discussed in Chapter Four, that the Internet could be used as one of these institutions. Resistance identities lead to constructions of collective resistance in the form of communes or communities. In these institutions it is possible for nationalism or fundamentalism to breed. Project identity produces subjects or collective actors "through which individuals reach holistic meaning in their experience" (Castells, 1997, p10).

In *The Power of Identity* (1997), Castells makes a case that the constitution of identities, project identities especially, is taking a different route in the network society, one that emerges from communal resistance to prevailing social trends such as cultural globalisation. The result of this resistance is the creation of cultural communes of religion, nationalism or territorial foundations as an alternative way to construct meaning in society. These communes, an example of which might be the Zapatista movement in Chiapas, Mexico (Marcos, 2001), are characterised by three features. First, they are a reaction to prevailing social trends, such as a resistance to immigration with a form of nationalism. Second, they provide defensive identities in the face of a hostile world. Third, communes are culturally constituted – they are organised around a specific set of values whose meaning and sharing are marked by precise codes of self-identification: for example, in a religious commune there is the community of believers; in a nationalist commune the icons of nationalism; in a territorial commune the specific locality concerned. These three features can be seen in online as well as 'real world' communties, such as the way terrorists use the Internet for resistance and propaganda activities (Weiman, 2004).

Castells believes these identities are by and large defensive reactions to globalisation, networking and flexibility (especially in terms of labour) and the crisis of the patriarchal family (Castells, 1997). He also believes that the world today is no longer able to organise around legitimising identities due to people's lack of faith in civil society and the political institutions present in it. Instead, forms of identity building are organised around resistance identity. It may be that resistance identities will go on to become

project identities and eventually stake out a legitimate and accepted place within greater society, and this could potentially become the main source of social change in the coming years. However, if this does not happen it is possible that resistance communities will close themselves off to the outside world, creating walled gardens of agreed-upon opinion where alternative beliefs are not valued and one doctrine rules all (Shapiro, 2000; Sunstein, 2002).

Drawing on the above thinking, it is possible to suggest that as the processes of globalisation seep further into everyday life for people all around the world, as globalisation increases, so does confusion regarding identity, and so does the processes of fragmentation and, in some ways, retreat from the 'other'. Nationalism, for example, might be seen as a desire for an identity securely anchored in the past (Giddens, 1989). Alternatively it could be seen as assertiveness against the 'other', or a reaction against inequality. Nairn has said that "nationalism has its source in the uneven development of regions within the world capitalist economy" (in Giddens, 1989, p 213).

Giddens, in *The Nation State and Violence* (1989), looks for four characteristics in an account of nationalism: its political character, in association with the nation state itself; its ideological characteristics which are tied up in the processes of class domination within the state; its psychological dynamics or the sentiments and attitudes involved; and its symbolic content including nationalist iconography. Nationalism, he says, helps naturalise the recency and contingency of the nation state by providing it with myths of origin. When these myths of origin, in whatever form they take, are blurred, whether it be through a degree of ideological competition or a calculated rejection of nationalist tendencies on the part of dominant groups in society, then an element of confusion may begin to take hold of certain populations, or parts of populations.

This state of confusion may occur because the processes of globalisation may lead to intensification of mutual dependence beyond national boundaries. What were once separate worlds are replaced by transnational interdependence. Robertson (1992) believes the result of this situation is that the "new human condition is a conscious attention to the globality and fragility of the human condition at the [beginning of the 21st century]" (Beck, 2000, p47). The world today has been opened up cross-culturally; both through cross cultural ways of life such as migration and immigration, but also through cross-cultural symbols too. Robertson therefore argues that the local and global are not mutually exclusive – the local must be understood as an aspect of the global. Robertson's theory of 'glocalisation' is an alternative to previous theories of cultural globalisation, allowing a more nuanced, holistic viewpoint. It could also explain an attitude of resistance identity on behalf of some communities that seeks to retain some connection with what went before – whether it was a golden age of nationalism, religious purity or territorial independence.

The nation state as an individual actor in a globalised world

In a globalised world where the nation state is weakened and statism is on the demise it might be expected that the processes of fragmentation would be able to run unchecked throughout the nation state system. Resistance identities would flourish in the face of governments perceived to be unwilling, or unable, to stand up to the attacks on established values as a result of globalisation. As Castells says, "when the world

becomes too big to be controlled, social actors aim at shrinking it back to their size and reach" (Castells, 1997, p66).

While this scenario has a degree of truth, as evidenced in pockets of nationalism that sprang up in the 1990s in the Balkan region for example, or in the anti-globalisation movement that dogs the actions of the IMF and WTO (Klein, 1999), it would be unwise to assume that the downfall of the nation state is set in stone. Castells (1997) counters the views of Ohmae (1995), Rosenau (1990) and Strange (1996) with regards to the dwindling influence of the nation state by asserting that while states might be losing their power they are not losing their influence. State control of space and time is increasingly bypassed by global forms of capital, goods, services, technologies, communications and information. Furthermore it is being undermined by supranational organisations in the global arena. This situation has come about, argues Castells, because the nation state is unable to chart a course between globalised networks and the challenge of singular identities.

With monetary activities increasingly organised on a supranational level it is more difficult for national governments to completely control the economy. Compounding this is the change in the production structure of the world economy discussed above, and the multinational world market dominated by transnational corporations. States do retain some power however – there is still a substantial economic role for the state requiring additional financing besides taxation. The nation state also continues to have a regulatory role in domestic financial markets, and it still has mechanisms for easing or blocking movements of capital, labour or even information.

Media and communications were previously an anchoring tool of the state but this situation has also changed thanks to the globalisation and interlocking of media ownership and the flexibility and pervasiveness of technology. The liberalisation of media that occurred at the end of the 20th century contributed to a substantial transfer of power to the private sector, allowing a freshly independent media sector to encourage cross-border information flows and scrutinize the actions of states more than ever before. And yet it is still possible for nation states to retain an element of control – witness the demands China places on foreign technology firms who want to invest in the communications market (The Guardian, 2002a; Castells, 1997).

Castells also points out the globalisation of criminal activity as another way that nation state governance can be affected. The global linkage of organised crime, and the new scale and dynamism of the criminal economy is a tough barrier for nation states to overcome alone. Money laundering especially is a problem, as it impacts on the global financial markets – making it an issue for supranational economic bodies as well. Faced with these problems it is unsurprising that some commentators see the power of the nation state on the slide. But an increasing amount of multilateralism on the part of nation states is seeing interests defended and the durability of the nation state institution ensured. Co-operation in terms of environmental, economic and security policies, especially in the past three years to 2004, may involve more flexibility in the face of the global challenges outlined above but a substantial degree of individual sovereignty is retained by nation states in any negotiations. Witness the importance of even the smallest members of the UN Security Council in the run up to war with Iraq in 2003 (Beaumont et al, 2003). Additionally, the pervasiveness of surveillance in modern

society (Brin, 1998) and the post-September 11th attitude to deviance has placed a great deal of control back into the hands of the nation state.

The continuing importance of the nation state is stressed by Hirst and Thompson (1999), who assert that the market simply cannot outplay the state in many areas. They accept that the role of the nation state has changed - in that Mutually Assured Destruction and nuclear war forever alters the means of violence and that the nation state is now one cog in big wheel of actors - but they take issue with those who champion the nation state above all else. In its role as a cog, the state co-operates internationally through membership of international regulatory bodies or regional trade bodies, and by helping form regional legislation. Within its borders it promotes national policies for trade competition and administers the legal system. The state, they say, is the only legitimate actor able to grant sovereignty to different levels of regional or international governance.

Goldblatt et al (1997) solidify the case for the ongoing significance of the nation state by saying that economic globalisation is a term somehow drowned by hype. Empirically, they say, economic activity is still restricted on a global scale and many so called 'global' changes are in fact 'regional'. Reiterating Hirst and Thompson, the authors stress that only the nation state can institute and co-ordinate technology, infrastructure and training policies necessary for an internationally competitive national economy that is attractive to capital. For them, globalisation "denotes a shift in the spatial form and extent of human organisation and interaction to a *transcontinental* or *inter-regional* level" (Ibid, p271). With regard to the nation state, power and flows and interaction and networks have never remained solely within borders, and interaction outside of borders has never been uniform. Trade networks are more extensive than in the 19th century perhaps, but today's globalised markets are still not completely open. Likewise, the authors say that transnational corporations are not truly global, in that regular relocation is too expensive and market presence must be maintained for financial success. They accept that their interests and actions are highly consequential but question whether their patterns of investment are more regional than global.

For Hirst and Thompson, Goldblatt et al, power is a relative concept, with the balance of power shifting as a result of policies pursued and actors involved. Nation states can be market actors too, and regulators, taxers and spenders. Globalisation has not rendered any nation state policy impossible and nor has it diminished autonomy, as can be seen in protectionist trade actions. The phenomenon of globalisation has transformed the political arena that states operate in, and the resulting alteration of economic and political interests – and the relative economic and social power of social classes – has made the actions of more recent actors such as transnational corporations difficult for nation states to ignore. Nation states remain immensely powerful however, thanks to economic resources, administrative power, surveillance and a continuing control of the means of violence.

Of great consequence to the background of this thesis are the events of September 11th 2001 when terrorists destroyed the World Trade Centre in New York. The response to the events of this day from the nation states of the world is indicative of exactly why nation states must still be considered a central actor to any conception of globalisation, or any theoretical framework concerned to deal with a global scale of research. In the immediate aftermath of the attacks it was nation states lining up to issue statements

condemning the terrorists' actions and it was nation states asked to form a global coalition to prosecute a war on terror (Hall et al, 2001; BBC, 2003b). In the last three years there has been international co-operation between nation states on a great scale to tighten anti-terrorism laws, further terrorism investigations and tighten national security (Statewatch, 2004a). In the two episodes of direct military action that have taken place since September 11th 2001, in Afghanistan and in Iraq, international politics at the United Nations and in other regional theatres such as the European Union has been key to framing proceedings. Validity and invalidity for military undertakings has been judged by a system of nation states, with corporate approval unlooked for.

Warfare on the scale seen in Afghanistan and Iraq in the last three years is the preserve of the (wealthy) nation state. Control of the means of violence is therefore still in the hands of the state. The corporate sector however, is not uninvolved in the war on terror, and indeed its involvement is crucial if nation states are to achieve their aims in the aftermath of conflict. Corporations and the financial sector are connected to the war on terror through co-operation with nation states, especially in the areas of money laundering and financial backing for terrorist networks (Clark, A., Finch, J., 2001). Closer working ties can also be seen between the aviation industry and national security agencies. Perhaps of greatest consequence, and an implicit admittance of the economic power of the corporate sector, it is essential that private companies are involved in the post-conflict rebuilding of nation states such as Iraq, for the coffers and administrative resources of nation states can only run so deep (BBC, 2003c)

The theoretical framework of this thesis sees nation states and corporations as fundamental players in the globalised world. Arguments proposed by Arrighi (1998), Ohmae (1995) and Strange (1996) have value in advancing the status of the corporate sector but do not persuade in convincing that the power of the transnational corporations in the global economy irrevocably reduces the influence of the nation state. As Hirst and Thompson (1999), and Goldblatt et al (1997) point out, the nation state is still capable of taking an influential role on a global level. Castells (1997) too, talks of the nation state's lasting influence. Consequentially, for the purposes of the theoretical framework, both are afforded an equal status as actor in considering how barriers to information access on the Internet are created and maintained. As Giddens (1989) puts it, the sovereignty of the nation state is not indivisible, and it can be affected by the geopolitical position of states, military strength and, to a lesser degree, by the international division of labour that is conditioned by changes in the global scale of production. Equally, transnational corporations cannot totally submerge sovereignty of nation states, for despite their financial reserves they do not have territory, or control over means of violence. Both nation state and transnational corporation are actors on the global stage, and in this sense – and for the purposes of the theoretical framework - the political is separate from the economic. This is not to advocate an anti-holistic viewpoint a la Bell, but to clearly delimit the central priorities of the two actors so as to more accurately identify their spheres of influence with regards to influencing information flow on the Internet. Two equal actors, with different, but overlapping, preoccupations.

The promise of the Internet

The nature of the Internet, and its use by the individual, the nation state and the business sector must now be considered. To do this it is appropriate to explore how the Internet is

regarded from a theoretical point of view, with discussion of how the Internet has been perceived as a conduit for both utopian and dystopian visions of the future.

For Castells (2001), the Internet is the technological basis for the predominant organisational form today, the network. It is capable of facilitating organisations as diverse as Wall Street traders, the United Nations, Al-Qaeda or anti-globalisation protesters. Gore (1994) foresaw an Internet that was an 'information superhighway', perfectly able to take mankind towards a new Athenian age of democracy. Barlow (1996) declared that the Internet would be untouchable by governments, where "anyone, anywhere may express his or her beliefs, no matter how singular, without fear of being coerced into silence or conformity". And yet Schiller (1996) predicted the Internet would go the way of other communications technologies – colonised by the forces behind the American media landscape that promote a corporate logic and the pursuit of profit. Somewhere between Barlow and Schiller is Lessig (2002) who argues that, for a while, the Internet *was* an 'innovation commons' with a neutral network platform that encouraged new advances in communications, information dissemination and business practice. This platform is now under siege.

Who is right? The extreme positions taken by some commentators and theorists regarding the nature of the Internet and its potential uses in society can lead a reader to believe that the technology will either solve all the problems of the world or it will render society fragmented and individuals isolated as face to face interactions are supplanted by computer-mediated ones (Bimber, 2000). The reality, as ever, lies somewhere between the two positions, although, as Fisher and Wright (2001) point out, it is the novelty of the technology that has led to such polar positions being taken over the past ten years. Using Ogburn's theory of 'cultural lag' (Ogburn, 1964), they explain how the effects of a new technology will not be apparent to social actors for some time after it has been introduced to a society. Before the technology has achieved near-total diffusion into society at the end of Ogburn's lag, accounts of technology are likely to reflect authors' own preferences and values.

A selection of the polarised viewpoints that characterised early discussion of the Internet and society are worth revisiting in order to discover exactly what effects it was thought the new technology would have. Prior to this, the 'Internet' must be defined. DiMaggio et al (2001) describe the Internet as a network of networks linking people and information through computers and other digital devices facilitating person-to-person communication and information retrieval. In this case, the Internet is both the technical infrastructure (public TCP/IP networks[5], large scale networks such as America Online, foundational protocols) and the uses of this infrastructure (the World Wide Web, email, chatrooms etc.). As shall be shown, other writers have sought to further define the types of communication and information retrieval processes that take place online, as well as analysing further the limits of the technical infrastructure. DiMaggio et al's definition, however, provides a firm base for other theories of the Internet to be considered.

A good way to understand a utopian vision of the future is to consider the idea of a global information infrastructure (Borgman, 2000a; GII Commission, 1997; Gore, 1994). The global information infrastructure, which is similar to Castells' multimedia

[5] Transmission Control Protocol/Internet Protocol is the basic communication language or protocol of the Internet

environment discussed in Chapter One, is conceived as a network of integrated telecommunications and computer networks serving up every imaginable information and communication application (Borgman**,** 2000a). It has been proposed by such organisations as the ITU and the G-7 nations. With the implementation of such a network, the possibility of an information society for everyone – with equal access to everything the network has to offer – is offered. This will happen because of the speed and diffusion of network technologies and the end of time/space significance that corresponds with more activities – communication, information retrieval, commerce – taking place online more frequently.

The global information infrastructure differs from the Internet in that it is more than a network of networks. A true global information infrastructure would incorporate closed networks such as cable television and would include all computers, software, information resources, developers and producers. Borgman describes it thus: "a technical framework of computing and communications technologies, information content, services, and people, all of which interact in complex and often unpredictable ways" (Borgman, 2000b, p22). No single entity will own it, manage it or organize it, but governments, public and private organizations and millions of people will contribute to it and use it (Gleick, 1994).

The reality of a global information infrastructure may be some way off, but this does not lessen its value as a means of explaining how the emergence of Internet technology led thinkers to dream of a utopian future with universal network. To get to this place of imagining Sassen (1998) argues that the Internet has come through three phases. From 1969 to the 1980s the Internet was being used mostly by scientists and government agencies. This community invented the communications standards and protocols of the net and ensured access for themselves. From the 1980s to 1993 the Internet opens up to a larger and less specialised community. The democratic and open character of the Internet is strengthened and it becomes a space of distributed power that limits the possibilities of authoritarian and monopoly control. This is brought about by early hacker culture that strengthened the openness and decentralisation of the Internet and introduced a free software ethos to the community of users. The third phase begins in 1993 when the World Wide Web is introduced and a further crucial date is 1995 - when business discovers the Internet and the commercialisation of cyberspace begins.

If a further phase is added – the beginning of adolescence for the Internet that sees the number of web sites rise from 20,000 in 1995 to 10 million in 2000 (DiMaggio et al, 2001) – then a background has been constructed for discourse regarding the possibilities of the technology and the potential for a utopian online future. The introduction of new technologies into society brings with it much hype, and many promises that are later not kept (Fisher and Wright, 2001). A utopian perspective, in this case, foresees technological solutions to social problems. The Internet, it has been argued (Budge, 1996; Dyson et al, 1994; Ward, 1997; Winston, 1992), will have positive effects on democratic participation in society and increase civic engagement by increasing communication across geographic and social boundaries. New spaces of deliberation and collective action will emerge; citizen-government interaction will assume a closer relationship and a sense of community will be reinforced through online activities (Rheingold, 2000). New technology will allow a power shift from the public sector through the private to the individual. New technologies will put individual users in charge (Shapiro, 2000; Weston, 1994).

It is the unique nature of the Internet that is responsible for such ambitious commentaries. According to Castells (2001), the architecture of the Internet is based on three principles: a decentralized network structure; distributed computing power throughout the nodes of the network; and a redundancy of function in the network in order to minimize the risk of disconnection. These three principles in effect created a network that was neutral and open to innovation – and able to develop as its users wanted it to (Lessig, 2002). It embodied the principles of its creators, the developers of ARPANET who were infused with the values of individual freedom, independent thinking, sharing and co-operation (Castells, 2001).

The architecture of the Internet gives rise to many new possibilities of communication, broadcast and information retrieval. Shapiro (2000) gives the Internet four features that mark it as different from any information and communications technologies that have come before. The Internet has many-to-many interactivity, not only one to one (the telephone, the telegram) or one to many (broadcast mediums such as television, newspapers or the radio). Email can be sent to individuals or groups, and web sites can be viewed by huge numbers of individuals. A major difference is the interactivity of the medium, for users can be creators and disseminators of content as well as consumers. The second feature is that Internet content is digital, facilitating flexible use of information, easy manipulation, compression, transport and storage. Crucially, this means content can be perfectly replicated, many times. The third code feature is that the Internet is a distributed, packet-based network. This means that information can travel from place to place without having to return to a central point, giving users the ability to dictate the flow of information and therefore bypass gatekeepers or route around censorship (Elmer-Dewitt, 1993). Finally, the Internet is interoperable and open to all comers. It is not a series of small, exclusive networks that need permission to be utilized (although this does not mean such networks do not exist). In a single network there is more value for communication, in that anyone can communicate with anyone else. This is a result of the Internet's hardware and software being designed so that information can flow freely through the network without bottlenecks or barriers. Crucial to the construction of this situation is the fact that the basic protocol of information exchange on the Internet – TCP/IP – is non-proprietary and cannot be controlled by a single entity.

These features have led to commentators making great claims for the potential of the Internet. Access to the network lowers the cost of information and enhances the life chances of the dispossessed and those on low incomes (Anderson et al, 1995). The ability to undertake more tasks online, such as research, shopping or banking for example, will make people more productive and efficient as a result of time/space restrictions being circumvented. Consequently, users will find increases in time and decreases in stress. The Internet will have a great political effect, with a re-engaged, more deliberative, more equitable political community as a result of the Internet lowering the behavioural costs of accessing information (Browning, 1996; Negroponte, 1995). In organisations, the Internet will give more flexibility and allow for decentralised decision-making leading to greater efficiency. The effects of the technology will be felt culturally too, with lower costs to market entry in areas like music and publishing, and changes in packaging and distribution (Ian, 2002).

The Internet as public sphere

Of particular interest for this dissertation are the claims advanced for the Internet as a new public sphere, and the opinion that the Internet will revitalise democracy. As discussed in further depth in Chapter Three, libraries play a key role as facilitators of access to information within the community (Sturges, 2001). Information is core to the public sphere, as it facilitates open debate, critical scrutiny and full reportage. In order to function effectively the public sphere, in Habermas' (1989) terms, requires something akin to the concept of 'open government' – an availability of information through channels open to the public. Public libraries – as publicly funded institutions supposedly devoid of political interest, staffed by unprejudiced professionals – are one of these channels. If the Internet can function as a public sphere then this development is of undoubted interest to libraries as providers of access to information.

The public sphere is an idealised communication venue into which all people can freely enter. Through discussions in this sphere important civic decisions are made, meaning that the public sphere is a fundamental aspect of democratic systems (Schuler, 2000). Habermas' original conception of the public sphere has been exposed to criticism over time on the grounds that large portions of society are excluded from participation due to the domination of the sphere by white, property owning males and western ideals (Schuler, Ibid; Kellner, No date). If the Internet can help new social movements and oppositional groups expand the field of democratic politics then a revitalised public sphere becomes possible. Kellner (1997) proposes a reformulation and expansion of the public sphere as a result of developments in information and communications technologies. This new sphere will continue to be a site of information, discussion, contestation, political struggle and organisation but it will be enriched by new types of online interaction courtesy of new cyberspaces and forms of communication based on the potential of Shapiro's four code features (Shapiro, 2000).

Studies of the Internet as public sphere have been undertaken in light of propositions such as this. O' Baoill (2000) has presented a study of an Internet discussion forum as public sphere which used three major features of Habermas' public sphere: universal access, rational debate and disregard for rank. Universal access to the sphere was found to be lacking, although it is possible for vast numbers of people to participate in discussions thanks to the way the Internet removes geographic, and to a certain degree temporal, restrictions on accessing debates. Any participant could submit a topic for discussion but decisions regarding what would be discussed online rested with the forum staff. While rational debate online was of a dubious nature, perhaps in part to the ability of participants to remain anonymous and the limited time allowed for discussions to develop and reach consensus, O' Baoill concluded that the absence of 'face' and the need for participant's text to stand on its own led to the disregarding of rank.

Dahlberg (2001) goes further with a six-pronged examination of the Internet and the public sphere. If parts of the Internet are considered to constitute a public sphere, or public sphericules as Gitlin (1998) would have it, then they must be autonomous from state and economic power[6]. This is not the case with large portions of the Internet which are increasingly commodified or suffering from state interference (Boas and Kalathil,

[6] Public sphericules are "Segmented spheres of assimilation which have their own dynamics and forms of constitution" (Gitlin, 1998)

2003; Zittrain and Edelman, 2002a, 2002b), but Dahlberg concludes that some spaces do exist. He also allows for the existence of rational debate, and a degree of reflexivity, but provides evidence from Wilhem (1999), Hill and Hughes (1998) and Katz (1997) that suggests confrontation, misinformation and insult characterize many of the public forums online. In light of this, Gitlin (1998) suggests that the Internet will support 'partial publics' – context specific theatres of argument – and thematically restricted domains which, while by no means 'mass' in their reach, are nonetheless able to provide a space for the formation of pre-institutional (i.e. before the traditional mass media) forms of public opinion.

Due to the fact that debate, regardless of the size of the audience or medium (email, listservs, newsgroups, instant messaging or moderated forum), is occurring online it appears that the idea of the public sphere and the Internet do have a lot in common. Referring to Habermas' opinions on the decline of the public sphere, and accepting that computer mediated communication is different to face to face communication, Holmes (2002) makes the case for the revitalisation of the public sphere in a new form, albeit one in its infancy. It is less the case, he says, "that the contemporary public sphere is breaking down and becoming more fragmented as is the fact that is *sustained* across increasingly more complex, dynamic and global kinds of communications environments" (Holmes, 2002, p12, emphasis added).

The Internet and democracy

In the same way as the Internet as public sphere interests librarians as providers of information access, the potential for the Internet to revitalise democracy is also of great consequence. Habermas, in his discussion of the public sphere, has suggested that with greater access to information comes greater participation in the democratic process (Habermas, 1989). The furthering of democracy could therefore be argued to be one of libraries' key aims, as the accumulating and organising of information resources, combined with provision of access to them, makes the library service a key instrument in the democratic process (Byrne, 2003a). Indeed, the IFLA/UNESCO public library guidelines stress this role for libraries, highlighting the plurality of ideas and diversity of opinion that should be found in a library's collection (IFLA/UNESCO, 2001).

The potential of the Internet as a democratic tool has been widely noted (Bimber, 2000; Browning, 1996; Negroponte, 1995; Wriston, 1997). The International Institute for Democracy and Electoral Assistance (IDEA) states that a strong democratic system rests on a balance between an accountable government, an open economy and a vibrant civil society (IDEA, 2001). The use of the Internet as a new information and communication tool can reinvigorate the democratic process and help citizens become more informed, articulate and active in public affairs. It can also help governments become more transparent and open with voters, increasing government-people communication and co-operation.

IDEA lay out very clearly the areas where the Internet might be able to make a difference to democracy, although there are flipsides to many of the proposals. On an organisational level, use of the Internet can help governments facilitate better inter-departmental co-ordination, and greatly enhance procurement and delivery of services to citizens and businesses. Citizens can see the political process behind governmental decisions a lot easier. Internet technology could provide more opportunities for direct

democracy following this, as citizens may in future be able to vote online in cheaper, more efficient elections. The same technology might enable smaller parties to compete with fewer resources, energizing party activists, gaining voter feedback and publicizing political positions from an online platform. Democracy at a local level could also be reinvigorated with activists using web sites or email to create a greater awareness of local issues. Social capital – the networks and norms of reciprocity and trust that link individuals to societies – could be transformed by empowering civil society organizations and giving new social movements a presence online. On a wider level, the Internet could be used to open up authoritarian regimes from the inside, by helping grassroots activists and organizations organize and disseminate information. Totalitarian regimes, on the other hand, might be best undermined by exile groups using the Internet to gain support for a cause, and organize the diaspora against the authorities[7].

Inequality and control

It is unquestionable that the Internet has fired the minds of critical theorists, technological determinists and futurists who believe technological change has effects on political deliberation and the integrity of civil society (DiMaggio et al, 2001). At the same time however, other viewpoints towards Internet technology exist that focus on the downsides of the new technology and the potential for abuse, heightened inequality and control. Kellner (1997) points out that a backlash against computer technology dates back to the 1960s and more recently authors such as Simpson (1995), Kroker and Weinstein (1994), Stoll (1995) and the Unabomber (Kaczynski, 1995), to name but a handful, have contributed to the techno-utopia/techno-dystopia debate.

Leaving aside the conflict between the two sides for a moment, the question of whether or not the Internet will be able to fulfil the predictions of the techno-utopians will depend a great deal on the extent of access to the technology. Although discussed in greater depth in Chapter Three, it is important that the divisions between individuals who have access to information technology and those who do not are mentioned briefly here. Norris (2001) writes that there exist three divides that will need to be overcome in order for any of the benefits of the Internet – be they political, economic or cultural – to be passed on to the majority of people. The global divide is substantial inequalities in diffusion of technologies between nations, even in affluent G8 and EU states. The social divide is inequalities of access across social groups, again, even within developed countries. The democratic divide refers to those who do or do not use political resources on the Internet, and will be seen even if Internet access becomes ubiquitous. The global divide and the social divide are often conflated into one term that is of great importance for this dissertation – the so-called 'Digital Divide'. The digital divide explicitly refers to inequalities of access to the Internet, including the extent of use, the ability to use, social support in helping to use, the quality of connection, the ability to evaluate information retrieved and the diversity of uses the technology is put to (DiMaggio et al, 2001). Wilson (2000) further defines the problem by looking at 'formal access' – the physical availability of Internet access - versus 'effective access' – affordable connectivity and the diffusion of skills people need to benefit from the technology, including relevant content. DiMaggio et al warn "Inequality reflects the technology's organisation (government policies and programs, industry structure and pricing policies

[7] In this context authoritarian regimes are those who wish to increase Internet use for economic purposes and control its use for political purposes. Totalitarian regimes, on the other hand, actively seek to limit and control use of the Internet by citizens, regardless of the potential economic benefits.

and approaches to provision and organisation of content), not its inherent qualities" (DiMaggio et al, 2001, p314).

This is why it is by no means certain that the Internet will be turned to all the beneficial uses its proponents describe. It is possible that the Internet may actually erode positive sorts of social capital by fostering isolation the online world. Putnam (2000) describes how the Internet may induce 'cyberbalkanisation', where social capital is produced by those with more esoteric concerns e.g. in the strengthening of bonds between extremists. Current research is undecided on this issue, with DiMaggio et al (2001) calling for more investigations into the qualitative nature of online relationships. Furthermore, it is difficult to draw conclusions regarding the effectiveness of the Internet as a political tool at this point, with the existence of a potential tension between social integration on the one hand, with political opinions and movements filtering into the mainstream, and polarisation on the other (Neuman, 2000). There is also a danger that in any emerging public sphere for deliberative discussion the more powerful may shout the loudest – which is a way of raising the spectre of corporate and commercial interests coming to dominate online political discussion in much the same way as they have been see to do offline (Habermas, 1989; Schiller, 1996).

At this point it is important to reiterate the key roles played by the nation state and the corporate sector within the theoretical framework of this dissertation. As stated above, these actors have great potential to influence information flow in society, whether it be through surveillance on the part of the nation state, or through the forces of commodification that permeate the corporate sector. Power and special interest within the public sphere and in the online environment is therefore of great consequence. The techno-utopian point of view advocates the use of the Internet's new information and communications possibilities as a way of regaining some control over information from these forces of the nation state or the corporate sector (Barlow, 1996; Wriston, 1997). Equally, other commentators see the potential for using the Internet to carry out more surveillance of citizens, more invasion of privacy and more commodification of information (Benniger, 1996; Brin, 1998; McChesney, 2000; Schiller, 1996; Shapiro, 2000).

Commentators skeptical of the Internet's power to circumvent power containers such as the nation state often point to the way Internet access is controlled in non-democratic countries. The key to non-democratic rule is centralized control over domestic distribution of information and ideas. Non-democratic rulers therefore take a variety of actions to control the flow of information, an action that is in keeping with Giddens (1989) thinking on surveillance and the need for nation states to be aware of activities within their borders at all times.

It is possible to argue, as IDEA (2001) has put forward, that non-democratic rule can be undermined by the ease of obtaining a broader range of ideologies and information on the Internet. The Internet, as well as being a communications device, is a repository of ideologies, images and information, most of which come from outside the domestic arena. Boas and Kalathil (2003) argue that while the Internet is not inherently free from governmental control it is also not necessarily a threat to authoritarian regimes. Some types of use – dissemination of 'subversive' material, communication between outlawed groups, encouragement of civil disobedience etc. – do pose challenges to ruling authorities however, and consequently encourage authoritative control. Taubman (2002)

points out that novel ideas receive greater consideration from ruling/non-ruling actors when perceptions of failure in existing policies are rife. This is the result of a comparative action on behalf of the actors – the domestic situation is measured to check for deficiencies of material goods or political freedoms. In this kind of situation the Internet greatly assists in efforts to formulate thought-provoking comparisons (Taubman, Ibid). Perceptions of failure feed demand for ideas and as ideational demand increases, so does the likelihood that agents will search for alternatives to fix it.

The Internet is therefore potentially threatening to non-democratic regimes for if citizens have access to more ideational material (and an incredible power to further disseminate it) then unrest, undermining of rule and even the eventual replacement of the current ruling powers is possible. In light of this, some authorities restrict and regulate access to the Internet and the content on it (Boas and Kalathil, 2003; Taubman, 2002; Walton, 2001, Zittrain and Edelman, 2002a, 2002b). The extent of this restriction differs from state to state, but generally it is possible to see the creation of state-imposed barriers – filtering, removal of material, criminal punishments, or the encouragement of self-censorship. Democratic states have sought to impose a degree of Internet regulation as well, even if it is a legal framework that seeks to regulate online information flow in the same way as e.g. broadcast media (Rosenfeld, 2002).

If the nation state takes direct measures to control information flow within its borders, the corporate sector also has a great influence on how information circulates online. A framework for discussing the role of the corporate sector in managing information online is provided, in part, by Schiller (1996). Schiller believes in an edifice of invisible control that is embedded in the economic sector, and concentrates especially on the cultural industries: media, publishing, and the computer industry. These industries are dominated by corporations who adversely influence the marketplace of ideas – the broadcast news, for example, suffers from major problems of corporate ownership (Miller, 2001; The Nation, 2002). For Schiller, information - the production of which has increased since WWII (Drahos and Braithwaite, 2002), along with new ways of organizing, classifying and storing it – can be viewed as either a social good to be shared and organized for the public good (Sunstein, 2002) or as a commodity. During the 1990s, at the same time as the dot.com bubble emerged, there is an increasing commodification of information. Commodification of information is the selling of private information for profit, or alternatively the process of public information being acquired by private firms, then repackaging it and selling it back to the public.

With regards to technology, Schiller argues that a pattern can be seen in industrialized societies around the world as soon as advanced communications technologies become available. Following the development of new technology by cutting edge companies, the industrial sector adapts its business practices to it and acquires the technology in bulk. This sector – which includes media and communications companies – then drives the uses of the technology for the ensuing period. Ogburn (1964) suggests that at this point governments begin to adjust and regulate the market for the technology while in its infancy. Schiller accepts this, but adds that the next step is that the largest and most influential corporations (often transnational) then begin to press for market deregulation, privatization and liberalization. Once this is achieved and governmental oversight of the sector is removed the commercial utilization of broadcasting and telecommunications occurs. Schiller suggests that with these factors in place, “creation and utilization of cultural space in the American mode” can take place (Schiller, 1996,

p69) but this hypothesis may lean too much towards a cultural imperialism viewpoint that is questioned by proponents of cultural hybridization (Hannerz, 1990). The overall pattern suggested by Schiller, however, is supported both by Ogburn's 'cultural lag' timeline and also by Castells' description of the information technology revolution that took place in California in the 1970s (Castells, 2000a).

If this premise is even partly accepted, that new communications technologies are eventually turned by corporations to commercial ends, then there will be inevitable consequences for accessing information online. As both Schiller and the American Library Association (SPARC, 2004) argue, market forces will not ensure societal goals are met. This is a view echoed by Sunstein (2002), who cautions that more consumer sovereignty online, for example, does not correspond to more political sovereignty or even more personal freedom. If plans for the global information infrastructure, as proposed by Al Gore in 1994, are implemented – or even used as a template in drawing up national information infrastructure plans – control of the infrastructure will be transferred to the private sector. If private interests build and control the infrastructure of the Internet then it could be reasoned that those whose interests will be best served are those able to pay for information leaving provision for the 'information have-nots' in the hands of the corporations and a prevailing commercial logic.

The end of neutrality

This viewpoint seems to fly in the face of the claims made for the neutrality of the network made by techno-utopians. Shapiro (2000) makes an important point connected to this, arguing that the open nature of the network should not be confused with a totally neutral technology. The impact of a technology depends on a combination of design, use, and the environment in which is it deployed[8]. The importance of this can be explained with reference to the architecture of the Internet itself. Lessig (2002) believes that the architecture is the politics of the Internet. For Lessig this is a constitutional question – he has a background in constitutional law, and constitutional law is about trying to set up structures that embed values in a political system. According to Benkler, Cyberspace is similar – a set of structures embedding a set of values (Benkler, 2000).

Benkler suggests an Internet architecture that consists of three layers, all affecting one another. All the layers have an effect on information flow. The physical layer is at the bottom and consists of the wires that link computers to the net. It is the area that communications travel across. It is an *area for the dissemination* of ideas that anyone can turn up to and speak their mind, such as Speaker's Corner in Hyde Park in London. Above this is the code layer. It is this code that makes the hardware run - protocols such as TCP/IP or FTP (File Transfer Protocol), but also HTML, XML etc. These protocols define the Internet and the software upon which the protocols run (Microsoft's Internet Explorer for example). To continue the analogy, it is the *language* used by the speaker in Hyde Park. The content layer is at the top. It is what is said or transmitted across the wires - images, text, on-line movies etc. At speaker's corner, it is the *content* uttered by the speaker.

[8] This is a different viewpoint to technological determinism, albeit one that argues that technologies will lean slightly – and not so slightly – towards one outcome over another. The promise of the atom bomb, for example, is more likely negative whereas the promise of the artificial heart is likely positive.

If information flow on the Internet is under threat, then it will be controlled at any – or all – of these three layers. Figure 3 shows how differing levels of control exist within a number of example areas (Lessig, 2002, p25)

Figure 3: Lessig's 'Levels of Control in Four Differing Arenas'

Area / Layer	Speaker's Corner	Stade de France	Telephone System	Cable TV
Content	Free	Free	Free	Controlled
Code	Free	Free	Controlled	Controlled
Physical	Free	Controlled	Controlled	Controlled

Thus, in Speaker's Corner all layers are free because Hyde Park is open to anyone. Therefore the physical layer is free. Within the park any language can be spoken making the code layer free. Furthermore, anything can be uttered – the content is not owned by anyone, it is free. At the Stade de France individuals will have to pay to get in and not everyone is admitted. To this extent, the physical layer is controlled. Once in the stadium however, the code and content layers are almost always free – anything can be uttered, in any language.

The physical infrastructure of the telephone network is owned by a variety of telecommunications companies, making the physical layer controlled. The logical infrastructure – which determines who connects and how, also known as the code layer - is also controlled by the company. What is said once an individual is connected is unregulated though, and the content layer is therefore free.

The cable television system is the most controlled area in the diagram. The wires that connect residences to the cable network are owned by the cable company. While the subscriber will have a limited choice regarding what to watch, the cable company decides what you get to choose from. Finally, the shows that get broadcast are copyrighted shows. Control exists at all three levels.

The Internet mixes freedom and control at different levels. The physical level is fundamentally controlled – wires and computers around the world are generally the property of governments, businesses or individuals. And at the content layer, much is controlled. Not everything is free for the taking, and this is the area that protected by copyright law. The middle layer, however, the code layer, was once free, and this, along with some of the content online that was also free meant there were good conditions for innovation to flourish in the early days of the Internet.

Benkler and Lessig, along with McChesney (2000) and Shapiro (2000), caution that the mount of freedom on the Internet – and consequently the free flow of information – is

being squeezed, from a variety of angles. At the physical layer, which is pretty much controlled, computers are private property and networks have been built with private money. In light of the considerable expenditure needed to create and maintain network infrastructure, completely free access would remove the incentive from those who lay the wires and buy essential equipment. Therefore, Lessig argues that for the Internet to reach its potential and for information to flow freely across the network, the physical layer has to be a competitive environment for the user to exploit.

Lessig marks the code layer of the Internet as being the freest from its inception. For some years in Europe and the United States Internet Service Providers (ISPs) have been providing accesses to a neutral network. As the Internet matures and the use of broadband connections increases, large cable providers and telecommunications companies become bigger players in the connectivity market. With dial-up Internet connections, telephone providers, especially in western economies, have let subscribers use their lines for whatever data they wish to send across it. Should the Internet be regulated to extend more power to cable providers it may be that the code layer will lose its freedom. If Internet connectivity is regulated in the same way as existing cable service, where cable providers are under no obligation to let minor carriers use their wires, the era of open access to the Internet where an unlimited number of ISPs were allowed to connect to the network will end (Rosenfeld, 2002).

Consequently large amounts of content will now be in the hands of a small number of cable companies. A large marketplace of ISPs previously protected the diversity of content. Following the example of cable television, if cable companies provide at least part of the programming (content) on their networks and at the same time the pipeline for transmitting, then they have a lot of say over the content transmitted because of the power to decide who uses their network. As Lessig has said "You get the right to innovate (provide content) depending on whether AOL or AT&T or the music industry like your innovation" (Kennedy, 2002).

A change in Internet regulation will have subsequent effects on small Internet service providers (and by association, small information providers) who will be in danger of being swallowed larger corporations. An online environment where a handful of companies control great swathes of Internet infrastructure has severe repercussions for freedom of access to information. Cable companies will be able to decide who they want to provide content, able to allocate different speeds of access for preferred sites (with access privileges dictated by who pays more), or cut back on allocated space for web site storage. By layering new technologies onto the code layer greater discrimination is facilitated, affecting content and applications that can run on it – such as firewalls, or the installation of filtering/blocking software. The real possibility of 'walled gardens' on the Internet, controlled by private interests beholden to the logic of the market, is suddenly feasible.

Which leaves the content layer. The code layer has effects on content by discriminating as to who gets access to it, but there are further problems relating to intellectual property. The digital nature of Internet content means that it is becoming very easy to track the use of copyrighted material online. The increasing use of digital rights management (DRM) software and hardware is an example of rights owners, in many cases corporations, attempting to regain some control over online piracy of music, movies and copyrighted information of all kinds, including scholarly works. The

increasing amount of control possible in the digital age means the amount of freedom at the top layer of the Internet – the content layer – is threatened.

The Internet and the individual

Control of access to information on the Internet is therefore a key consideration in a discussion of the technology's potential. The power wielded by the nation state and the corporate sector is able to influence, to an extent, the flow of online information – or at least who gets access to it. There is a further actor who plays a part in the theoretical framework, however, and their actions have great consequence for the type of information that is available online, how it is accessed and whether or not third parties seek to control this access. The power of the individual user to shape the online environment cannot be ignored.

As Shapiro points out in the Control Revolution (2000), the Internet has to a large degree placed the individual firmly in the driving seat, perhaps best summed up by Microsoft's question to the Web surfer: "Where do you want to go today?" When searching for information on the Internet, communicating with other users, shopping or banking, or undertaking any number of other online activities, the way users perceive and use the network influences information flow. The reflexive aspects of the Internet - such as the way feedback can be left for nearly every online action, or how online vendors can be rated in order to aid other users in selection - causes the modification of web sites to better attract visitors in future. Online forums host discussions on how best to upgrade machines for a better surfing experience, remove unwanted programs, avoid spyware or cure viruses. The surfing habits of individual users are collected by companies hungry for information on user preferences and shopping habits, making consumers themselves a commodity. These preferences will be collected and remembered, and the next time a user returns to a web site they might find an entirely personalised shopping space, or news bulletin.

Negroponte (1995) coined the phrase 'the Daily Me' to describe how an online newspaper might be drawn up for individuals based entirely on their personal preferences. If one wants to hear only about news in southern Germany so be it. If the only sport to be covered in the Daily Me is football then that can happen too. Political preferences can be tailored, and only one's favourite columnists will be featured in a personal bulletin. The satisfaction of personal preferences is paramount.

Sunstein (2002) investigates this phenomenon further by looking at the growing power of Internet users to filter what they see online. He believes that it is it is billions of individual consumers that will cause information access problems online, and not the actions of producers. The problems lie in the demand side of the speech market, for the aggregate view of the many (the sum of individual choices) could prove bad for democracy. When Bill Gates (1996) talks about the freedom to do what one wants online he is talking about individual freedom, but Sunstein cautions that freedom is being misconceived in the current Internet environment. If freedom becomes synonymous with the satisfaction of private preferences – or an absence of restriction on individual choices – then something has gone wrong.

For Sunstein there is a looming democratic crisis as a result of unfettered individual choice on the Internet. If a good democratic system attempts to ensure informed and

reflective decisions, not simply glimpses of individual opinions, then the Internet, by emphasising consumer sovereignty over political sovereignty, is causing damage to a deliberative democratic process (Sunstein, 2002). Consumer sovereignty is the idea behind free markets where total choice is the ultimate aim. Political sovereignty, on the other hand, is the idea behind free nations – democratic self-government, government by discussion, reasoning in the public domain. The two conceptions are opposed, but Sunstein and Shapiro (2000) warn that they are becoming confused. Consumer sovereignty means the most important thing is consumers getting what they want. In political sovereignty it could be argued that citizens have a duty to be politically involved and that deliberative discussion is more important than the force of simple majority rule (Brandeis, 1927).

Both Sunstein and Shapiro explore the problems of total consumer sovereignty in an Internet environment. The problem, as they see it, is one of too much choice. While filtering choices in life is inevitable if life is to be manageable and coherent, the possibilities now exist to filter choices to reinforce already existing convictions and minimise unplanned exposure to ideas that might challenge beliefs. As a result of this, it is quite possible that millions of people may end up listening to echoes of their own voices. Filtering news, for example, eliminates an essential premise of the search for truth – the importance of testing ideas against competitive arguments (Shapiro, 2000; Mill, 1859).

'Perfect filtering' therefore causes problems (Sunstein, 2000). Filtering of ideas and beliefs can lead to fragmentation, polarisation or extremism as individuals create 'walled gardens' online where people with the same viewpoint come to communicate. The chances of mutual understanding outside of a belief circle are lessened. It must also be remembered that filtering can take place on a national scale as well as being a result of individual choice (Walton, 2001; Zittrain and Edelman, 2002a; 2002b). Prejudices – against minorities, religions, other nations – can be reinforced as a result of what is and what is *not* available online. If 'freedom' for Internet users means the satisfaction of private choices this is some way from a definition stressing that "Freedom is not merely the opportunity to do as one pleases; neither is it merely the opportunity to choose between set alternatives. Freedom is, first of all, the chance to formulate the available choices, to argue over them -- and then, the opportunity to choose" (Mills, No date).

Conclusion

Viewing the Internet through totally utopian or dystopian lenses is no longer as common today as in the first half of the 1990s. Not only has Internet technology developed over the last ten years, it has also spread to all corners of the globe and the number of people using it has increased to around ten percent of the world's population (ITU, 2003). A bright future for all aspects of the technology can no longer be assumed, and vice versa for a dark future. The Internet, as Sassen puts it, has become "a contested space with considerable potential for segmentation and privatisation" (Sassen, 1998). Its democratic potential should not be taken as a given simply because of the Internet's interconnectivity, in the same way as bandwidth availability should not be assumed due to the growth in network capacity that comes with each added network. It is unwise to assume anything at this point, especially when the Internet is emerging as a new theatre for capital accumulation and operations of global capital. Instead, a third opinion, the technorealism described by Fisher and Wright (2001), is possibly the best way to

examine the situation. This viewpoint follows on from the theory of cultural lag, and is a more tempered view of the Internet's effects on society. When society becomes more used to the capabilities of a new technology, claims regarding their effects become less extreme (Carey, 1988). It was only 3 years ago, for example, that the Segway Scooter was going to force a redesign of cities worldwide (Orlet, 2001).

From a theoretical point of view the Internet is viewed as means of linking people and information through computers and other digital devices, thus facilitating person-to-person communication and information retrieval (DiMaggio et al, 2001). Because the Internet is both technical infrastructure and the uses of the infrastructure, it is in the process of being altered as a result of the actions of users, governments of nation states and market forces. The Internet gives connected individuals more choice than ever before to seek out information, communicate and carry out a myriad of tasks online. It offers the chance to either expand individual horizons in an online universe of information, or retreat in the face of too much diversity to the comfort of like-minded believers. For nation states it is a tool for more efficient organisation and delivery of resources, a new way of communicating with citizens and, with the help of a regulatory structure and a good national information policy, a possible means for overcoming problems in society. It can also be a tool for non-democratic regimes to retain varying degrees of control over the ideational marketplace within its borders. Post-September 11th 2001, this same tool is also being used by democratic governments to carry out extensive surveillance in the name of the war against terror. The corporate sector, on the other hand, sees the Internet as an opportunity to expand business interests into new markets, with new methods of content presentation, packaging, advertising and delivery. As a result new players are able to enter hitherto untouchable markets thanks to reduced overheads and cheap startup costs. This new way of doing business can undoubtedly be a double-edged sword for more established players, meaning the employment of a variety of methods to protect business practices and intellectual property online.

These three actors have, through a combination of supply and demand, created new online models for information seeking, communication and business. New online public spheres have sprung up for the discussion of ideas and beliefs, including private and public chatrooms and discussion forums. New mechanisms for the dissemination of information have been built, from micropayment systems to file-sharing programmes. The extent of freedom in these new environments is open to question, as it is altered by a combination of all three actors. Consequently, any examination of freedom of access to online information in libraries must analyse the situation in a framework where the actions of the nation state and corporation both affect and are affected by the users of the Internet itself.

Chapter 3 - Freedom of Expression, Freedom of Access to Information and Libraries

Introduction

This chapter seeks to further expand the theoretical framework of the dissertation by discussing some of core concepts behind free, equal and unhampered access to the Internet. While the first chapter set out the background against which the research takes place, namely a conceptualisation of the globalised world in which nation states and the globalised economy are able to make decisions affecting the Internet's development, Chapter Three concentrates on the topic of human rights on a global scale, and the role of libraries as information providers in light of this. Using the work of Mill, Habermas and Hofstede, this chapter seeks to show that attitudes towards accessing information differ all around the world and, consequently, the extent to which libraries can bring about global freedom of access to information is somewhat hampered by developmental differences between countries, as well as being affected by cultural and political diversity around the world.

The chapter begins by tackling the second research question and its sub-questions. The overall aim is to get closer to an understanding of whether people have a basic right to freedom of access to information via the Internet, and to this end the concepts of freedom of expression and freedom of access to information are defined. Libraries are discussed as information providers in light of these concepts, along with the ways libraries have sought to create a framework for freedom of access to information before the advent of digital materials. The types of restriction that exist to the flow of information are also discussed, and the concepts of censorship and copyright are introduced. The last part of the chapter looks at the way differences between countries can affect attitudes towards freedom of access to information and freedom of expression, an area that must be tackled in research of this scale. Examples from the international library community's experience in this area are put forward to show how these differences can exist, even in a community that can ostensibly organise around the ideal of freedom of access to information. The chapter is intended to serve as a base for discussion of the remaining part of the second research question that looks at how the concepts of freedom of access to information and freedom of expression translate to the Internet. This question will be tackled in greater depth in Chapter Four.

Human rights

Mill (1859) states that rights, in the most basic sense of the word, were originally a recognition of certain immunities upon which it was a breach of duty for rulers to infringe. Since Mill's time, the idea of the existence of inherent and universal human rights has become one of Western culture's most favoured beliefs (Wright, 2001). According to Hamelink, human rights provide a universally available set of standards for the dignity and integrity of all human brings (McIver, 2000). Human rights derive from human needs – a human right is a "universally recognised legal right which, if not granted, would cause lives and livelihoods of human beings and communities to be impaired or harmed" (McIver, 2000).

The promise of a global human rights consensus emerged after the Second World War, and has continued to gain momentum since the end of the cold war at the end of the 1980s (Zolkos, 2001). The ensuing democratisation that followed the collapse of former Easter Bloc countries, coupled with the processes of globalisation that emphasise a greater interconnection between actors has created a situation where states have become more responsible before other states and international bodies for their actions. In effect, human rights are no longer simply domestic policy.

The concept of rights is based on equality, human dignity and mutual responsibility, and was present in ancient Greek philosophy. From the creation of Magna Carta in the 13th century, though the man-orientated perspective of the renaissance and reformation and on to the work of Grotius and Locke in the 17th century, the idea of rights developed mostly on a domestic level (Zolkos, 2001). Following the 'Declaration of the Rights of Man and Citizen' that came out of the French Revolution of 1789, and its subsequent influence over political thought in the 18th and 19th centuries, human rights issues begin to appear in international politics from about the middle of the 19th century onwards, albeit directed under the influence of liberal democratic western states.

Despite a lower profile in the first half of the 20th century, human rights moved up the international political agenda after World War II following the formation of the United Nations in 1945 (Wright, 2001). Notable events following this included the United Nations Commission on Human Rights (1946); the Universal Declaration of Human Rights (1948); the European Convention on Human Rights (1950); the United Nations International Covenant on Civil and Political Rights (1966); and the United Nations International Covenant on Economic, Social and Cultural Rights (1966).

The Universal Declaration of Human Rights (UN, 1948) gives a common framework for the establishment, protection and enforcement of human rights. The right of freedom of access to information and freedom of expression is clearly outlined in Article 19 of the Declaration of Human Rights:

"*Everyone has the right to freedom of opinion and expression; this right includes freedom to hold opinions without interference and to seek, receive and impart information and ideas through any media and regardless of frontiers*"

Freedom of expression

Freedom of expression means the freedom of the individual to express his or her thoughts and opinions through whatever medium they see fit. The freedom extends to literature, art, music and to speech. Article 19 allows for expression through 'any media' meaning thoughts and opinions can be communicated through speech, the written word, through art of any description or through more modern mediums such as television, radio or the Internet.

Freedom is a positive yet imprecise word. In a human rights framework, a freedom differs from a right in that it is not imperative that a freedom be exercised in order to avoid causing harm to human beings or impairment to communities. According to McIver (2000), a freedom's exercise is subject to the will of the individual and it is society's role to ensure that exercise of a freedom not be hindered. Freedom of expression is the freedom to express what may be extremely unpopular ideas without

fear of reprisals, and to the right to protection for what may be a very unpopular minority of citizens wishing to express those ideas (Choldin, 1996). Freedom of expression includes the right to oppose governments without being considered criminals or traitors, and the right to question prevailing ideas and beliefs widely held to be true, no matter how consequential. Galileo, after all, proved that sometimes things are not what they are commonly held to be.

The idea of freedom of expression is connected to Habermas' concept of the public sphere (Habermas, 1989). For Habermas, the public sphere was an area free of special interests where people could come together to rationally discuss and reconcile differences between different points of view. In the public sphere there should be no restrictions on expression. The idea of the public forum, where individuals can express their ideas and opinions without fear of undue restrictions, has long been part of the concept of freedom of expression and has features similar to the idealised concept of the public sphere (Sunstein, 2002). The value of the public forum, whether it is in the shape of a park, a street or the area across from the Houses of Parliament in London, is that people passing will be exposed to materials they would not have chosen in advance. These unplanned, unanticipated encounters, along with exposure to unwanted arguments and experiences are vital to democracy in that citizens are exposed to diverse speakers with diverse views and complaints. The existence of public forums therefore increases the likelihood that people generally will be exposed to a wide range of views and opinions.

Public forums can also take the form of society's general interest intermediaries such as newspapers, magazines or television broadcasts. All the features of a public forum can be found within these mediums – unplanned, unwanted experiences and arguments. Their main value however, according to Sunstein (2002) and Shapiro (2000), is that they provide shared experiences for citizens – and without shared experiences it becomes more difficult to address social problems or for people to feel empathy for others. Unrestricted freedom of expression within these types of forum means all issues, from entertainment to government corruption, are addressed and a common ground of issues facing society is created. Competing viewpoints are heard and considered.

The importance of competing ideas in a society, and the freedom of people to express these ideas, contributes to democratic governance. Freedom of expression contributes to democracy because it balances individuals' right to free opinion and speech on the basis of the need for rational discourse (Wright, 2001). For Sunstein (2002, p39), "A good democratic system attempts to ensure informed and reflective decisions, not simply snapshots of individual opinions, suitably aggregated". This is best facilitated by a wide range of opinions and views. The value of competing arguments in the marketplace of ideas was examined by Mill (1859), who maintained that wisdom is only gained through exposure to a variety of opinions in order to analyse and modify our own personal stances. Access to contradictory and disproving opinions is essential if an individual is seeking the truth, for "it is only by the collision of adverse opinions that the remainder of the truth has any chance of being supplied" (Mill, 1859, p111).

Freedom of information

A society committed to freedom of expression will create an environment for freedom of information (Sturges, 2001). Where citizens can express themselves without fear of

interference it is assumed that access to ideas and information will follow naturally. In this regime there will be no official system of censorship and the press and media will operate independently of state apparatus – although mechanisms to ensure commercial, political or other interests do not dominate the media landscape will likely be in place. Those who expose corruption, or take ideological positions in opposition to prevailing views will be protected.

Freedom of information, then, is a term that can be interpreted in two distinct ways. The first definition, according to the CILIP Freedom of Information Panel (2004)[9], is most often used by library and information professionals, and means an "overarching concept, generous but imprecise, expressing the professional's rejection of any form of restriction on the circulation of information". Freedom of information, in this broad sense, is related to older ideas, going back to the time of the Greek states, which include freedom of opinion, intellectual freedom, freedom of speech and freedom of expression (Ibid). This definition fits with Article 19 of the UN Declaration of human rights which links freedom of expression with freedom of information by stating that everyone has the right to express themselves as well as the right to access all the expressions of others, no matter how they are framed (UN, 1948). Freedom of expression and freedom of information are two sides of the same coin.

The second definition is more concerned with legislation. In this case, freedom of information refers to a "more limited statutory right of access by the public to official information" (Sturges, 2001). This is related to the idea of open government, a concept that includes the observation of government meetings by the public and consultation on planning and decision-making. Freedom of information laws began in Sweden in 1766, although the best known is probably the US Freedom of Information Act of 1966. The idea behind such acts is to give the public the right of access to information held by public authorities. There is a central principle of 'access to files' in this definition, where 'files' are documents accumulated by government in all its manifestations, from local to national level and everything in between. Files are also accumulated by the private sector, most commonly by business organisations. Individuals may demand access to files to check the fairness, accuracy and comprehensiveness of information held about themselves, and to amend records if they are found to be inaccurate. Alternatively, access to information may be sought for further campaigns or investigations by those concerned with the collective welfare of society such as civil society groups, lobbyists or political pressure groups. Access to files can subject the political process to scrutiny, seek proper accountability and bring people and governments closer together.

Article 29 of the UN Declaration of Human Rights states that the only limit on freedom of information should be for "securing due recognition and respect for the rights and freedoms of others and of meeting the just requirements of morality, public order and the general welfare in a democratic state" (UN, 1948). This is reiterated in Article 10 of the 1950 European Convention on Human Rights (Sturges, 2001). Freedom of information in both senses described above has its limits therefore, and the protection of personal privacy delineates perhaps the most significant of these – something that seems to be generally accepted on global scale (Sturges, 1995). For example, the European

[9] Formerly the UK Library Association, CILIP is the Chartered Institute of Library and Information Professionals

Convention on Human Rights states in Article 8: "Everyone has the right to respect for his private and family life, his home and his correspondence" (Council of Europe, 1950). Privacy laws are a necessary counterweight to protecting freedom of information in that they ensure protection of the individual from unwanted press intrusion or the circulation of unfounded rumours in the media.

In addition to these limits, exceptions and restrictions to freedom of information exist in many forms. Information can be withheld for reasons of censorship, national and official secrecy, and information can be suppressed for private and corporate reasons. Additionally, there are economic, technological and social developments that create information-poor countries, regions, classes, social groups and individuals. Ineffective and restrictive public and private information systems and services, such as filtering on the Internet, can also be seen in many places. These exceptions and restrictions are discussed at further length below.

Freedom of access to information

The concept of freedom of information can cause some confusion in library and information science. 'Free' in libraries can mean services which are free of charge to the user. Alternatively it means services which are free of control. Very often it is not clear which of the two meanings are intended. Freedom of information, as described above, is a term that can be used to describe information that is free from controls, although it retains overtones of 'free of charge'. Indeed the FAIFE committee considered changing its name from '*Free* Access to Information and Freedom of Expression' to '*Freedom* of Access to Information and Freedom of Expression' to avoid the possibility of confusion.

Libraries are inherently connected to freedom of information because of the information resources they hold, and the variety of services they offer to access them. Libraries, therefore, aspire to offer freedom of access to information. Sturges suggests that librarians see themselves as helpful but fundamentally neutral intermediaries between information – in all its forms – and users (Sturges, 1995). The old credo offered by Foskett (1962), that librarians have "No politics, no religion, no morals" may no longer hold up however, as new types of library and librarian are emerging committed to social change and social responsibility (Sturges, 2001).

Regardless of the current neutrality of the library profession, the international library community has always been behind the idea of freedom of access to information. Freedom of access to information is the right of citizens to not only express any views, but also to have access to the fullest range of views expressed. In libraries it means providing access to ideas that even librarians might find personally offensive (Choldin, 1996). In 1982 IFLA, along with UNESCO, sought to take action regarding the idea by founding the principle of Universal Access to Publications (UAP), a programme that sought to ensure the availability of published materials in all formats. The UAP programme gave practical support to those engaged in international interlending by collecting and publicising information about the practice of international interlending, as well as conducting and encouraging research in the area and by providing a range of specialised services to those who requested them (IFLA, 2003). The UAP programme ended in March 2003 but IFLA continues to defend the concept of freedom of access to information through its FAIFE core activity launched in 1997. FAIFE furthers intellectual freedom in all aspects, directly or indirectly, related to libraries and

librarianship. It monitors the state of intellectual freedom within the library community worldwide, supports IFLA policy development, co-operates with other international human rights organisations, and responds to violations of free access to information and freedom of expression (IFLA/FAIFE, 2004c).

Libraries can take the idea of freedom of information and make it more realistic. Libraries are facilitators of access to information. The library can provide access channels for information, in all its forms – including access to information via the Internet. This not only happens through the lending, reference or inter-library loan mechanisms of libraries themselves, or through global activities such as FAIFE, but it also can be seen in the way the international library community contributes to the availability of information by publishing certain types of material that publishers might ignore (Sturges, 2001). Furthermore, libraries can contribute through the work of library associations and other professional bodies to develop agreed statements of principle that clarify librarians' positions regarding freedom and privacy issues. Examples of this might occur on a national level, such as the American Library Association's Code of Professional Ethics (ALA, 1981), or on an international level, such as the IFLA Internet Manifesto (IFLA/FAIFE, 2002b).

To return briefly to the second, legislative, definition of freedom of information, libraries do not have a formal role in the structures of freedom of information law. However, the commitment of library and information professionals to the broader concept of freedom of information obliges a promotion and facilitation of people's legal rights in any way they can. To this end, libraries support freedom of access information, whether it is 'access to files' or not.

A library framework for freedom of access to information

Part of this support may involve the cultivation of information literacy amongst library users. 'Information literacy' as a term dates back to the 1970s, and it generally implies the ability to make effective use of information sources, including analysing and evaluating information, and organising and using it in an individual or group context (Robinson and Bawden, 2001). If users cannot understand or process information correctly then freedom of access to information may come to nothing. The development of critical tools for dissection of information is crucial therefore, and information literacy programs can be integral to the creation of an appropriate framework for access to information in libraries (ALA, 2003a; Byrne, 2003a; Robinson and Bawden, 2001; Sturges, 2001). Key issues for such a framework to address include equal access to information resources; a duty of care towards users with regards to certain materials; and user privacy.

Equal access to information means that information resources should be able to be accessed by all the people of the community that a library serves, regardless of origin, age, background, or views. Special attention should be paid to the marginalized, unemployed, underprivileged, disenfranchised peoples, children, the elderly, the disabled, indigenous peoples and those with special needs (WSIS, 2003). Costs of accessing information should be fair and equitable, and the needs of all users should be catered for. Equal access to information is facilitated by a user-centred, barrier-free and format-independent approach (ALA, 2003b). This means that, along with providing access to as wide a range of information resources as possible, libraries should

endeavour to balance this with a 'duty of care' to minors and those who do not wish to be exposed to certain materials. As Byrne (1999) points out, there will be exceptions to freedom of access to information that come about in the process of balancing libertarian views with those who favour greater restriction on the availability of some types of materials.

In a library the right to privacy is the right to open inquiry without having the subject of one's interest examined or scrutinized by others. For Sturges (2002), privacy definitions begin with the sense that individuals have a kind of ownership of various aspects of their lives. This means the right to solitude and the ownership of the space around oneself; to be let alone without intrusion on one's physical senses. It means the right to anonymity and ownership of one's name and personal details and therefore the ability to avoid undue publicity. Privacy extends to psychological integrity or the ownership of the contents and working's of one's own mind. Individuals must be free from intrusive questioning of personal thoughts or knowledge. Finally, privacy means that individuals retain ownership of personal information that has been shared with a third party and the ability to prevent the accessing of this information by people other than with whom it was originally shared. This is confidentiality.

It is essential that access to information in libraries should not come at the cost of user privacy. Users must be informed of library policies regarding privacy and the rights of anonymity and privacy while accessing and sending information must be protected as an essential element of an access to information framework. When accessing information, there could be many compelling reasons for an individual to limit others' knowledge of what they are studying, such as the protection of original research, or the investigation of unorthodox lines of thought. Consequently it is the responsibility of the library to protect users' privacy, and offer a neutral space in which it is possible to maintain individuality.

Libraries have to remain vigilant towards user privacy because of both principles and legislation. The volume of personal information collected about users – names, addresses, borrower categories, borrowing records – means a potential for abuse does exist. It is exactly this type of data that is prized by marketing firms. In light of this, codes of professional conduct and ethics exist to reinforce respect for users' anonymity, confidentiality and psychological integrity (IFLA/FAIFE, 2003b). If data were sold on or licensed to third parties then it becomes a commodity to be traded rather than a confidential trust between the user and the librarian (Sturges et al, 2003).

This is worth mentioning because library user records have been targeted by third parties before, most notably in connection with surveillance activities carried out on behalf of law enforcement agencies. Library users are a literate part of the population and as such information about this group is valuable to governments, but also to businesses and even criminals. Library records can identity insurgents, subversives and political activists, as occurred in the former Soviet Union (Sturges, 1995). One of the better-known violations of library user privacy took place in 1960s and 1970s in the United States under the Federal Bureau of Investigation's (FBI) 'Library Awareness Program' (Egelko, 2002; Foerstel, 1991)[10]. As part of this program, the FBI conducted

[10] It should be pointed out that this program 'operated for decades' and a date for its termination has never been forthcoming from law enforcement agencies (Email from Krug, Director of the ALA Office of Intellectual Freedom, 2002)

numerous counterintelligence activities in libraries, including requesting confidential information on library users based solely on their nationality. Consequently, library privacy laws were passed in nearly all US states in an attempt to provide a legal framework against this happening again (Egelko, 2002).

Unhampered access and censorship

If library users' know that their reading choices are being monitored by a third party, or that their personal details are being held in a less than confidential environment, it is likely that some users may experience a degree of inhibition regarding their information-seeking choices. Users engaged in researching obscure lines of enquiry, or sensitive subjects - democracy in closed regimes, or research into illegal drugs or explosives – may experience constraint on their freedom to research. Users' freedom to express themselves through information seeking choices is hampered by their inability to protect their anonymity and privacy. Undoubtedly, attitudes to privacy vary greatly in different societies around the world – although privacy rights are being increasingly demanded by individuals from the developing world too (Sturges, 2001). Furthermore, political situations in different countries or regions around the world – such as the 'war against terror' – will also shape the environment in which libraries operate. Nevertheless, as facilitators of access to information libraries are required to offer as unhampered an information seeking environment as possible. This situation is less likely to exist if users' privacy is compromised.

If privacy violations constitute a block on user's freedom of expression, then censorship of certain materials represents a direct block on freedom of access to information. Censorship takes place when information resources – be they printed or digital sources, or audiovisual materials – are removed from circulation by a censoring authority. In practical terms, this means that a book may be removed from the shelves of a library or bookstore, or a film may be banned from being shown in cinemas, based on the judgement of a third party. Materials are censored on the grounds of what is considered morally, politically, or otherwise objectionable. Choldin (1996) points out that while there is a human need to express ourselves freely, there is an equally strong urge to censor – and a constant and unremitting tension between the two.

Chalaby (2002) points out that with new media come new struggles for freedoms. The emergence of books in the 15th and 16th centuries, the public press and newspapers in the 17th and 18th centuries and the Internet in the 20th century have all been countered by some forms of censorship. The development of new media is hampered each time by moral panic and measures of coercion, for the communications capacities of new media are often seen as a threat by political elites. Therefore there are curbs on the freedom to access these information resources. In the case of books, for example, banned books and heretical lists appeared after Gutenberg (Grendler, 1977). Taxes were levied on newspapers in the 18th century to stop the poor accessing political information (Collet, 1933). The emergence of censorship methods in the digital age is discussed at length below in Chapter Five.

Chalaby maintains there are there are four traditional methods of censorship used to restrict freedom of access to information: legislative; administrative; violent; and economic. Censorship in a legal sense uses legislative measures to make writing, publishing and dissemination of information illegal. Loades (1991) traces back

censorship laws to the medieval codes of several European nations, although enforcement and penalties have always varied across regimes. In this method pre-publication censorship methods may be used and censors may judge materials before publication. Methods of legislative censorship today are not uniform, especially in developing countries. In Zimbabwe, for example, The Public Order and Security Act and the Access to Information and Protection of Privacy Act (2002) gives the authorities considerable leeway by defining press offences vaguely and sets heavy prison sentences for journalists. Almost any criticism of the government could be construed as "publication of false information" or "abuse of journalistic privileges," (RSF, 2003a). A different situation exists in Russia where the government has been placing independent media under state control in an effort to better control the flow of information in the country (RSF, 2003b). It appears the less democratic a country is, the more extensive government control of media can be (Chalaby, 2002).

Administrative censorship, on the other hand, creates an obligation for media and journalists to register themselves with the authorities; authorization is effectively needed for publication. This registration takes the form of licensing or accreditation for journalists or the deposit of financial guarantees to set up a press organization. If permission to publish information has to be sought then it is a hurdle for government opponents or dissident journalists to overcome – especially if their reputation precedes them. Measures such as this can be traced back to the 16th century in Europe and still continue today in countries such as Zimbabwe (Chalaby, 2002). This way of restricting information flow is less conspicuous than outright censorship – freedom of expression can be restricted without alerting public opinion.

Censorship through violence and intimidation is still common in parts of the world. Jail terms for whistleblowers, dissident journalists or government opponents are an efficient way for governments to restrict freedom of expression and encourage self-censorship amongst information providers. Reporters Sans Frontiers (RSF) 2003 Annual Report states that press freedom violations have increased dramatically since 2001 (RSF, 2003c). In terms of violence and intimidation, 2003 saw 42 journalists killed (17 more than in 2002), at least 766 arrested and at least 1420 threatened or physically attacked (Ibid).

Finally, economic coercion is a method of censorship that uses financial measures to influence information flow. Taxes can be placed on publications, for example, thus putting information out of reach of the less well off. Chalaby (2002) gives an example from the 18th century where in 1712 Queen Anne of England raised 4 different taxes on pamphlets/newspapers to silence press criticism. This put newspapers out of reach of the majority of the population. Of more relevance today is the financial backing for fragile media organizations that comes with strings attached. Media organizations dependent on government – or private sector – handouts will operate under a framework where independence is restricted and editorial decisions affected.

Censorship in libraries

Libraries, as providers of information resources, inevitably have to deal with problems of censorship. Through the process of selecting certain materials for library collections over others, libraries open themselves up to accusations of partiality and bias. Selection, a core element of the library profession, is dependent on a number of factors, not least

library budgets and physical space, but it is also an activity where the subjective views of the librarian can come into play.

The real question of censorship versus selection comes up when the librarian decides against a book that has every legal right to be on the shelves of the library. What is behind such a decision? Asheim (1953) identifies three ways that a certain material may not become part of a library's collection. To begin with, the work in question is banned in a country as result of legal process or government intervention. The librarian in this case is not a censor for he does not go to the law to enforce his judgement – the librarian presides only over his own jurisdiction. Secondly, a work is banned from an entire community by the extra-legal pressure of a small segment of the community. Again, the librarian is not a censor for his span of control extends only to his own institution – it is the pressure group attempting to control the content of all institutions that is the problem here. Thirdly, the librarian simply does not buy the work for the library, despite available resources and space. In this case the librarian is making a selection decision but the end result – that the book is not in the library - is the same as in the previous two situations of censorship. Despite this, Asheim suggests that a distinction can be made between situations one and two, and situation three. The difference between censorship and selection, he argues, is motivation.

Selection brings with it a number of problems for the librarian, including the physical impossibility of having all books in one place and the financial impossibility of buying everything. In light of this, the librarian feels an obligation to select in terms of standards i.e. there are some books that would remain unpurchased even if money was not a problem. The problem with standards is they can be "sufficiently subjective, sufficiently vague and sufficiently imprecise to serve the uses of the censors as well as the selectors" (Asheim, 1953). Standards for selection include the intent of the author and their sincerity of purpose; literary excellence; and the presumed effect on the reader. Subjective judgements can be made in all cases, for what is good writing and will Harry Potter really have an adverse effect on young readers? (ALA, 2002).

As Asheim points out, these are the same standards employed by librarians *and* censors, and the key lies in the distinction between how standards are applied, including the atmosphere in which decisions are made. The selector, he argues, takes a positive approach to the decision making process, seeking reasons to keep materials based on their values and its strengths. The censor, on the other hand, takes a negative approach, and seeks reasons to reject materials. It is a case of decisions to ban versus reasons to preserve, coming from a starting point in favour of liberty of thought – or the opposite.

For librarians, the time and custom of the community – the context – and the setting of the library will be considered in judging value and effectiveness of a book. However, regardless of the librarian's standpoint, sometimes there are outside pressures to consider and, while it may not happen very often for libraries, there may be illegitimate attempts to limit by intimidation the freedom to make an honest judgement on the merits of the case alone. Consequently, there might be deferment to anticipated pressures that results in a type of self-censorship for librarians (Belayche, 1999).

Intellectual freedom and copyright

The concept of intellectual freedom is one that incorporates the issues raised by restrictions on freedom of expression, such as user privacy discussed above, and freedom of access to information, including problems caused by censorship. Cohen (2001) states that intellectual freedom is a function of the autonomy that individuals enjoy with respect to information flows *to*, *from*, and *about them*. The legal framework that governs information access, ownership and use substantially affects the degree of intellectual freedom enjoyed by individuals in society.

Intellectual freedom is a subject of the problem of autonomy, where autonomy "concerns decisional independence with respect to all of life's choices" (Cohen, 2001, p2). Intellectual freedom therefore is informational autonomy, and it concerns decisional independence regarding information, thought and expression. Liberal philosophy and political theory define informational autonomy purely in negative terms where autonomy is defined in terms of the presence or absence of overt restraint on willed conduct (Cohen, 2001). Cohen points out, however, that there is a further consideration to make in light of the unequal situation that arises as a result of the elite proportions of society having more resources, no constraints on opportunity and the ability to make decisions based on their capability to do so. The polar opposite of the scale – the poor – have no such resources or opportunities. This was noted by Mill as early as the 1850's (Mill, 1859). Consequently, a situation exists where there are measurable constraints on informational autonomy (objective) and perceived ones (subjective).

Autonomy therefore is a matter of degree. It is a function of the extent to which circumstances prohibit choice and the extent to which the individual perceives their choices to be constrained by external factors. To put this in context, informational autonomy can be decided by the degree to which the law or the private sector governs access to information, along with the extent to which the individual believes his information seeking decisions to be affected by factors such as privacy. For the purposes of this thesis, considering these issues on a global scale, it can be said that informational autonomy is entirely contingent on an individual's circumstances.

In light of the above, and with respect to intellectual freedom, Cohen believes it is therefore not enough to say that a diversity of information sources must exist. To best foster freedom of access to information existing (and future) restrictions must be considered, and overcome. Information cannot advance intellectual freedom if people do not know it exists for example, or if they cannot get access it once they know it exists. An appropriate framework for freedom of access to information must tackle this. Information must be understood once accessed, and therefore critical tools for dissection of information should be developed, along with access mechanisms to a wide diversity of sources so as to encourage critical capability and discourage creation of orthodoxies.

Intellectual freedom also depends on the degree of informational privacy that individuals enjoy, for the circulation and use of personal information constructs how individuals see each other and themselves. Informational privacy structures the information and opportunities presented (or denied) to individuals and therefore it creates 'feedback loops' that reinforce some choices and undermine/discourage others (Cohen, 2001). This process affects individuals' choices regarding accessing and

disseminating information in that, for example, if information seeking activities are being monitored behaviour may be monitored as a result. This is why informational privacy is so important – it affects both creation of and access to information, as well as critical capacity and independence of thought.

Crucially, intellectual freedom cannot flourish without an ongoing, sustainable flow of information - there is no other way for the wide diversity of sources to exist otherwise. A framework that helps generate such a flow of information will guarantee future variation and creativity and any rules will affect the future production of information Intellectual property frameworks have been created to compensate creators and still promote innovation, but the tension between protecting the rights of copyright holders and the need for a healthy public domain can be difficult to reconcile (Lessig, 2002; Wright, 2001).

Copyright frameworks have been in existence for some time now. In England, for example, the *Statute of Anne* in 1709/10 authorised the protection of the proprietary rights of authors and provided a limited period of copyright for published literary works. Wright (2001) states that freedom of expression was not really an issue until the invention of printing, and that copyright and freedom of expression developed in tandem - "As copyright was developing as a means of protecting the economic rights of authors, freedom of expression was also coalescing into an important civil right" (Wright, 2001, p 115).

The two concepts tackle both the public and private realms. Freedom of expression concerns the individual author as citizen whereas copyright relates to the individual author as commodity producer. Freedom of expression protects speech and written expression in the public realm of political action; copyright protects in the private realm of commercial production and dissemination. In theory, freedom of expression should protect against the excesses of the state, while copyright is protection offered by the state. The end result of this situation is that "without copyright to protect the expression of ideas and information in the marketplace, authorship would be much less significant and freedom of expression would not necessarily have developed as an individual right of citizenship" (Wright, 2001, p116). The two concepts are explicitly related.

The development of copyright is a result of the monopolies granted by the crown in European countries to companies or guilds of printers or booksellers. These monopolies were given in exchange for censorship of texts, thus linking copyright and censorship. Wright (2001) states that commercial interests in publication and printing were directly involved in the censorship process on behalf of their patrons. Today, copyright is rarely used to blatantly limit freedom of expression in a political sense, but it is at least as significant as freedom of expression in determining the flow of information, ideas and creativity. Along with the examples of censorship given above, diminished accessibility of information due to copyright restrictions on the distribution of academic journals leads to less access to information.

In light of this, recent copyright developments assume a greater significance. Certain copyright scholars (Benkler, 2000; Cohen, 2001; Lessig, 2002) believe that current intellectual property frameworks do not really promote intellectual freedom in that individuals have little autonomy with respect to information communicated to them, by them and about themselves. It is suggested that much current copyright legislation

favours powerful intellectual property owners, such as large media corporations or publishers. An individual's ability to create information is also affected by these frameworks, for the doctrine of fair use that has contributed to so many inventions is being eroded by the extension of copyright terms to as long as the creator's life plus 75 years (Lessig, 2002). These problems are compounded by the trail of information that individuals' leave about their information seeking activities – the lessening of informational privacy that is a result of the sale and circulation of personal information means individuals' actions are more open to scrutiny than ever before (Brin, 1998)

During the preceding discussion of censorship and, to a slightly lesser degree, user privacy, it may appear that nation state restraints on accessing information are the greatest risk to individuals' intellectual freedom. Legal frameworks incorporating privacy protection and censorship are, after all, constructed by the nation state. Copyright restraints, and the private control of information, however, are as grave a threat due to the way rights holders can use the system. If an intellectual property framework leans too heavily towards the rights of intellectual property holders at the expense of the public domain, it could be that lower-income users may be adversely affected by the powers of rights holders to restrict access to information through legal or economic channels. A totally market-based approach to this issue may result in the production of fewer solidarity goods such as public knowledge (Sunstein, 2001). If such an approach reduced the critical capacities of individuals and their freedom to criticize, along with their freedom to use and re-use information then the creative process behind information provision could also be affected.

Developmental differences in access to information

When discussing these issues in the abstract there is a danger that the reality of the world is bypassed. In the real world, despite efforts such as the World Trade Organisation's trade-related aspects of intellectual property rights (TRIPS) agreement, there is not yet one overarching intellectual property framework. The way individual counties approach information flow and information access varies around the world. Developmental and cultural differences affect attitudes to censorship and privacy in the same way that they affect international diplomacy or the practice of religion. This chapter began with a discussion of the Universal Declaration of Human Rights but it is worth repeating that this declaration is ignored by many signatories and interpreted differently in many different countries.

What seems to be agreed within the international library community, however, is that information is power for development – and that the right to information therefore, is an important human right (Byrne, 1999; Choldin, 1996; Koren, 1997; Sturges, 2001; Yilmaz, 1999). Differences in access to information, or even attitudes towards access to information, exist because there are preconditions for realizing the right to information - certain economic, social, cultural and political structures must be in place. Consequently, developed countries are nearer to the goal of realizing the right to information.

The concept of a 'right to information' is based on the idea of freedom of information. Yilmaz (1999) equates freedom of information with intellectual freedom and states that intellectual freedom and the right to information are human rights that protect human life and human development. This viewpoint is broadly consistent with the definition

given by McIver (2000) above, and also to the connection of decisional independence with intellectual freedom advocated by Cohen (2001). By being in charge of his own informational decision-making the individual is arguably best placed to retain control of life decisions and personal development.

Human rights, though, have to be protected by a full democracy in countries. To have full democracy, all members of society must participate in decision-making processes – and for this they need the right to information. This is consistent with Habermas' conception of the public sphere outlined in Chapter One (Habermas, 1989). The right to information, therefore, needs true democracy and in the majority of developing countries, as of 2002, full democracy is not yet a reality (Polity IV Project, 2003; World Resources Institute, 2002; Yilmaz, 1999). If a full democracy is a pre-condition for the right to information, then some developing countries do not yet have the chance to fully use this right.

To develop this situation towards a satisfactory standard of access to information, economic and social rights have to be tackled including adequate standards of living; food; housing; education; health; work; social security; as well as a share in the benefits of social progress. Yilmaz (1999) argues that if these needs are not being met a person does not need to use the right to information, and consequently it can be seen to be a low priority in developing countries. Fundamentally, only educated (literate) people can use the right to information – illiterate citizens will find it hard to take advantage of the right to its fullest extent, regardless of support mechanisms such as libraries. To emphasise the importance of education, Srikantaiah and Dong (1997) show a definite correlation between the number of Internet users, GNP and literacy rate. This strong combination between use of information and literacy rate, exists for the simple reason that information users must be literate (Yilmaz, 1999). Koren (1997) suggests that the right to information - or the right of access to sources of information - is related to an educational aim which is situated in the perspective of general education and human development. It might be that the percentage of GNP spent on education must therefore be increased in developing countries before the right to information becomes an achievable policy goal.

Placing the right to information within a development framework means an explanation may be offered as to the variations in access to information around the world. Yilmaz (1999) shows that the distribution of libraries worldwide supports this developmental interpretation. An unequal distribution of libraries around the world could mean the safeguarding of people's rights to information is also unbalanced. For effective library use in a country there must be enough libraries and educational facilities and this can only occur through development. Furthermore, without a national information policy library services and the right to information will be negatively affected. The extent to which a supporting framework exists determines how widespread the right to information will be for a country's citizens.

Due to other pressing needs, such as the right to food and shelter, the right to information will be further down the chain of development within any given country. It follows therefore, that libraries cannot solve the problem of rights to information by themselves – certain conditions have to exist before a structure that supports freedom of access to information can be put in place. If the right to information as a human right is a result of human development then this development must have advanced to a certain

degree in order for libraries to begin to make a difference to information access within any given country[11].

Cultural differences in access to information

With an inequality of development existing worldwide, it follows that differences in attitudes to and provision of access to information are found all over the world, and likewise all over the international library community. There is an important point to make, however, about how different attitudes would still exist even if all countries existed at the same level of development. Differences in cultural attitudes to concepts such as personal freedom and privacy, or what is considered obscene or harmful, exist across all countries, even developed ones. And, as Choldin states, even within nation states "there will not be unanimity regarding intellectual freedom issues" (Choldin, 1996, p5).

This situation exists because of cultural differences regarding values. Even the Universal Declaration of Human Rights has been questioned regarding its perceived Western, Judeo-Christian constructions that may be of little relevance to communities with other beliefs/ideologies (Byrne, 1999). Wright (2001) identifies colonialism as the driving force behind the Euro-American human rights perspective in the declaration, and points out the reduced role of individuality in the rights of Africans as an example of cultural difference. She does admit though, that individuality - in the sense of each human personality being unique - is not restricted to just Euro-American cultures. It could be that some parts of the world place high value on individual autonomy, while other parts place greater stress on community and social cohesion – cultural differences are myriad and, to a degree, fluid, making conclusions difficult to draw.

Global cultural differences are explored in the work of Dutch psychologist Geert Hofstede (2001). Hofstede emphasises the importance of cultural difference around the world and between 1967 and 1973 he carried out a global study of how values in the workplace are influenced by culture. His research settled on five independent dimensions of national cultural differences that illustrate how important it is to acknowledge the variety of global society when considering access to information:

- Power Distance – the extent that less powerful members of organisations (including the family) accept that power is distributed unequally i.e. how inequality is defined/accepted from below

- Individualism versus collectivism – the extent to which individuals are integrated into groups i.e. each man for himself versus protection of the family/loyalty

- Masculinity versus femininity – the extent of the distribution of roles between genders, of the gap between the values of masculinity and femininity

[11] The right to development is "A comprehensive economic, social, cultural and social process which aims at constant improvement of the well-being of the entire population and of all individuals" (Yilmaz, 1999, footnote 13)

- Uncertainty avoidance – the extent of society's tolerance for ambiguity, expressed on the one hand by societies that have many rules and security and a belief in an absolute truth, and on the other by societies that have as few rules as possible, with relativist beliefs alongside a contemplative nature

- Long term versus short-term orientation – thrift and perseverance (long term) versus tradition, fulfilling obligations to society and protecting one's face (short term)

Taking into account these cultural differences and Hofstede's contention that culture is the collective programming of the mind, with human mental programming taking place on an individual, collective and universal level, it is clear that attempting to pin down one uniform attitude to the right to information is a difficult task (Hofstede, 2001). The first dimension – power distance - may be used as an example to show this. Hofstede states that the essential element of power distance is human inequality. Inequality in society can be seen in physical and mental characteristics; social status and prestige; wealth; power; laws, rights and rules. Hofstede is interested in organisational culture, or specifically the influence of national culture on power distance within organisations, but this translates to a discussion of freedom of access to information in that it might be possible to assess the extent to which certain populations are willing to defer to leaders' decisions regarding, for example, censorship. Hofstede sums up power distance as a dimension of national culture thus: "The extent to which the less powerful members of institutions and organisations within a country expect and accept that power is distributed unequally" (Hofstede, 2001, pg 98). The balanced versus unbalanced power split within a country is therefore highly associated with power distance.

Hofstede's work has been used during this research as a reminder to stay aware of the cultural variety present in the world – an essential concept to have at the forefront of any research on a global scale. When considering cultural differences Hofstede recommends that judgement be suspended when dealing with alien societies – cultural relativism must stressed and ethnocentrism avoided. In keeping with Yilmaz (1999), Hofstede concludes that a wide variety of factors must be considered when looking at issues on a global scale, meaning the extent of development within a specific country will play a part in cultural attitudes. Like those concerned with developmental differences, Hofstede looks at how standards of living affect individuals' opinions, and his five dimensions of national cultural difference expand a framework for discussion of attitudes towards access to information, alongside differences in e.g. housing, access to food and water etc.

The global library community and freedom of access to information

In the context of this research, a cultural relativist approach - the view that all ethical truth is relative to a specified culture – has involved reflection on international participation within IFLA, especially activities concerning the FAIFE committee. Differences between nations regarding attitudes towards freedom of access to information can be seen in the way a recent IFLA initiative – the IFLA Internet Manifesto – has been implemented around the world.

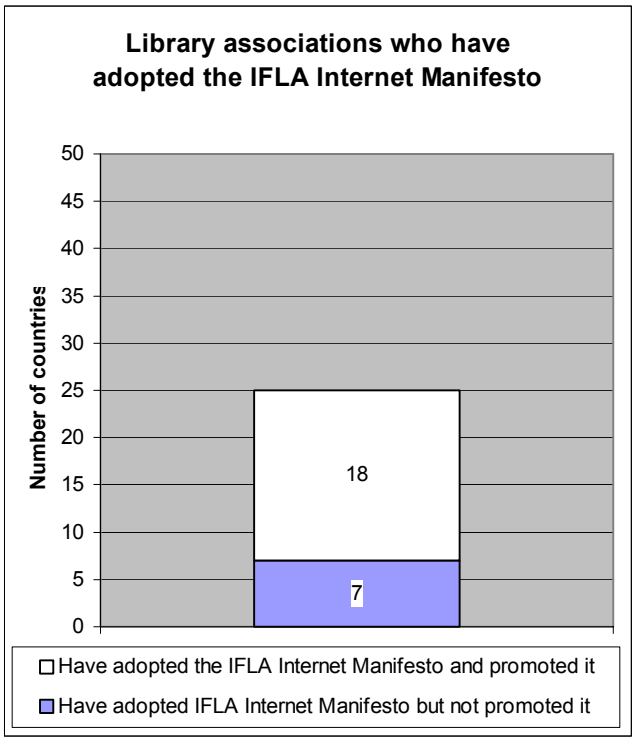
The IFLA Internet Manifesto (IFLA/FAIFE, 2002b) was drawn up to show IFLA's professional commitment to defending the principle of freedom of information on the

Internet. It was adopted by the IFLA Council at the Glasgow World Congress in 2002 and at the time of writing has been translated into 15 languages[12]. The document reaffirms the principles of freedom of expression and freedom of access to information as set out in Article 19 of the Universal Declaration of Human Rights, with a specific focus on freedom of access to information on the Internet.

As part of the data collection process for this thesis, the state of Manifesto adoption worldwide was surveyed by including a question in a globally distributed survey that forms the main empirical exercise of the thesis. The question concentrated on the extent to which IFLA member countries, through their library associations, have adopted and promoted the initiative. This is an interesting issue to address, for it shows, to an extent, how serious a national library association is about its commitment to freedom of access to information. Of course, adopting the Internet Manifesto is not as simple as reading it through and signing it, especially when issues of language are taken into account. Nonetheless, the numbers of countries that have adopted the Manifesto – as well as those who do and do not intend to do so in the future – can shed some light on differences between countries regarding the emphasis placed on intellectual freedom.

The IFLA Internet Manifesto

78 of 89 respondents correctly answered the question, with the results displayed in figures 4a and 4b below:



Global results - 78 Countries

No responses were received from Columbia, Kuwait, the Netherlands Antilles, New Zealand and the Slovak Republic

The following countries indicated that they had adopted the manifesto but also that they intended to adopt it in the next two years, thus confusing the issue:

Aruba, Benin, Finland, Guatemala, Kenya, Swaziland

Their indications have consequently been removed from the results

Figure 4a: Library associations who have adopted the IFLA Internet Manifesto

[12] The languages are Arabic, Chinese, Czech, Danish, English, French, German, Icelandic, Italian, Portuguese, Romanian, Russian, Serbian, Spanish and Ukrainian.

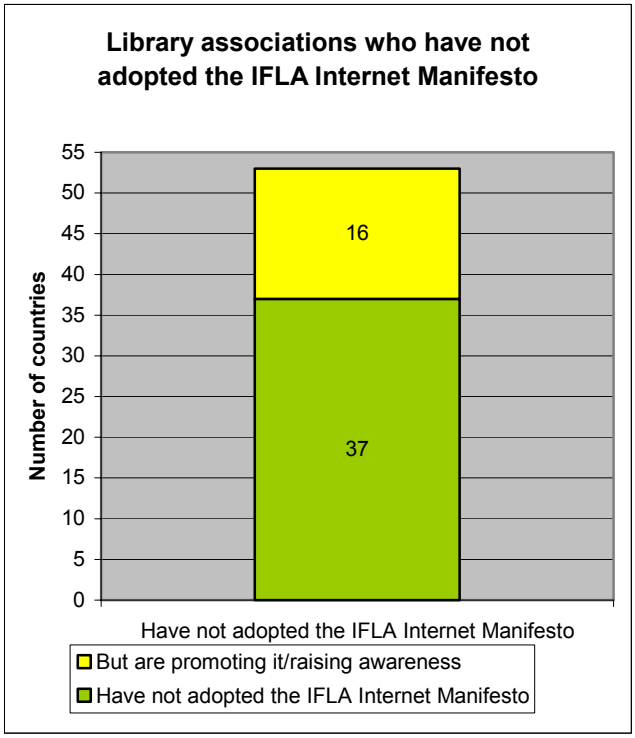


Figure 4b: Library associations who have not adopted the IFLA Internet Manifesto

25 countries have adopted the manifesto and another 35 countries indicated that they intend to adopt it in the next two years. Of the 25 countries that have adopted the manifesto, 18 have also promoted it, implying a commitment that goes beyond lip service. 53 countries have not adopted the manifesto, but findings show that 16 of these have promoted it, or raised awareness of its existence. Overall responses indicate that in three years time it can be estimated that around 60 of the responding countries may have adopted the Manifesto. However, considering that the survey only approximately 60% of IFLA membership countries there appears to be a challenge regarding how best to promote and further the implementation of the manifesto in IFLA membership countries.

Regional findings are represented in Table 2 below:

Region[13]	Countries that have adopted the Manifesto	Countries that have adopted and promoted the Manifesto	Countries that have not adopted the Manifesto	Countries that intend to adopt the Manifesto in the next two years	
				Yes	No
Africa (13)	1	1	12	7	2
Asia (17)	3	2	14	10	2
Europe (32)	17	14	15	10	1
L. America and the Caribbean (10)	3	1	7	6	0
N. America (2)	1	0	1	0	0
Oceania (4)	0	0	4	3	1
Total	**25**	**18**	**53**	**35**	**6**

Table 2: Regional adoption of the Internet Manifesto

Looking at the figures on a regional scale, half of the European respondents have adopted the manifesto, with most of these countries having undertaken some sort of promotion. After Europe, the levels of adoption among other regions drastically drop off and, while many countries indicate they intend to adopt the Manifesto in the next two years, it is difficult to tell if this will happen – it may be that respondents are telling a survey carried out by IFLA what they think IFLA wants to hear. While it is very difficult to draw any major conclusions regarding cultural differences from these figures, it is tempting to suggest that the values embedded in the Internet Manifesto may appeal more to the cultural background of freedom of information that is found in Europe, and that other regions are less inclined to move quickly to embrace the ideals found in the document. This is a fairly rigid reading of the results however, and one that does not take into account the time and resources available to a library association, or the priorities that are set in front of any given countries. It also does not take into account the time it takes to translate the Manifesto into local language and distribute the document. What is interesting though, are the library associations that have no intention of adopting the Manifesto in the next two years, suggesting that they see little of value in the document for the library profession in their country. Andorra, Australia, Chad, Costa Rica, Egypt, the Philippines, and the Russian Federation all indicated that they would not be implementing the Manifesto, and it is tempting to speculate on their motives. Australia replied in the questionnaire that the national library association does not formally adopt external statements but instead adapts its own policy statements with reference to them, which was apparently likely to happen. The remaining countries offered no reason however, although their replies to other sections of the questionnaire reveal that filtering software is used to an extent in Andorra, Costa Rica, the Philippines

[13] Numbers of responding countries are in brackets. It should be noted that not all respondents indicated whether or not they intended to adopt the manifesto in the next two years, meaning it is unclear if more countries will join up or not. These countries were - Africa: Ethiopia, Gambia, South Africa. Asia: Azerbaijan, Singapore. Europe: Austria, Cyprus, Liechtenstein, Malta. L. America/Caribbean: Panama. N. America: Canada.

and the Russian Federation and records of users' Internet activities are kept in Egypt and the Russian Federation again. The respondent from Chad, furthermore, saw no link between the keeping of user records and users' freedom of expression, a viewpoint which goes against the Internet Manifesto's position statement, and also refutes the link between user privacy and freedom of expression laid out earlier in this chapter[14].

The link between the values of the Internet Manifesto and the extent of Internet data retention in libraries is explored further in Chapter Six. It may be too soon to expect the influence of the Internet Manifesto to be felt within the international library community, and perhaps if more countries sign up to the Manifesto fewer library associations will endorse the keeping of records or Internet filtering in the future. At the moment however, the lack of uptake suggests, at the least, a differing set of priorities between regions or maybe a lack of will to hold to a common position. By using the Internet Manifesto as an example of a common position for library associations to take, and by illustrating that only 25 countries out of 143 IFLA members have adopted the Manifesto during its first two years of existence it might be speculated that some library associations see freedom of access to information on the Internet in a different light to others, or certainly as a different priority. As Chapter Four goes on to show, principles regarding intellectual freedom online will have to take a backseat if libraries are unable to even offer an Internet connection. Those countries with developed Internet infrastructures may be able to devote more time to creating an ethical framework for use of the Internet; others may be less inclined to place freedom of access to information in a theoretical sense above some degree of basic access for their users.

As a further aside, and to briefly expand the discussion beyond issues of freedom of access to information on the Internet, cultural differences within the library community can also be seen in the way the international library community has approached the contentious issue of intellectual freedom in Cuban library system (Hamilton, 2002b; Kent, 2001; Seidelin, 2001; Pateman, 2001). This issue, which at times resembles a minefield of accusation and counter-accusation, has dominated discussion within FAIFE since 1999 when the office first published a report into the situation facing the 'independent librarians' operating on the island. Voices from within and without the library community have argued that censorship exists within the state library service and that the ALA in particular should withdraw its support on the grounds of intellectual freedom (Hentoff, 2004). Equally strident voices have countered that the desire of the United States to impose its cultural disposition on a sovereign nation should result in a show of support for the Cuban librarians who are operating in a cultural and political environment that librarians of the 'West' should refrain from judging (Pateman, 2001). If the analysis of the Internet Manifesto adoption rates can show, from a drier statistical point of view, how some countries are likely to embrace certain cultural viewpoints quicker than others, the discussion regarding the Cuban libraries shows how passionate debate in the area of intellectual freedom can become, but also how subjective views are regarding issues of freedom of access to information. This is a point that Hofstede would no doubt agree with, and one that has to be taken into account when considering freedom of access to information and freedom of expression on a global scale.

[14] *"Libraries and information services should respect the privacy of their users and recognize that the resources they use should remain confidential."* The IFLA Internet Manifesto (IFLA/FAIFE, 2002b)

Conclusion

This chapter has shown that freedom of expression and its twin, freedom of access to information, are considered basic human rights under the framework of the Universal Declaration of Human Rights. Freedom of expression and freedom of access to information are seen as contributing positively to democracy and human development. In theory, freedom of expression and freedom of access to information are supposedly free from interference of any kind, but it is apparent that exceptions and restrictions regarding the right exist all over the world as a result of developmental and cultural differences found between and within nation states. These differences manifest themselves in the form of barriers to accessing information. Some barriers, such as censorship, place direct obstacles in the way of individuals seeking to access information. Others, such as an information-seeking environment where privacy is compromised, create indirect obstacles by interfering with individuals' freedom of expression. Consequently, both direct (measurable) and indirect (perceived) constraints on intellectual freedom exist on a global scale, wherever an individual might reside.

Article 19 of the Universal Declaration is of great relevance to the international library community as it states that access to information should be allowed regardless of media or frontiers. The logical consequence of this is that library users have the right to freedom of access to information via the Internet. Libraries are facilitators of access to information, whether its format is printed, audiovisual or digital. While cultural and developmental differences affect the extent to which libraries around the world can provide access to information resources, large numbers of IFLA member countries have stood behind such initiatives as the UAP program or the FAIFE initiative. Libraries, however, can only provide access to information within the legal and financial frameworks they are situated in, and consequently barriers to information resources are thrown up by budgets and copyright issues, along with external pressures to censor certain types of materials.

In light of this situation, the emergence of the Internet as a powerful information-seeking tool at the end of the 20th century may have been expected to overcome some of these obstacles and create a fairer information-seeking environment for library users. Chapter Four now goes on to examine how the Internet has affected freedom of expression and freedom of access to information in libraries, and whether or not the new technology has been able to overcome the old barriers discussed in this section.

Chapter 4 – The Effects of the Internet on Freedom of Access to Information in Libraries

Introduction

This chapter discusses the concept of access in an information and communications technology context, with a specific focus on what it means to access the Internet. It follows on from the examination of the second research question in the previous chapter by looking to see how freedom of access to information translates to the Internet. Internet access is therefore the key concept in this chapter, and clarifying this issue is important, for different interpretations of access exist - all of which have implications for how empirical research is carried out. This chapter therefore looks at all aspects of the third research question relating to access. Internet-accessible information resources are specifically defined, along with how they are accessed by Internet users. The chapter consequently explains the differences between simple Internet access and the type of access to information resources that libraries around the world are seeking to offer.

Once this has been done the chapter considers how the advent of the Internet has changed the way libraries operate, and the way they are perceived by librarians, users and policy makers. In order to give some context to these issues, the chapter looks at the worldwide spread of the Internet, who is using it and how. Theoretical contributions from Norris (2001), Foster (1962) and Rogers (1995) are introduced to support findings relating to the diffusion of the Internet worldwide. This situation is then compared with the results of empirical research carried out as part of the project, namely an attempt to assess the spread of the Internet in the international library community, in both public and academic libraries. The last part of the chapter therefore attempts to show the extent to which libraries around the world are able to offer Internet access to their users and, in light of the previous discussion regarding different types of access, how discrepancies in access form a barrier to accessing information that is commonly referred to as the 'Digital Divide'.

Access to the Internet

As Chapter Three showed, freedom of access to information is the right of citizens to not only express any views, but also to have access to the fullest range of views expressed. The basic concept of access in a technological sense must now be considered to investigate the extent to which freedom of access to information on the Internet exists. 'Access' as a term has many connotations, with the 'freedom, or ability to make use of' a resource being an important definition (Borgman, 2000b). In libraries, the concept is stretched somewhat as it can be used to refer to different aspects of library work. The loaning of materials, for example, can be done by an 'access services librarian', while the action of identifying and locating materials can be referred to as part of a process of 'improving access to collections' (Ibid). Borgman would have it that access, in information technology terms, is consistent with the looseness of the above interpretations of the concept.

Outside of libraries, the term access can be used to denote access to a network such as the Internet. In 1997 the G7 Ministerial Conference on the Information Society defined open access to a global information network on two levels, one for the user of the

network, and one for providers of information to users (G7, 1995). For users, access is founded on the concept of universal service that can be found in the obligations of American telecommunications providers - that all households should have access to their nation's telecommunications infrastructure. For providers, the concept of access takes its lead from the economic model of open markets.

Access to the network could therefore be as simple as providing an Internet connected computer. This means a working computer with appropriate hardware and software, and access to a telecommunications link adequate enough to reach the Internet. In basic terms, the currency of computer, or the speed of connection, is irrelevant as long as it can connect to the network. All that matters is that access to the Internet can be provided via this setup.

While the most common meaning of Internet access today is having a computer and a network connection, the concept of access is more complicated than this. Users presented with an Internet-connected computer will vary greatly in their ability to use the machine, and to retrieve information relevant to their lives (Debowski et al, 2001; Waldman, 2003). In light of this it is appropriate to examine the concept of access in a more subtle way, and provide a conceptualisation that is better able to deal with differences in user ability. Van Dijk and Hacker (2003) provide a multi-faceted concept of access, and argue that barriers to access are important considerations when attempting to construct a basic definition.

They make the case that there are four different types of access to consider when looking at how people use the Internet. 'Mental access' is a lack of elementary digital experience caused by lack of interest, computer anxiety, and unattractiveness of the new technology. Data on potential users' first experiences of digital technology has only recently started to be collected in earnest, and Van Dijk and Hacker argue that mental barriers are often ignored in discussion of access problems. These issues, however, are even present in developed Internet countries especially amongst older sections of the population, and it is subjective and emotional skills that could be responsible for this. Within this category it is possible to see that despite government wishes of universal access to the Internet (WSIS, 2003), there may still be a part of populations who are unwilling, or who do not want Internet access. The end result is the creation of the Internet 'want-nots' who can see no advantages in using the technology (Arrison, 2002). Any discussion of Internet access has to take into account the existence of this category of user, especially when considering how to increase take-up of Internet technology.

'Material access', relating to possession of computers and network connections, dominates discussion of access, and is mostly concerned with access to hardware. Differentials within this category of access are based on a number of social categories including income, education, occupation, age, gender, ethnicity and also geographic location – within a country, or in terms of a country's global positioning (Norris, 2001).

'Skills access' is a lack of digital skills caused by insufficient user-friendliness and inadequate education or social support. It can also be referred to as instrumental skills, or the ability to operate hardware and software. Van Dijk (1999) broadens this concept to include informacy or information skills – the skills of searching for information - and further recommends adding strategic skills, meaning the ability to use the information found to improve one's own purpose and position in society, in work, education and

cultural practices. This definition of access begins to bring in the relevance of the information found on the Internet, moving the debate away from simpler issues of access to computers towards an understanding that access to the Internet is not valuable unless the information found by users has some degree of usefulness to their lives.

Finally, 'Usage access', refers to a lack of significant usage opportunities for users. Consequently, different uses will bring the most important digital information and information inequality in society (Van Dijk and Hacker, 2003). This is something Castells (2000a) touches upon with his concepts of the interacting and the interacted, and it is important to consider when looking at the future of information provision on the Internet. If a situation develops where certain types of Internet users are able to go online for educational and self-empowerment purposes, to access e-government services, bank online or get involved in politics for example, and another set of users access the Internet for entertainment and shopping purposes then what Norris (2001) calls a democratic divide between Internet users becomes a possibility. The extent to which this situation might occur depends on how the Internet develops in years to come, something discussed above in Chapter Two.

This differential approach to access is in opposition to the simplest view of access being a computer and a network connection. It is the opinion of Van Dijk and Hacker that policymakers (and commentators) believe the problem of inequality of access is solved the moment computers and a network connection to the Internet is made available. Material access would therefore seem to be the type of access primarily considered when discussing the Internet. Mental access, they argue, is viewed as a temporary phenomenon, relevant only to the elderly, some categories of housewives, illiterates and the unemployed. This viewpoint would seem to be found in announcements by the US government that the digital divide disappeared in the United States in 2002 (US Department of Commerce, 2002). It has also been argued that as digital skills are taken as only referring to the skills of managing hardware and software any problems users face in this area are only temporary phenomena that can be solved once a computer and network connection is established (Van Dijk and Hacker, 2003). Usage access is likewise ignored – because it is seen as a personal choice and therefore irrelevant to policy. Overall therefore, there has been a hardware-orientated approach to the problem of access that frames the debate and pushes aside questions of what is done with access once it is received (Bridges.org, 2003a).

A broader conception of access

The conception of access outlined above moves on from simple access to hardware. As Internet use continues to grow around the world and becomes more accepted as a technology that is here to stay it seems that access problems of technology gradually shift from the first two kinds of access to the second two kinds (Van Dijk, 1999). If the obstacles of material and mental access are solved then skills and use problems become a higher priority. Consequently the issue actually becomes more related to library and information science as Internet access programmes begin to start looking at abilities to select, process and apply information. The issue therefore moves up to a policy level, with education and information policy playing a central role in solving problems in access differentials.

Bridges.org, a global organisation examining disparities in Internet access worldwide, widens the concept of access even further so as to bring in actions undertaken on a political level (Bridges.org, 2003b). Their 'Real Access' concept contains 12 criteria that start from material access and move up to the importance of national information policy. The arena for examination is the nation state, and the starting point for the criteria is the idea that access to technology is about more than physical access, and that there are many factors to take into account if technology is to stand any chance of improving individuals' lives.

At the beginning of the scale is the question of physical access, which asks if Internet technology is available and physically accessible to users. This is dependent on connectivity, especially telecommunications infrastructure, within countries and corresponds to Van Dijk and Hacker's 'material access'. The second criterion is the need for appropriate technology to be employed within any given country, for technology that is not relevant to local conditions may be unlikely to succeed. This is especially relevant in countries with underdeveloped telecommunications infrastructures where services through mobile phone technology may be more appropriate than the provision of desktop computers. This criterion asks: which kind of technology is best suited to the needs of those people currently without access to the Internet? The third criterion looks at questions relating to the affordability of the technology and the affects on access in terms of how many people are priced out of the market for Internet use. Taken together, these first three criteria closely correspond to the concept of material access put forward above.

Only one of the 'Real Access' criteria corresponds to the problems of access caused by Van Dijk and Hacker's mental barriers. The criteria of socio-cultural factors asks whether or not people are limited in their use of technology as a result of gender, race or other socio-cultural factors. This incorporates issues of discrimination and opportunity within societies and can be expanded to incorporate factors of age, religion or sexuality.

The next three criteria are connected to Van Dijk and Hacker's digital skills. Bridges.org put forward the concept of capacity which addresses whether or not people understand how to use Internet technology and its potential uses. Technology is useless unless people can understand how to use it effectively and the advantages it might bring. Connected closely to this is the issue of relevant content – is there locally relevant content, especially in terms of language? Content is only relevant when its substance is interesting to users given their culture background, and accessible given their reading, writing and language skills. A situation where 17 million speakers of Igbo are unable to access more than 5 web sites in their own language aptly illustrates the importance of this criterion (Kenny, 2003). Even if people understand the technology and are able to find relevant content, there is a further criterion of importance, that of integration - does the technology further burden people's lives or does it integrate into daily routines? In many parts of the developing world Bridges.org have found that people are reluctant to use technology if it is something they have to do on top of everything else. Technology is far more likely to be taken up if it becomes part of people's daily lives.

The remaining five criteria broadly correspond to the concept of differentials in usage access, in that they impact upon how people see the Internet and consequently what types of use they put it to. The criteria of trust looks at whether people have confidence in and understand the implications of the technology they use. This would be in light of,

for example, questions of privacy, security or Cybercrime. At this point, the concept of 'Real Access' is broadened out from Van Dijk and Hacker's work, for trust in this case assesses if, as technology is integrated into society, people understand what happens 'behind the screen' so they can enter into communications and transactions with governments, businesses or others with confidence. Trust – and consequently use - will be affected by the next criteria, the existence of legal and regulatory frameworks for Internet use within countries. This is a question of how laws and regulations affect technology use and what changes are needed to create an environment that fosters its use. This criteria is very much connected to a government's information policy, and its effects can be seen in, for example, the level of competition in a country's telecommunications sector or the ease of entering the market.

Following on from issues of trust and legal frameworks, but still connected to them, are criteria related to the local economic environment and the macro-economic environment. It will be the local economy that determines the level, frequency and sustainability of technology use in that, ideally, technology will be able to bring economic benefits at a level visible in the community. But for this to happen the macro-economic environment (adjusted by national economic policy) needs to be conducive to widespread technology use. This is closely connected with legal and regulatory frameworks, in that economic policy needs to cover areas of transparency, deregulation, investment and labour issues. The creation of an accountable framework encourages businesses but also brings on board individual users – especially as it ties into issues of trust, and alters usage differentials accordingly.

The final criteria of 'Real Access' is the most closely connected to issues of information policy. Bridges.org identify political will as being most important to creating real access for users within a given country. Is there political will in government to do what is needed to enable the integration of technology throughout society? To what extent is a country's information policy – if it exists - appropriately focused, coherent and able to address issues in the long-term? The inclusion of political will as an important factor broadens the question of access, and moves the debate some considerable distance from simple questions of a computer and a network connection.

Table 3 below shows how Van Dijk and Hacker's types of access correspond with the criteria of 'real access' put forward by Bridges.org:

Van Dijk and Hacker's 'Multi-faceted concept of access'	**Bridges.org 'Real Access'**
Mental Barriers	Socio-cultural factors
Material Access	Physical access Appropriate technology Affordability
Digital Skills	Capacity Relevant content Integration
Usage Access	Trust Legal and regulatory frameworks Local economic environment Macro-economic environment Political will

Table 3: A 'Multi-faceted concept of access' and 'Real Access'

Remembering Van Dijk's (1999) contention that problems with mental and material access gradually give way to problems with digital skills and usage access, the real access criteria can also be grouped to reveal a movement from access issues on an individual level to issues on a much broader, macro level. It would appear, therefore, that as Internet access increases within a country, priorities and different ways of approaching access change. This contention is explored further in the conclusion.

Access to the Internet, for the purposes of this research, is therefore held to be a far more complex phenomenon than simple access to a computer with a network connection. It is a phenomenon that exists on, and can be influenced at, a variety of different levels. Borgman, Van Dijk and Hacker, and Bridges.org have broadened the concept to include socio-cultural, economic and political factors but, from the point of view of libraries, the traditional inclusions in a theory of access are those areas relating to material access and digital skills. This is not to discount the importance of wider factors that help facilitate access, such as the frameworks that can be set up to encourage nascent telecommunications industries. Any factors that have an effect on usage patterns are of interest to the library community, not least because libraries operate within overarching legal frameworks and are at the whim of users. As a result, if libraries wish to influence Internet access at all levels they will need to pay attention to developments in all areas of the above access model. It is clear that all of the factors that influence access outlined above are interrelated to a degree, and libraries must be aware of this at local and national levels if they are to best provide Internet access to users. The core purpose of this dissertation, however, is to examine the extent to which libraries can provide access to information resources on the Internet, and this area must now be further defined so as to provide a background for examining any threats to information access.

Access to Internet-accessible information resources

The ability to find, retrieve, and utilise information relevant to individuals' lives is an area that goes right to the heart of the concept of freedom of access to information, and is at the core of library profession (Sturges, 2001). In light of the above conception of access, libraries must first strive to provide material access to the Internet, and bolster this with the advocacy of digital skills. It is access to information resources on the Internet that libraries are most concerned with, and the nature of these resources must now be discussed to define the area this research is focused on.

From an Internet point of view, Fox et al (1995, p23) describe information as being "what flows over the networks, what is presented to us by our consumer electronics devices, what is manipulated by our computers, and what is stored in our own libraries". Information, in this context, is any entity that can be digitized, from numeric facts to conversations. Definitions of information differ across disciplines (Losee, 1997) and this dissertation is not the place to attempt a generally acceptable definition of information . In light of this, information in a network (Internet) context only has been analysed by Buckland (1991). Three types of information are identified. Firstly, information-as-process, or becoming informed – when information is the act of informing. Secondly, Information-as-knowledge or when someone is informed, and when what he or she knows is changed. Thirdly, information-as-thing or objects such as data and documents that are informative or impart knowledge. Following Borgman's (2000b) lead, it is the third type that shall be used for the purposes of this dissertation, for libraries as providers of digital information via the Internet can only deal with information as 'things'. This means 'things' that can be collected and organised online – processes and information-as-knowledge cannot.

Borgman is concerned with access to online documents, and she defines documents along Buckland's (1997) lines. This means defining documents as texts, photographs, music recordings or films (or digitised reproductions thereof). Under some definitions 3D objects, such as observed artefacts in a museum, are included. With advances in technology, representations of such artefacts are possible in an online environment, and as such shall be included in a definition of information resources. Borgman cautions that the matter of what constitutes a document is subjective but suggests that whether something is a document or not depends on its function and context. This means that what are documents to some people are merely data to others. On the Internet, documents are things that are collected and organized in digital depositories (web sites, databases) on behalf of a community of users, whoever they might be.

It is wise here to pay attention to the differences between documents and data. Borgman is writing from the point of view of digital libraries, and in this context there are certain conditions to be met before some 'thing' might be viewed as a document.
An email message on its own may equal a document, for example, but rarely are they collated and put into digital libraries. Likewise, individual credit card transactions would probably not be considered a document, but if they are collected them and stored they might become so. When transaction information is aggregated into databases – then the profiles of individuals created become documents (Borgman, 2000b). This type of database, able to be updated and accessed in real-time, is an example of the changes the Internet has brought to document creation. The level of interrogation and

interactivity possible marks this type of Internet-accessible information resource as different to some of the printed materials libraries have offered to users in the past.

Other types of online information resources come in more recognisable formats, even if there are now far wider variety of texts, graphics, moving images, sounds – and various multimedia combinations of the above –displayed online. There are still versions of newspapers, journal articles, letters, photographs, or maps to be found on the Internet, but there are also newer versions of these familiar formats. Bazerman (1988) calls these adapted forms 'genres' and they are distinguished by a more hypertextual and interactive approach to information provision. This includes, for example, using indexes or references as active (hyper) links; clickable/zoomable maps; manipulated images (sometimes in 3D); blogs, personal homepages; interactive flash movies or games; and the customisation of content predicted in the 'Daily Me' (Sunstein, 2002).

It would appear, therefore, that Internet-accessible information resources occupy a very wide playing field. Borgman tries to provide a useful limiting concept to aid study and conception in the form of the Global Digital Library (GDL). The GDL encompasses "digital libraries that are connected to, and accessible through, a Global Information Infrastructure" (Borgman, 2000b, p63). It is a hybrid library, containing links to digital documents and non-digital ones. This would mean access to library catalogue for examples, along with access to dedicated electronic materials. The global information infrastructure, discussed in Chapter Two, is conceived as a network of integrated telecommunications and computer networks serving up every imaginable information and communication application. The Internet is not yet the global information infrastructure envisioned by Gore (1994) or the G7 (1995) but nonetheless, the distinction between the GDL and the global information infrastructure is useful for the purposes of defining Internet-accessible information resources. The GDL is a subset of the global information infrastructure, which encompasses other capabilities and services such as transactions in support of TV and radio broadcasts; mobile communications; individuals' credit card transactions; aggregate financial transactions from financial institutions, and business-to-business traffic. These, Borgman argues, are essential aspects of global information infrastructure, but not part of the GDL. She would also exclude games, chatrooms, online banking (the actual process, not the search for information on it) and email – unless it was organized.

While Borgman's thinking on the GDL is useful for trying to delimit information resources into an area of manageable study, it is problematic when one looks at what libraries, public libraries especially, are providing when they let users access the Internet. Email access is a grey area. The Internet is not only an information retrieval technology, it is also a communications tool, and very often the boundaries between the two aspects are blurred. Information can be retrieved through the use of email and as such it is a tool libraries should provide for users – although whether it is possible to ensure that users stick to using email for information retrieval purposes is unclear. Likewise, it could be argued that specialist chatrooms are useful to certain library patrons, although it is likely there are many more that exist for pure entertainment purposes. Because the Internet is so many things at once – information retrieving tool, communications device, entertainment system – it becomes very difficult to settle upon an agreed definition of online information resources.

A definition of 'information resources' is therefore likely to be remarkably broad, more so if the 'Internet-accessible' is added as a qualifier before the term. For the purposes of this research, information resources are defined as collections of knowledge which are accessible to the learner, such as books, magazines, newspapers, film, audio and video recordings or data stored in computer memory, on magnetic tape, on fixed, moveable or compact disks. Internet-accessible information resources are such collections that can be remotely accessed via the Internet – the information having been digitised and stored at a remote location ready for retrieval by the user. This information should be able to retrieved via the World Wide Web, or through remote databases that libraries can afford to access. Furthermore, because individuals are also repositories of information, email, discussion groups, relevant chatrooms and mailing lists should all be accessible through library Internet access. Keller (1995) argues that network use should not be limited to the passive receipt of information – users should be information providers too.

To access these resources, material access and connectivity are essential, for this is a pre-requisite for using a computer network and the resources and services it supports. Resources and services must be relevant to users, for connectivity is meaningless without this. Users must be able to successfully locate, retrieve and use information contained within various computer systems (Lynch, 1993). Obviously user skills will have a bearing on this aspect. Finally, content retrieved, along with being relevant, must also be usable by every citizen, not just technical specialists. This means that in order to be 'accessed', information must be retrieved in some form in which it can be read, viewed or employed constructively. This raises issues of software incompatibility, language, as well as access for disabled users. Borgman sums it up thus: access to online information resources equals "connectivity to a computer network and to available content, such that the technology is usable, the user has the requisite skills and knowledge, and the content itself is in a usable and useful form" (Borgman, 2000b, p57).

New forms of access and their effects on libraries

The introduction of the Internet into libraries has changed the way information resources are provided to users. By way of illustrating this, Bawden and Robinson (2000) compare the effects of the Internet on the circulation of information with the effects of the introduction of publishing in Western Europe in the late 15th century. While printing (including engraving and therefore the inclusion of formulas and diagrams) was a 'true revolution', printed works had a small audience at first due to low literacy levels and the high costs of materials. Despite this, the knowledge explosion caused by the effects of printing soon had an influence beyond the elite. This was because printing released into the public domain not only humanist texts or scientific works, but also more populist writings alongside lewd or bawdy materials. Bawden and Robinson argue that every new communications medium, the Internet included, passes through a stage of wide-angled unfocused production such as this.

The Internet takes the revolution caused by printing one stage further. If printing ended the era of the wandering scholar in favour of the sedentary scholar, then Internet technology adds to this by providing information to the user wherever he is. New means of receiving information via mobile technologies cause the sedentary and the wandering scholar to fuse. At the same time the Internet continues the revolution in communications caused by printing thanks to the speed and low cost of distributing

information. The crucial difference, however, is the way the Internet, in its multimedia format, blurs the lines between information provision and consumption. This has changed information provision in libraries by allowing the library user far more control over how he or she accesses information.

Prior to the Internet, initiatives such as IFLA and UNESCO's Universal Availability of Publications (UAP) programme, demonstrated the commitment of libraries to providing the widest possible access to information. Networks of libraries, at local, national and international levels co-operated to offer printed publications to users. Internet technology changed this situation and enabled libraries to offer wider access to information than previously, far quicker and, in theory, more cheaply for users. Introducing public access Internet into libraries lets users select information, bypassing the librarian as mediator and leaving the user dependent on his own skills at finding information that may or may not be valid. Stielow (2001) compares this experience to the opening of library stacks to the public for the first time. Availability of information on the Internet, however, differs from 'traditional' library stock in that librarians select the stock to go in their libraries. If selection in a traditional sense were applied to the entire Internet, libraries would make available only specific sites actively located, evaluated and added to their systems. On the Internet, no such selection procedures exist. Information is posted to the Web, and then users do the selecting.

With regards to subscription services however, librarians evaluate and purchase the electronic resources to which they subscribe. It might be argued that this process, along with the highlighting of web resources or the creation of collections of links on their homepages, is the equivalent of compiling print bibliographies (Pinnell-Stephens, 2002). Be this as it may, the power shift in favour of users as controllers of their information seeking destinies is decisive. Librarians can supply bookmarks or recommended sites, but essentially when users sit in front of a library Internet computer they are in charge. In theory, users no longer have to deal with the restrictions imposed on materials selection by budget, bulk ordering, selector bias, or peer review. They are free to find their own way, dependent on their own skills, through the mass of information the Internet has to offer.

The process of information retrieval, for both librarians and library users, is therefore now simpler and more complex than ever before. It is simpler thanks to the speed and simplicity of search mechanisms that return keyword matches in seconds. On the other hand, it is more complex due to the staggering size of the Internet and the lack of organisation to found amongst the information online. In 2001 it was estimated that there were 19 terabytes (trillions of bytes) of data on the 'surface web' and another 7500 terabytes hidden in the 'deep web' (Chowdhury and Chowdhury, 2001)[15]. This corresponds to over 5 billion web pages on the surface web alone, for which there is no single catalogue and no recourse to library classification schemes (Bjorneborn, 2004*)*

There are many problems that result for librarians as a result of this situation. New skills must be learned in information retrieval, and provision made for users to better utilise online technologies. Additionally, because it is impossible for librarians to know everything on the Internet (unlike before, when a library catalogue theoretically

[15] The deep web is differs from the surface web because the content there is stored in searchable databases which will only produce results dynamically in response to a direct request (Chowdhury and Chowdhury, 2001)

contained all available holdings) there are new problems regarding the types of information users are accessing. The Internet, which has sometimes been referred to using analogies of the Wild West (Rheingold, 2000), can be seen as a minefield of (mis)information, pornography, hoaxes, scams and ephemera of all kinds. If a cynical view is adopted it might be asked: just what exactly is it that the Internet does for freedom of access to information?

The Internet, the library user and increased freedom of access to information

It is the link between technology and increased access to information (see Chapter Two) that has seen the Internet assume a central position in library policy in recent years. Kranich (2001) touches upon the idea that many members of society are left outside of the information loop due to a combination of factors. The idea of bringing this part of society into the so-called information age has led to research into the concept of social inclusion, and this notion has informed recent library policy, especially with regards to provision of information and communications technologies (ICTs) (Berman and Phillips, 2001).

Train, Dalton and Elkin (2000) outline some of factors contributing to exclusion, listing the barriers created by ethnic origin, gender, sexuality, physical or mental disability, educational attainment, employment status and economic situation. Governments, especially in the EU, have begun taking steps to reduce the effects of social exclusion and libraries have been at the forefront of much action. A report from the UK Government Social Exclusion Unit (1998) highlighted the importance of information access in the community and in wider society, and with libraries considered obvious points of access for information it was logical that the government's strategy for increasing social inclusion focused on libraries' ability to provide information in a supportive and non-judgemental atmosphere.

The use of ICTs as a way to overcome barriers has figured centrally in schemes to solve the problem. The idea of the Internet as a tool to reduce social exclusion has gained credence thanks to its ability to open access to government information and communication channels, and libraries have contributed to this concept by making collections and catalogues available online for those unable to physically access library resources. Indeed, the lure of virtual libraries as information gateways for the socially excluded is a theme much explored in recent years (Berman and Phillips, 2001; Hendry, 2000; Moore, 2000; Train, Dalton and Elkin, 2000). With more and more governments attempting to deliver public services online over the next few years, information – and the ability to access it – is becoming more important in empowering communities to take control of their future.

Consequently, Internet access in libraries has become a priority in many countries in the past 5 years. Inevitably the extent of this access differs greatly around the world but an emphasis on connecting libraries to the Internet has come to fruition in work by many public and private organisations. The following are three examples of recent projects to connect libraries to the Internet:

The People's Network (UK)

- http://www.peoplesnetwork.gov.uk
- The People's Network project has connected over 4000 public libraries in the UK to the Internet with the aid of National Lottery funding (The People's Network, 2004). The project is a result of the UK government's commitment to providing Internet access to all citizens who want it by 2005. Each library ICT centre offers basic Internet and email access, along with ICT training for those in need of Internet skills. The project has had three phases, showing a progressive approach to Internet provision similar to the conceptions of access proposed by Van Dijk and Hacker and Bridges.org: provision of high-speed network infrastructure; ICT training of public library staff, enabling cascade training for members of the public; digitisation of content to free up access to resources. The scheme has been a great success in the UK, and the idea has consequently been exported to other countries (Wired, 2002)

The Abre tu Mundo ("Open Your World") project (Chile)

- http://www.biblioredes.cl/bibliored
- With a contribution of over $9 million dollars, the Bill and Melinda Gates Foundation was the largest donor behind a project to wire all 368 of Chile's public libraries to the Internet. This project also received over $6 million dollars of government money and the success of the project is an example of a successful public/private approach to Internet provision in libraries (Albanese, 2002). The project provided computers, training labs and training programmes to ensure that the number of public libraries in the country with Internet access went from 10% to 100% (Bill and Melinda Gates Foundation, 2004b). Staff and user training were part of the project and those receiving training paid nothing to take part. The project has been extremely successful, and since its initiation library use has increased 53 percent among adults and 28 percent among children (Ibid)

Bibliored – Bogotá's Network of Public Libraries (Colombia)

- http://www.biblored.org/
- The Bibliored network has tackled Internet access problems in Bogotá, Colombia, from the ground up, building three new libraries in one of Colombia's poorest cities and upgrading 16 existing library buildings (Caballero, 2003). Overseas financial aid from the Spanish government helped get the project off the ground. The project, which is part of a wider education and technology use strategy for the city of Bogotá, has placed Internet and multimedia facilities in each library, and made ICT training programmes available for all users who want them. The project has been a great success, greatly increasing library visitor numbers and winning the 2002 Bill and Melinda Gates Access to Learning Award administered by the Council on Library and Information Resources (Bill and Melinda Gates Foundation, 2002)

Global Internet use

The case studies briefly outlined above show that efforts are being made, in co-operation with governments and private sector organisations, to improve and extend Internet access in libraries around the world. Nevertheless, there are great differences in levels of access as shown by the results of empirical investigations undertaken as part of

this PhD research. To provide context for these results it is useful to outline the current extent of Internet access around the world on a more general scale, including differences in user numbers and Internet penetration between regions and also differences in how the Internet is used.

Accurate statistics on global Internet use are hard to come by due to a lack of comparable data on its spread across the world. Ideally such data would be based on comprehensive and identical surveys in every country and such surveys would have been conducted on a regular basis over many years. As Minges (2000) points out, despite recent increases in the quality and quantity of information being collected around the world (Clickz, 2004; Global Diffusion of the Internet Project, 2003; ITU, 2003) there are still wide variations in definitions of access, and in the comparability and scope of investigations. Many recent studies, led by market research companies, have concentrated more on e-commerce (Wolcott and Goodman, 2003). Additionally, this type of information has previously been compiled for developed countries, with a particular emphasis on findings from the United States (Norris, 2001). Consequently, there is a shortage of publicly available data on Internet accessibility, particularly for developing countries.

There are several factors to take into account when judging any figures on global Internet use. First, between 1988 and 1998 the number of countries connected to the US National Science Foundation Internet backbone rose from seven to over 200 (ITU, 2002). At present, numbers of Internet users worldwide are continuing to grow rapidly each year (Clickz, 2004). Secondly, as outlined above, it is critical to distinguish between different aspects of access. Minges (2000) discusses this problem and suggests a set of statistical indicators that could be used across countries in future to differentiate extent of access. Country population figures are needed to calculate Internet penetration rates. This figure is the total potential Internet universe for a country. Beneath this layer is the number of people aware of the Internet, a concept contains elements of Van Dijk and Hacker's mental access. People must be aware of the Internet in order to use it. Following this is the number of people covered by the Internet i.e. the number of people in a country who are within easy access of the Internet regardless of whether they are using it. This is a type of coverage statistic and would indicate the potential Internet user market within any given country. Minges believes that this statistic is the fundamental measure of universal access to the Internet for, despite problems in defining 'easy' access for example, it covers the number of people who could access the Internet if they wanted to. High coverage would denote a significant policy achievement in that technically, people can access the Internet even though they may choose not to do so for reasons of cost or lack of interest (Minges, 2000). These people correspond to the Internet 'want-nots' mentioned above (Arrison, 2002).

When considering libraries as providers of Internet access measurement of coverage is the important indicator to bear in mind. Libraries exist to provide information resources to users, and must offer as wide an access to these, in any format, if freedom of access to information is to be as equal as possible. Determining coverage is not easy however, for few organisations measure statistics on the number of community locations with access (Minges, 2000). On top of this, the term 'access' may often be confused with 'user' which further complicates the situation. This research has chosen to measure the extent of 'access' within the international library community, but to contextualise its findings figures that show numbers of Internet 'users' must be presented in order to

paint a picture of Internet use worldwide. Minges places the number of users as the indicator below coverage, with frequency and sophistication of use -Van Dijk and Hacker's 'Digital skills' – as important qualifiers. Finally, below this comes the number of subscribers – people who are actually paying for access to the Internet. This is perhaps the easiest statistic to calculate, using subscriber data from ISPs within a given country, but because most users do not themselves pay directly for access it may not be the best measure of usage.

Using these methods it is theoretically possible to construct a visual representation of the types and levels of Internet access within any given country. Only theoretically however, for, as Minges points out, reliable statistics for categories such as 'Awareness of the Internet' or 'Internet coverage' are hard to come by. As a result Figures 5 and 6 below are intended to be indicative of what a visual representation might look like for a country with high levels of Internet access and a country with low levels.

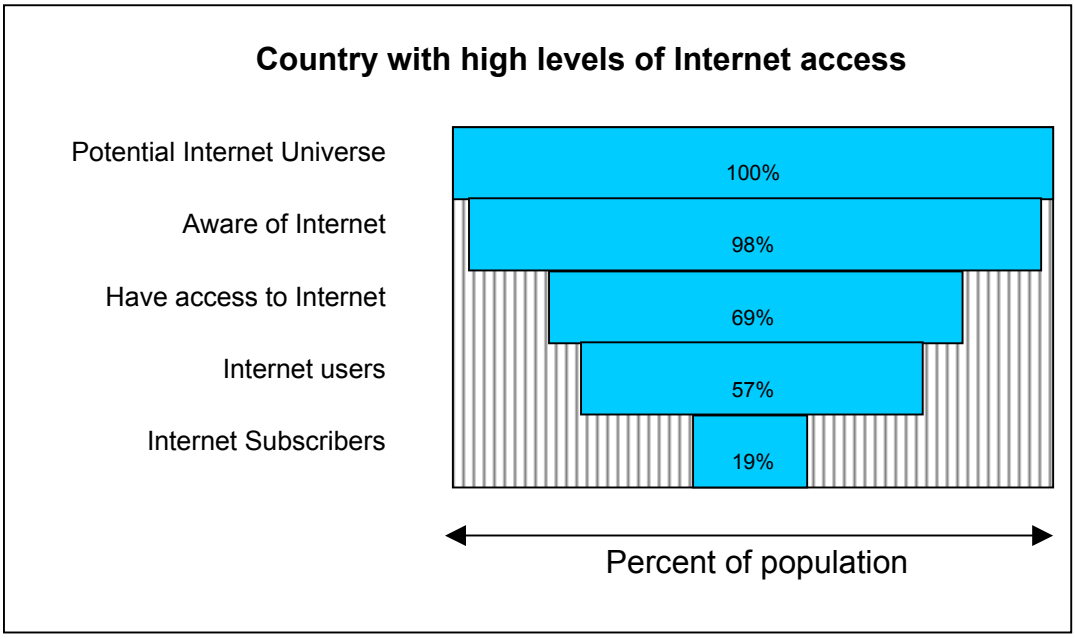


Figure 5: Country with high levels of Internet access

This table is based on a variety of figures available for Canada, Finland and the United Kingdom from Minges (2000) and from the CIA World Factbook (2003). These three countries have broadly similar levels of Internet users and access in libraries. User figures are normally 3 times greater than those for subscribers (Minges, 2000). Access to the Internet (coverage) comes from a Canadian survey, while awareness of the Internet comes from Finland (Ibid).

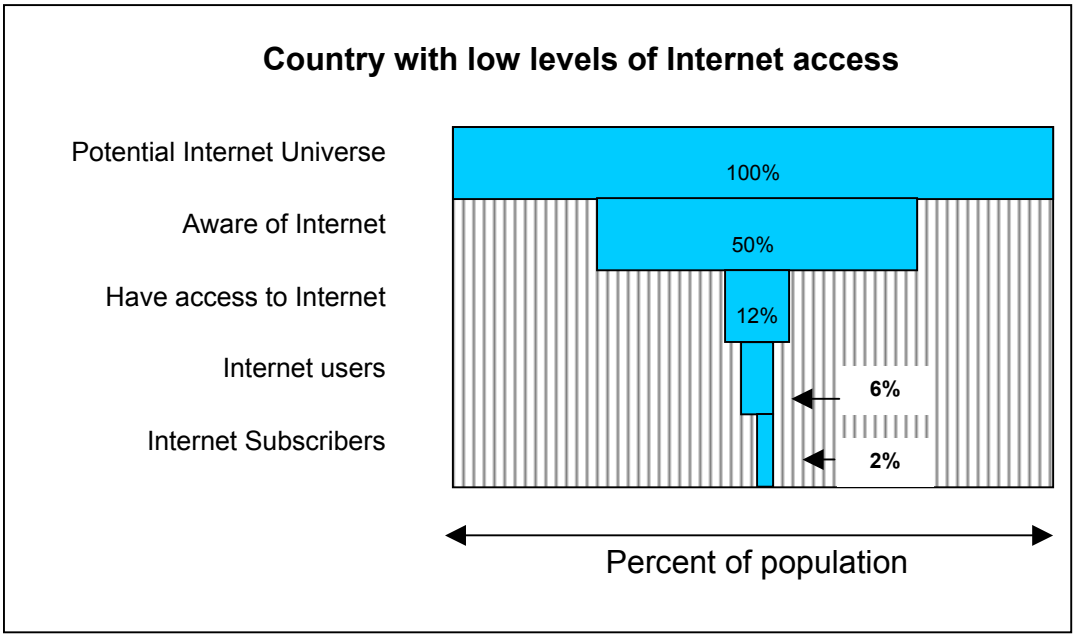


Figure 6: Country with low levels of Internet access

Figure 6 is loosely based on figures for a developing country with 6% of the population using the Internet. Internet subscribers are taken to be one third of users as per Figure 5. Few studies of Internet awareness or Internet coverage exist for developing countries and therefore the values in this table are the author's own guess.

Internet Users Worldwide 2004

Figures 5 and 6 could be used, if source data demonstrated reliability, to compare and contrast countries with differing levels of Internet development. Differences between regions may also be able to be compared in a similar way, although a statistical table containing diffusion (percentage of population online) rates will also illustrate the situation on a wider level. Table 4 overleaf seeks to show global Internet users by region, in order to demonstrate the disparities between regions. Several sources were used for the calculation of the figures in the table, and the exact methodology is detailed in the Introduction.

Table 4: Global Internet users May 2004[16]

Region	Number of Users	Population	% of Population Online
Northern America	206,396,000	322,667,843	63.9
Oceania	15,390,000	31,954,413	48.2
Europe	223,921,200	693,952,141	32.2
Latin America and the Caribbean	54,922,019	546,024,510	10.1
Asia	311,084,800	4,125,801,387	7.5
Africa	10,890,405	820,674,686	1.3
Total	822,604,424	6,541,074,980	12.5

From an overall perspective, it is clear to see that Northern America, Oceania (which has a very small population compared to the other regions) and Europe have the highest degree of Internet penetration in the world. Asia has a high number of users (over 95 million of whom are in China) but Internet penetration is still at less than 10%. At the bottom of the scale is Africa where just over one percent of the population have used the Internet. Some of this situation can be explained by the scarcity of telephone lines on the continent, where there are approximately 18 million phone lines, or one for every 50 people. Outside North Africa and South Africa, there is only one line for every 200 people (NUA, 2002a). What the above figures show very clearly is that the Internet has not yet reached the vast majority of people on the planet. On a global scale, the Internet is less widespread than the telephone or the television, and in many countries less than one percent of the population use the Internet (Woolcott and Goodman, 2003). The growth of the medium worldwide is non-uniform.

This can be seen if regional figures are highlighted further. Leaving aside Northern America for a moment[17], a region like Oceania illustrates some of the inequalities of use. Australia and New Zealand provide nearly 99% of the Internet users in the region and less than 3% of the remaining 8,274, 413 people are online. Likewise, Latin America and the Caribbean owe most of its Internet users to countries in South America, where Chile has nearly 33% of its population using the Internet. Elsewhere the countries of the Caribbean are experiencing very low numbers of Internet users, with the biggest country in the sub-region, Cuba, having just over 1% of its 11 million population online. In Central America the percentage of the population using the Internet hovers at around 10%.

Asia displays similarly variable characteristics, with nearly 60% of the region's Internet users coming from China, Japan, South Korea and India. Just 7.5% of a region of over 4 billion people is currently online, despite recent increases in Internet diffusion. In Africa, nearly half of all the continent's users come from South Africa where just over 10% of the population can access the Internet. In the sub-regions of Eastern Africa,

[16] This table is based on statistics produced by Clickz.com, up to and including May 2004, population figures from the CIA World Factbook 2003 and regional definitions from the United Nations Population Prospects Database. Further details can be found in the Introduction.

[17] The vast majority of the population in Northern America is in Canada and the United States, leaving only the populations of Bermuda, Greenland and St Pierre-et-Miquelon to make up the rest of the region

Middle Africa and Western Africa, less than one percent of the population has used the Internet.

In Europe numbers of Internet users are significantly higher and the medium has diffused throughout society far quicker. However, while nearly a third of all Europeans use the Internet, there are still discrepancies across the continent. Over 50% of the population in Northern and Western Europe are Internet users for example; while in Southern Europe it is just over 25% and in Eastern Europe it is approximately 15%. It is worth noting that four of the five countries with the highest levels of per capita Internet usage in the world (Denmark, Iceland, Norway and Sweden) are all to be found in Northern Europe, while the fifth (Australia) is in the Southern Hemisphere.

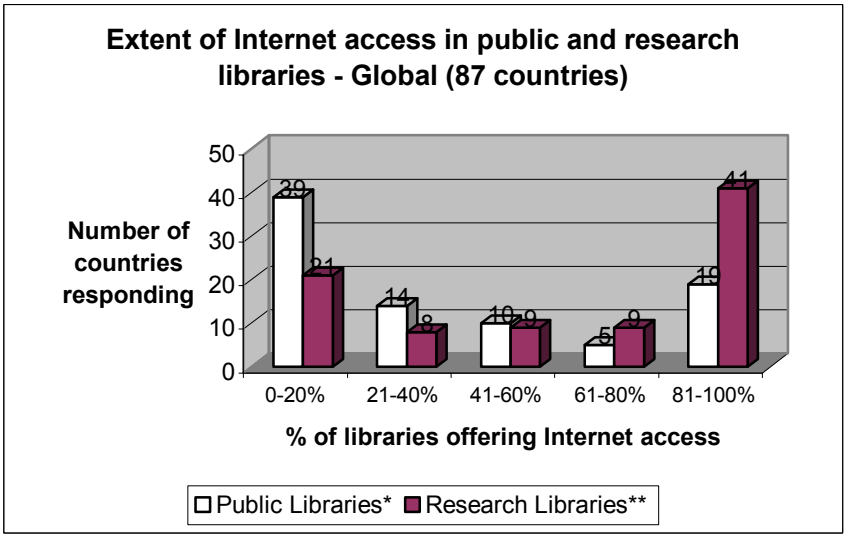
On a global level therefore, it would appear that approximately 820 million people are using the Internet in May 2004. This is someway yet from the Computer Industry Almanac's prediction that Internet users will reach 945 million this year (Clickz.com, 2004). On the other hand, it is clear that Internet use continues to expand year on year and will continue to do so for the near future (NUA, 2002b, 2003; Clickz.com, 2004[18]).

An empirical investigation into the extent of Internet access in libraries worldwide

To explore how the International library community has tackled the problem of providing Internet access to users an empirical survey of IFLA member countries was undertaken in the spring of 2003. The survey took the form of a questionnaire, the methodology of which is explained in the Introduction. Question 1 concentrated on the extent of Internet access within each country's libraries by asking what percentage of libraries offered Internet access to users. Internet access in this case is assumed to correspond with Van Dijk and Hacker's concept of material access i.e. a computer with a functioning network connection. Two types of library were listed for evaluation – public libraries and research libraries. Research libraries are taken to include the libraries of all educational establishments – schools, colleges and universities. This is undoubtedly a broad classification and leaves little room for 'special' libraries in the survey. The question was most interested, however, in access for members of the public and student/academic users and it was felt that the classification used kept things simple for respondents. Senior members of a country's library community were therefore asked to estimate the extent of Internet access within the two types of libraries. An exact assessment of the extent of each country's Internet access would require greater investigation and access to detailed sources, along with a lot of time and effort. By targeting those who were familiar with Internet issues it was hoped the answers given would be valid, even if they were a personal estimate.

The number of correctly completed responses from individual countries totalled 87. Five continents were represented, and the geographical spread of responses was robust, with strong representation from Africa and Eastern Europe. Altogether, 60% of IFLA member countries submitted a response. On a global scale, the results of Question 1 showed that access to the Internet in public libraries in the international library community is not as advanced as it is in research libraries. The results are displayed in Figure 7 overleaf:

[18] The Computer Industry Almanac predicts 1.2 billion users in 2005, 1.28 billion in 2006 and 1.46 billion Internet users in 2007 (Clickz, 2004).



*No answer from Nicaragua and Vatican City
** No answer from Costa Rica

Figure 7: Extent of Internet access in public and research libraries - global

While over 50% of respondents were able to offer Internet access in between 61 and 100% of their research libraries, public libraries appear to be less able to provide access to their users. Just over 45% of countries in the survey have Internet access in less than 20% of their public libraries. As far as access in public libraries is concerned there appears to be a real gap between the nations at the top and the majority of contributing nations at the bottom. To fully assess this gap Question 1 is broken down into regions to examine the differences according to geographical location.

Africa

16 countries responded to Question 1 in Africa, as illustrated in Figure 8 below:

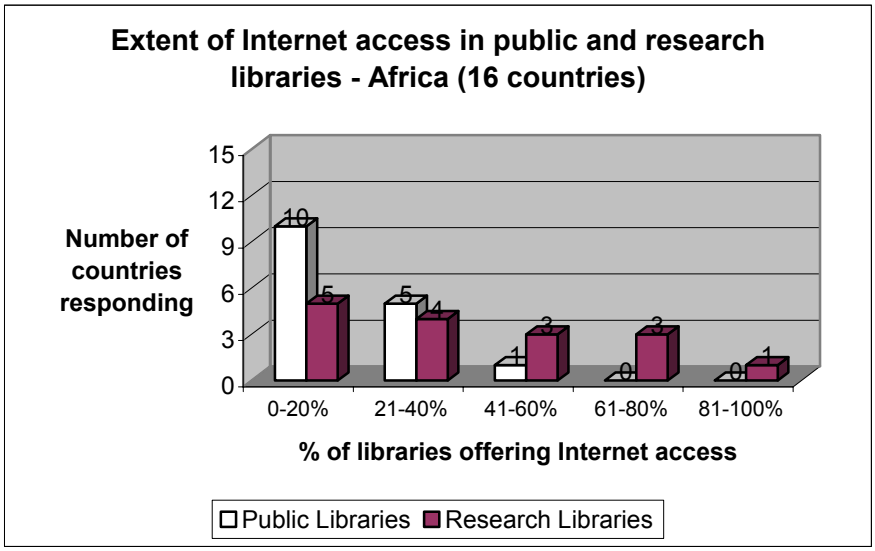


Figure 8: Extent of Internet access in public and research libraries – Africa

Table 5 below takes the responses and places them against Internet user figures for the appropriate countries in order to aid comparison:

	Population	Internet Users	% of Population using the Internet	% of Public Libraries offering Internet Access	% of Research Libraries offering Internet Access
Eastern Africa					
Ethiopia	66,550,000	20,000	0.03	Less than 20%	41-60%
Kenya	31,630,000	500,000	1.58	41-60%	61-80%
Uganda	25,630,000	60,000	0.23	Less than 20%	21-40%
Zimbabwe	12,570,000	100,000	0.80	Less than 20%	Less than 20%
Middle Africa					
Angola	10,760,000	60,000	0.56	Less than 20%	Less than 20%
Chad	9,250,000	4,000	0.04	Less than 20%	Less than 20%
Northern Africa					
Egypt	74,710,000	2,440,000	3.27	21-40%	21-40%
Southern Africa					
Botswana	1,570,000	33,000	2.10	Less than 20%	61-80%
Namibia	1,920,000	45,000	2.34	21-40%	41-60%
South Africa	43,600,000	5,160,000	11.83	21-40%	81-100%
Swaziland	1,160,000	14,000	1.21	21-40%	21-40%
Western Africa					
Benin	7,040,000	25,000	0.00	Less than 20%	Less than 20%
Cape Verde	412,137	12,000	2.91	Less than 20%	Less than 20%
Gambia	1,500,000	5,000	0.33	Less than 20%	21-40%
Ghana	20,460,000	200,000	0.98	21-40%	61-80%
Niger	10,050,000	12,000	0.12	Less than 20%	Less than 20%

Table 5: Library Internet access and overall Internet use – Africa

The survey results indicate that Internet access in public libraries in Africa appears to be very weak. There were no respondents that could offer Internet access in over 60% of their public libraries, and indeed only one (Kenya) that could offer access in 41-60%. Ten countries were providing Internet access in less than 20% of their public libraries, and of these ten Angola, Benin, Cape Verde and Chad had the same levels of access being offered by their research libraries. Countries with the lowest levels of access in public libraries all had less than 3% of their populations online which suggests there is a

long way to go in terms of material access at all levels before the situation in public libraries changes.

Access in research libraries was spread across all the categories, with South Africa providing the most access followed by Botswana, Ghana and Kenya. Responses indicated that access in research libraries on the continent is better than in public libraries, although with only one country – South Africa – offering access at the highest level there is still some way for other countries to catch up. Research library access might be judged to be a higher priority for governments on the continent at this point however, for half of the countries responding had higher levels of access in research libraries than in public.

When these findings are judged against current Internet use figures for the countries in question, and when the percentage of population online is considered, some interesting questions might be asked. Putting aside, for one moment, the numbers of public libraries in the country, and any differences in rural/urban provision, if less than two percent of the population of Kenya has used the Internet and yet Internet access is being provided in between 41-60% of its public libraries, and 61-80% of its research libraries, what does this mean? Are the libraries to be credited with providing a superb service in light of poor conditions? Or are the libraries doing a poor job of advertising Internet access in their facilities? How many libraries are there actually in the country? Of course, with the answers provided by respondents being opinion-led there are many questions raised but nonetheless the relationship between overall access in a country and access in libraries is one that might profitably be investigated further. In South Africa, where over 10% of the population use the Internet, 81-100% of research libraries are able to provide access and 21-40% of public libraries are providing access. It might be interesting to speculate on a total Internet user threshold that needs to be crossed before access in libraries becomes a priority for national information policy.

Asia

18 countries from Asia responded to Question 1, as illustrated in Figure 9 below

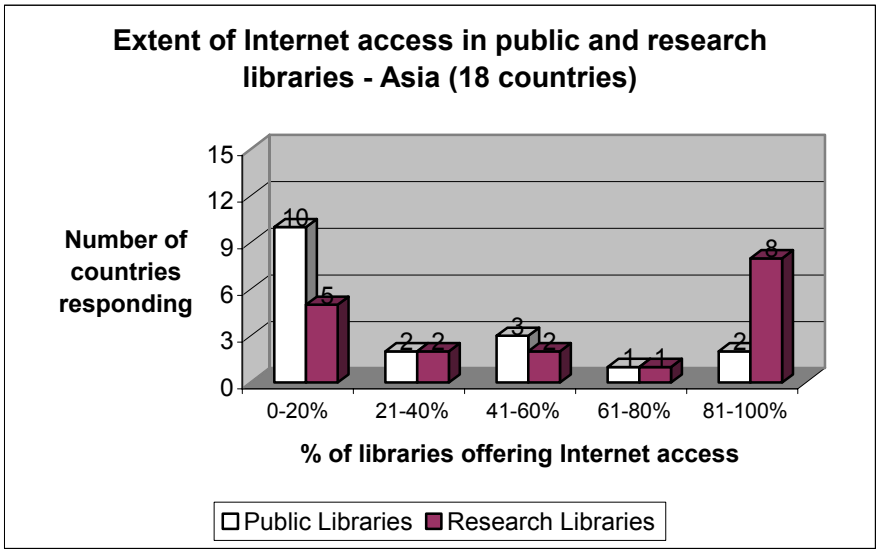


Figure 9: Extent of Internet access in public and research libraries – Asia

Table 6 takes these responses and places them against Internet user figures for the appropriate countries in order to aid comparison:

	Population	Internet Users	% of Population using the Internet	% of Public Libraries offering Internet Access	% of Research Libraries offering Internet Access
Eastern Asia					
China	1,280,000,000	95,800,000	7.48	41-60%	81-100%
Hong Kong	7,390,000	4,580,000	61.98	81-100%	81-100%
Macao	469,903	101,000	21.49	21-40%	41-60%
Japan	127,210,000	77,950,000	61.28	Less than 20%	81-100%
Mongolia	2,710,000	40,000	1.48	Less than 20%	Less than 20%
South Central Asia					
India	1,040,000,000	39,200,000	3.77	21-40%	81-100%
Iran	68,270,000	420,000	0.62	Less than 20%	21-40%
Nepal	26,460,000	60,000	0.23	Less than 20%	81-100%
Uzbekistan	25,980,000	100,000	0.38	Less than 20%	41-60%
South Eastern Asia					
Philippines	84,610,000	7,820,000	9.24	Less than 20%	Less than 20%
Singapore	4,600,00	2,530,000	55.00	81-100%	81-100%
Thailand	64,260,000	8,420,000	13.10	61-80%	81-100%
Western Asia					
Armenia	3,320,000	30,000	0.90	Less than 20%	21-40%
Azerbaijan	7,830,000	25,000	0.32	Less than 20%	Less than 20%
Cyprus	771,657	150,000	19.44	Less than 20%	Less than 20%
Georgia	4,930,000	25,000	0.51	Less than 20%	Less than 20%
Kuwait	2,180,000	200,000	9.17	41-60%	81-100%
Lebanon	3,720,000	300,000	8.06	41-60%	81-100%

Table 6: Library Internet access and overall Internet use – Asia

Asia is facing a similar situation to Africa with regards to access in public libraries, with the majority of respondents – 10 out of 18 – offering Internet access in less than 20% of their public libraries. Access in research libraries is in better shape than in Africa however, with 8 countries able to offer access in 81-100% of their research libraries. Encouragingly, 50% of the Asian respondents are offering Internet access in over 61% of their research libraries. Two countries (Hong Kong and Singapore) are able to provide the Internet in 81-100% of both public and research libraries, although five

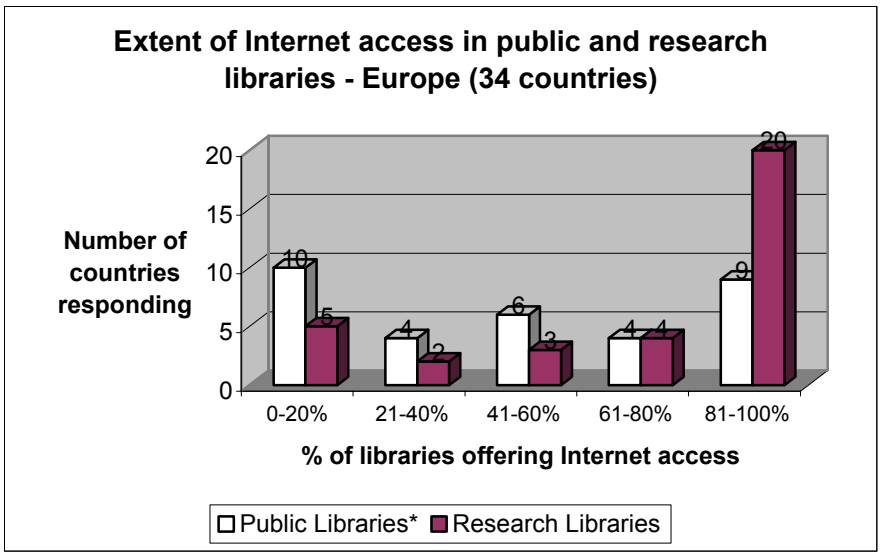
countries (Azerbaijan, Cyprus, Georgia, Mongolia, and the Philippines) are offering less than 20% in both categories and of those, Azerbaijan, Georgia and Mongolia, would appear to have a long way to go before this situation changes due to very low numbers of total Internet users in the country. Infrastructure deficiencies may be a problem here.

The overall pattern is again polarised Internet access in both public and research libraries. Internet facilities at research libraries are more available than in the public sector and it could be suggested that getting research institutions online is a higher priority for most of the countries in the region. This could be seen, for example, in Nepal and India, where research libraries appear far superior to public libraries in terms of Internet access. Again, the condition and extent of a country's public library service is an issue for consideration. Countries with the lowest levels of Internet access in public libraries are generally countries where Internet users number less than 5% of the population, although some definite exceptions to this exist. In Japan, for example, over 60% of the population are Internet users and yet Internet access in public libraries is very low. This might suggest that users in Japan are well served by Internet access in the home, at work or in cybercafes, and that libraries are not generally seen as a place to go online. A country like Cyprus also finds itself with 20% of the population using the Internet but with low levels of access in public libraries. It could be suggested that bringing Internet users into public libraries in these countries will be a challenge if users are happy to go online elsewhere.

Certain countries in the region have been very successful in providing Internet access to their citizens and this can also been seen in high levels of Internet access in libraries. Hong Kong and Singapore are the obvious success stories in the region as far as libraries are concerned, with both countries providing access to the Internet in between 81-100% of public and research libraries. Thailand, too, has good levels of library provision despite a low percentage of Internet users amongst the population. Outside of these countries, Kuwait and Lebanon appear to be moving in the right direction for while Internet users still number less than 10% of the population in both countries levels of access in research libraries are very high and public libraries are not at the lowest level. China also appears to be providing strong levels of access, although – as for all countries – whether rural areas of this vastly populated country see any benefits from Internet access is unable to be determined in this survey.

Europe

34 countries from Europe responded to Question 1, although Vatican City provides no public Internet access and does not feature in the results for public libraries. Figure 10 below illustrates the extent of access, while Table 7 overleaf allows comparison:



*No answer from Vatican City (Holy See)

Figure 10: Extent of Internet access in public and research libraries – Europe

	Population	Internet Users	% of Population using the Internet	% of Public Libraries offering Internet Access	% of Research Libraries offering Internet Access
Eastern Europe					
Belarus	10,330,000	422,000	4.09	Less than 20%	61-80%
Bulgaria	7,530,000	1,640,000	21.78	Less than 20%	21-40%
Czech Republic	10,240,000	150,000	1.46	21-40%	81-100%
Poland	38,620,000	10,600,000	27.45	Less than 20%	81-100%
Republic of Moldova	4,430,000	15,000	0.34	Less than 20%	41-60%
Russian Federation	144,520,000	22,300,000	15.43	Less than 20%	Less than 20%
Slovakia	5,430,000	1,820,000	33.52	41-60%	61-80%
Ukraine	48,050,000	2,810,000	5.85	Less than 20%	Less than 20%
Northern Europe					
Denmark	5,380,000	3,720,000	69.14	81-100%	81-100%
Estonia	1,400,000	429,700	30.69	61-80%	81-100%
Finland	5,190,000	3,260,000	62.81	81-100%	81-100%
Iceland	280,798	198,000	70.51	81-100%	81-100%
Ireland	3,920,000	2,060,000	52.55	81-100%	81-100%
Latvia	2,340,000	312,000	13.33	Less than 20%	81-100%
Lithuania	3,590,000	341,000	9.50	21-40%	81-100%
Norway	4,450,000	3,140,000	69.16	81-100%	81-100%
Sweden	8,870,000	6,120,000	69.00	81-100%	81-100%
United Kingdom	60,090,000	34,110,000	56.76	81-100%	81-100%
Southern Europe					
Andorra	69,150	24,500	35.43	61-80%	Less than 20%
Bosnia and Herzegovina	3,980,000	45,000	1.13	Less than 20%	Less than 20%
Croatia	4,420,000	480,000	10.86	21-40%	81-100%
Holy See	N/A	N/A	N/A	N/A	Less than 20%
Italy	6,110,000	3,040,000	49.75	41-60%	61-80%
Malta	400,420	59,000	14.73	41-60%	41-60%
Serbia and Montenegro	10,655,774	400,000	3.75	Less than 20%	41-60%
Slovenia	1,930,000	600,000	31.09	41-60%	81-100%
F.Y.R. Macedonia	2,060,000	100,000	4.85	Less than 20%	21-40%
Western Europe					
Austria	8,180,000	4,630,000	56.60	61-80%	81-100%
Belgium	10,280,000	5,010,000	48.74	81-100%	81-100%
France	60,180,000	26,340,000	43.77	21-40%	61-80%
Germany	82,390,000	41,860,000	50.81	61-80%	81-100%
Liechtenstein	33,140	N/A	N/A	41-60%	81-100%
Netherlands	16,150,000	10,340,000	64.02	81-100%	81-100%
Switzerland	7,310,000	4,680,000	64.02	41-60%	81-100%

Internet access in libraries in Europe is a tale of sub-regions. In terms of public libraries the lowest levels of access are to be found in Eastern Europe where five out of seven respondents offered the Internet in less than 20% of their libraries. Only Slovakia was able to offer access in as many as 41-60% of its public libraries. On the other hand, the highest levels of access are found in Northern Europe where seven out of ten countries have access available in 81-100% of public libraries. The remaining three countries in Northern Europe are the most recent entrants to the EU from the Baltic region – Estonia, Latvia and Lithuania – and in these countries public library access is lower, perhaps as a result of a more recently developed telecommunications infrastructure. Latvia in particular has the lowest provision of access in public libraries, whereas Estonia seems to be on its way to matching the likes of the Scandinavian countries. The other two sub-regions, Western and Southern Europe, present a mixed picture of public library Internet access. Southern Europe includes the Balkan countries of Bosnia and Herzegovina, Serbia and Montenegro and the Former Yugoslavian Republic of Macedonia, three of whom are offering access to the Internet in less than 20% of their public libraries. In this region it is the country with the lowest population, Andorra, with the highest levels of public library Internet access, higher even than Italy which has nearly 50% of its population using the Internet. This is a good reminder that the number of people in a country (and the accompanying library service) will make a difference to any figures. Western Europe is also varied in terms of Internet access, with the Netherlands and Belgium offering the highest level of access while France offers a quite low level – in 21-40% of libraries – for a country where over 40% of the population use the Internet.

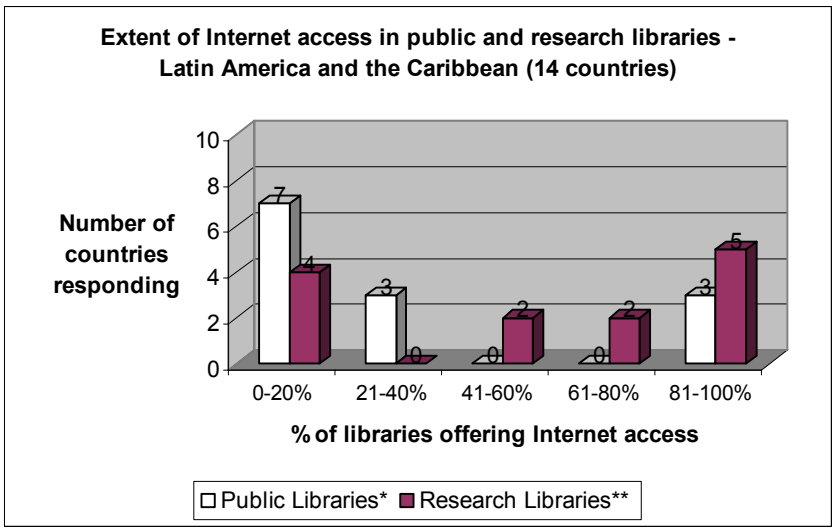
Across Europe there are far better levels of Internet access in research libraries – nearly 60% of respondents were able to offer Internet access in 81-100% of research libraries. Those countries offering very little access were generally Europe's smaller countries (Andorra, Cyprus, Vatican City) or suffered from poor telecommunications infrastructure (Bosnia and Herzegovina). The Russian Federation and the Ukraine, however, are largely populated countries that are providing Internet access in less than 20% of research and public libraries, and yet have a population of nearly 200 million between them. Obviously there is a long way to go before access reaches adequate levels in these countries. The countries of Northern and Western Europe lead the way on the continent, with 17 out of 18 countries providing access in 81-100% of public and research libraries. Equally high levels of research library Internet access can also be found in the Czech Republic, Poland, Croatia and Slovenia. The countries of Eastern Europe and the former Soviet Union are lagging behind the rest of Europe somewhat, but there are encouraging signs for all in the research libraries sector.

Across Europe, the countries with high levels of Internet users per capita are the countries with the best Internet provision in libraries. All countries with over 50% of the population using the Internet are able to offer the highest levels of provision in both public and research libraries – with the exception of Germany, who can only offer access to the Internet in 61-80% of its public libraries. This is interesting and, in contrast, the worst performers on the continent such as the Ukraine and Russia have significantly lower Internet users per capita. Other countries, however, with good levels of Internet use, such as France and Italy, are as yet unable to offer access in as many public and research libraries as they might be expected to. It is difficult to draw exact conclusions from these findings because of the differences in library systems within each country, but it might be suggested – consistent with the analysis of low Internet

user populations in African countries mirroring low provision of access in libraries – that generally in Europe the countries with the greatest levels of Internet use see this reflected in library Internet provision.

Latin America and the Caribbean

14 countries responded to Question 1 from the Latin America and the Caribbean region, although Costa Rica did not provide an indication of access in research libraries and Nicaragua gave no results for public library access. The results are outlined in Figure 11 below:



* No reply from Nicaragua

** No reply from Costa Rica

Figure 11: Extent of Internet access in public and research libraries – Latin America and the Caribbean

Table 8 takes these responses and places them against Internet user figures for the appropriate countries in order to aid comparison:

	Population	Internet Users	% of Population using the Internet	% of Public Libraries offering Internet Access	% of Research Libraries offering Internet Access
Caribbean					
Aruba	70,844	24,000	33.88	81-100%	81-100%
Netherlands Antilles	216,226	2,000	0.92	81-100%	41-60%
Trinidad and Tobago	1,100,000	120,000	10.91	Less than 20%	61-80%
Central America					
Belize	266,440	18,000	6.76	Less than 20%	Less than 20%
Costa Rica	3,890,000	384,000	9.87	Less then 20%	No Answer
Guatemala	13,900,000	200,000	1.44	Less than 20%	Less than 20%
Mexico	104,900,000	11,130,000	10.61	Less than 20%	81-100%
Nicaragua	5,120,000	20,000	0.39	No Answer	81-100%
Panama	2,960,000	45,000	1.52	Less than 20%	Less than 20%
South America					
Bolivia	8,850,000	78,000	0.91	Less than 20%	Less than 20%
Chile	15,660,000	5,240,000	33.46	81-100%	81-100%
Colombia	41,660,000	2,530,000	6.07	21-40%	81-100%
Uruguay	3,410,000	690,000	20.23	Less than 20%	61-80%
Venezuela	24,650,000	3,040,000	12.33	21-40%	41-60%

Table 8: Library Internet access and overall Internet use – Latin America and the Caribbean

The results for public library access in this region are polarised, with over half the respondents providing very low levels of access but almost a quarter providing access in 81-100% of public libraries. Five out of the six Central American respondents report the lowest levels of public libraries offering Internet access with the sixth respondent – Nicaragua – failing to reply correctly to this question. The best performing countries in the region are two small Caribbean islands – St Maarten in the Netherlands Antilles and Aruba – and Chile in South America which has benefited from foreign investment in its libraries to provide a superb service. There is less variety in the public library responses for this region than either Asia or Africa in that there are only two countries – Columbia and Venezuela – who fall between the two poles of the lowest or highest levels of indicated provision. Both of these countries indicate that between 21-40% of public libraries are providing Internet access which means that there is undoubtedly a gap between the more advanced Internet countries in the region and the under-developed.

Access in research libraries in the region, on the other hand, is generally good, with the majority of respondents able to provide access in over 61% of their libraries and five countries providing access in 81-100%. Aruba and Chile are proving access at the highest level in both public and research libraries, although there are four countries

(Belize, Bolivia, Guatemala and Panama) that have Internet access at levels of less than 20% in both their research and public libraries. Research library Internet provision improves greatly in the Central American region in that there appears to be high levels in Mexico and Nicaragua but the interesting thing about the responses for this region is that it appears to be all or nothing in the case of indicating access – of 12 responses regarding public and research access eight indicate no access, two are incorrect replies and two are levels of access marked at 81-100%. This polarisation is mirrored for the research libraries of the continental region as a whole, although it is less pronounced than in public libraries and the Netherlands Antilles, Trinidad and Tobago, Uruguay and Venezuela display middling levels of access provision.

Looking at overall Internet users for the region, and any connection with library Internet access provision, Chile is the country that stands out, probably as a result of the investment in the country's telecommunications infrastructure over recent years (Bill and Melinda Gates Foundation, 2004c). It has the second highest per capita Internet use of the respondents (with a population of over 15 million people), and the other country with the highest per capita use, Aruba, is also able to provide the highest level of provision in both public and research libraries. Both Aruba and Chile have about a third of their populations using the Internet and the other countries in the region are yet to match these levels. 20 percent of the population of Uruguay, for example, have used the Internet but public library access is very low and research library access is not at the highest level. The size and type of library systems in each country undoubtedly plays a part in analysing this region as chains of islands and dispersed populations in the Caribbean offer a different backdrop to library access than in a country such as Mexico. This might explain how the Netherlands Antilles, despite its low Internet use per capita, has a high level of access and how Mexico, despite 10% of the population being able to use the Internet, is currently unable to provide Internet access in more than 20 percent of its public library system. However much it might be tried it is still difficult to draw definite connections between user percentages and library provision, although this is something that might be drawn out in further research.

Northern America

Northern America is one of the easiest regions to discuss in this section, for there are only two countries to consider:

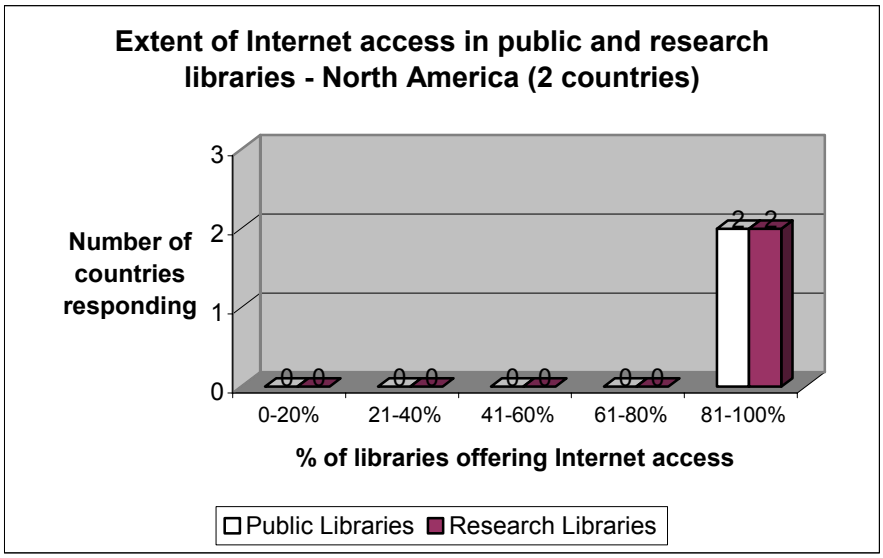


Figure 12: Extent of Internet access in public and research libraries – Northern America

Table 9 takes these responses and places them against Internet user figures for the appropriate countries in order to aid comparison:

	Population	Internet Users	% of Population using the Internet	% of Public Libraries offering Internet Access	% of Research Libraries offering Internet Access
Northern America					
Canada	32,200,000	20,450,000	63.51	81-100%	81-100%
United States	290,000,000	185,900,000	64.03	81-100%	81-100%

Table 9: Library Internet access and overall Internet use – Northern America

Both the United States and Canada are able to offer Internet access in 81-100% of both public and research libraries, perhaps unsurprising in the region that could arguably be called the home of the Internet. According to the UN Population Prospects Database, there are only 5 countries in the Northern American region (the US and Canada plus Bermuda, Greenland and Saint-Pierre-et-Miquelon) and questionnaire responses from these countries may have shed more light on the state of libraries in the region. Canada and the US, however, show very high levels of Internet use per capita which is reflected in the extent of access available in the public and research libraries of the two countries.

Oceania

There were five replies from Oceania to Question 1. The results are polarized, and are displayed in Figure 13 below:

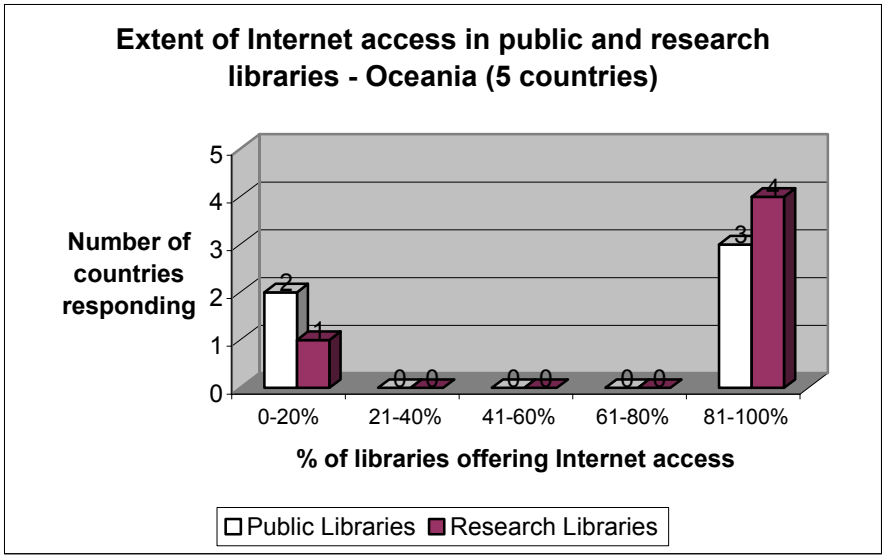


Figure 13: Extent of Internet access in public and research libraries – Oceania

Table 10 takes these responses and places them against Internet user figures for the appropriate countries in order to aid comparison:

	Population	Internet Users	% of Population using the Internet	% of Public Libraries offering Internet Access	% of Research Libraries offering Internet Access
Australia and New Zealand					
Australia	19,730,000	13,050,000	66.14	81-100%	81-100%
New Zealand	3,950,000	2,340,000	59.24	81-100%	81-100%
Melanesia					
Fiji	856,300	15,000	1.75	Less than 20%	81-100%
New Caledonia	210,798	24,000	11.39	Less than 20%	Less than 20%
Micronesia					
Guam	163,941	5,000	3.05	81-100%	81-100%

Table 10: Library Internet access and overall Internet use - Oceania

Australia and New Zealand are the largest countries represented from this region, and both of them, along with the smaller Guam (a territory of the United States) offer Internet access in 81-100% of public and research libraries. Australia and New Zealand are now mature countries as far as Internet use is concerned, with well over half of the countries' populations using the Internet. The other countries that took part in the

survey, Fiji and New Caledonia, are far smaller island nations although this has not stopped Fiji from providing access in 81-100% of research libraries. New Caledonia evidently has shortcomings in access at this point in time and can provide only the lowest levels of access in both public and research libraries. In spite of this over ten percent of the population are using the Internet, more than in Fiji or Guam. The exact nature of the library facilities in these smaller island nations, including the extent of the education system, undoubtedly has an impact on access in libraries.

Summarised findings regarding Question 1

Before summarising the findings from Question 1 it must be noted, when looking at all of these percentages, that respondents have been asked to give estimates of the extent of Internet access in their library systems – and that no information relating to the numbers of libraries in those systems accompanies these estimates. This means, for example, that countries with Internet access in 81-100% of their public libraries could theoretically have a very small number of library service points, making the results potentially problematic. A participant at the roundtable discussion in Berlin mentioned the example of Nigeria – a country with over 115 million inhabitants and a public library system that is virtually non-existent[19]. It is entirely possible that this situation is replicated in the library systems of the respondents from Africa and therefore any interpretations of the results must bear this in mind. Future surveys may be able to investigate this situation in more depth. Putting this problem aside for a moment, Tables 11 and 12 (overleaf and on page 145) illustrate which categories of access the responding countries fall into.

[19] This remark is backed up by the findings of a FAIFE report on Nigeria (IFLA/FAIFE, 1999)

% of public libraries offering Internet access	Region and Country
Less than 20 %: (39)	**Africa:** Angola, Benin, Botswana, Cape Verde, Chad, Ethiopia, Gambia, Niger, Uganda, Zimbabwe **Asia:** Armenia, Azerbaijan, Cyprus, Iran, Japan, Georgia, Mongolia, Nepal, Philippines, Uzbekistan **Europe:** Belarus, Bosnia/Herzegovina, Bulgaria, Latvia, Macedonia, Moldova, Poland, Russian Federation, Serbia and Montenegro, Ukraine **L.America/Caribbean:** Belize, Bolivia, Costa Rica, Guatemala, Mexico, Panama, Uruguay **Oceania:** Fiji, New Caledonia
21-40%: (14)	**Africa:** Egypt, Ghana, Namibia, South Africa, Swaziland **Asia:** India, Macao **Europe:** Croatia, Czech Republic, France, Lithuania **L.America/Caribbean:** Columbia, Trinidad and Tobago, Venezuela
41-60%: (10)	**Africa:** Kenya **Asia:** China, Kuwait, Lebanon **Europe:** Italy, Liechtenstein, Malta, Slovak Republic, Slovenia, Switzerland
61-80%: (5)	**Asia:** Thailand **Europe:** Andorra, Austria, Estonia, Germany
81-100%: (19)	**Asia:** Hong Kong, Singapore **Europe:** Belgium (Flanders), Denmark, Finland, Iceland, Netherlands, Ireland, Norway, Sweden, United Kingdom **L.America/Caribbean:** Aruba, Chile, Netherlands Antilles **Northern America:** Canada, United States **Oceania:** Australia, Guam, New Zealand

Table 11: Distribution of countries in categories of Internet access - Public libraries

The results from Question 1 of the survey show that, broadly speaking, the countries offering the highest levels of Internet access in public libraries can be found in Europe, Oceania and Northern America. There are notable inclusions from every region in the two highest levels of access (61-80% and 81-100%) with the exception of Africa. Indeed, most of the African respondents offer very low levels of public library access, and can all be found in the lowest levels of access (21-40% and Less than 20%) with the sole exception of Kenya.

Drawing conclusions on a global scale is more difficult than looking for patterns in the regional findings. Perhaps the most definite thing that can be said about the results is that Africa is the least able region to offer reasonable levels of Internet access in its public libraries. Apart from this, it is possible to see that all the other regions – with the exception of the narrow region of Northern America – have countries with very high levels and very low levels of access. Europe, for example, has countries spread throughout the five levels of access, as does Asia.

Switching to the issue of research libraries, the pattern of diverse levels of access within regions pattern is continued, as illustrated in Table 12 below:

Percentage of research libraries offering Internet access	Region and Country
Less than 20 %: (21)	**Africa:** Angola, Benin, Cape Verde, Chad, Niger, Zimbabwe **Asia:** Azerbaijan, Cyprus, Georgia, Mongolia, Philippines **Europe:** Andorra, Bosnia and Herzegovina, Holy See, Russian Federation, Ukraine **L.America/Caribbean:** Belize, Bolivia, Guatemala, Panama **Oceania:** New Caledonia
21-40%: (8)	**Africa:** Egypt, Gambia, Swaziland, Uganda **Asia:** Armenia, Iran **Europe:** Bulgaria, F.Y.R. Macedonia
41-60%: (9)	**Africa:** Ethiopia, Namibia **Asia:** Macao, Uzbekistan **Europe:** Malta, Moldova, Serbia and Montenegro **L.America/Caribbean:** Netherlands Antilles, Venezuela
61-80%: (9)	**Africa:** Botswana, Ghana, Kenya **Europe:** Belarus, France, Italy, Slovakia, **L.America/Caribbean:** Trinidad and Tobago, Uruguay
81-100%: (41)	**Africa:** South Africa **Asia:** China, Hong Kong, India, Japan, Kuwait, Lebanon, Nepal, Singapore, Thailand **Europe:** Austria, Belgium, Croatia, Czech Republic, Denmark, Estonia, Finland, Germany, Iceland, Ireland, Latvia, Liechtenstein, Lithuania, Netherlands, Norway, Poland, Slovenia, Sweden, Switzerland, United Kingdom **L.America/Caribbean:** Aruba, Chile, Columbia, Nicaragua, Mexico **Northern America:** Canada, United States **Oceania:** Australia, Fiji, Guam, New Zealand

Table 12: Distribution of countries in categories of Internet access – Research libraries

What is interesting when comparing research library access on a global scale with the public library results is that the numbers in each category are almost inverted. It is possible to see slightly more countries (40) offering access in research libraries at the top level than countries offering public access at the lowest level (39) and this time there is one representative from Africa (South Africa) offering top levels of access. If the public libraries results can be said to be skewed towards lower levels of access on a global scale (i.e. 53 out of 86 countries are providing access on the lowest two levels) then results for the research libraries show almost the opposite – 49 out of 87 countries are providing access at the top two levels. It would appear that in terms of research libraries countries from any region have a chance of providing a good extent of Internet access.

Despite more of a level playing field in this area it is still clear from these results that great differences exist around the world, and within regions of the world, between those nations able to provide good levels of Internet access in libraries and those unable to. This is the case for all regions with perhaps the exception of Northern America. Of course, the results from Question 1 are purely based around the provision of material access and as such say nothing about the experiences of Internet users in the library. Regardless of this however, it is possible to identify this situation conceptually, using a term that has become increasingly common in technology debates in the last ten years: the 'Digital Divide'.

The Digital Divide

As the results from Question 1 of the global survey proved, there exist great differences in provision of Internet access in libraries around the world. Addressing differences in access to ICTs (in this case the Internet) has become an area of policy concern for governments and NGOs around the world since the Internet moved into the mainstream of society in the middle of the 1990s. The term 'Digital Divide' is often used to describe these differences, although a deeper examination of the term shows the concept to be a broad one which encompasses the issues of access and use discussed above.

Bridges.org (2003c) define the digital divide simply as "the wide division between those who have access to ICT and are using it effectively, and those who do not". This is a definition that looks at material access to computers and connectivity, and the use of digital skills to retrieve information. Bridges.org state that the divide is actually a by-product of advances in technology, for "when computers are introduced in a country, they exacerbate inequality" (Bridges.org, 2003a). The reason for this is that elite proportions of a given society will be the first to access new technologies and the first to take advantage of them, reinforcing or even extending any existing divisions in society between haves and have-nots.

This can be seen if the diffusion of new technologies into society is looked at. Norris (2001) points out that computers took around 50 years to diffuse into mainstream society, distributed computing networks around 30 years and the World Wide Web about 11 years. The 'S-curve' of diffusion developed by Foster (1986), is used to show how a technology enters the mainstream of society, for the adoption of many successful innovations commonly follows an S (Sigmoid) shaped pattern, as illustrated in Figure 14 below:

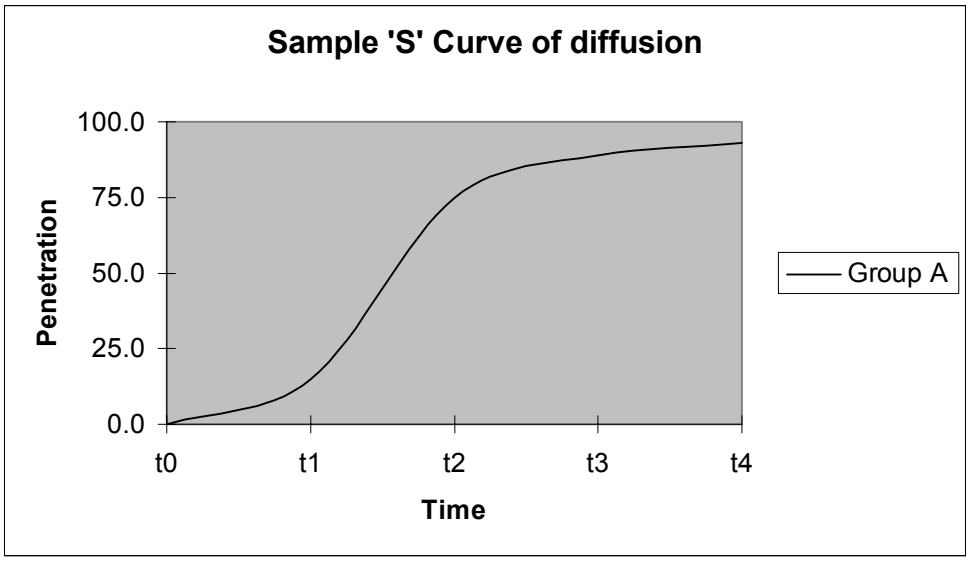


Figure 14: Sample 'S' curve of diffusion

A slow rate of initial adoption is usually seen during which early adopters of technology are often found to take advantage of their situation. Following this is a substantial surge that peaks when penetration levels reach saturation point. Demand subsequently slows, costs fall bringing new users on board and the innovation moves into the mainstream (Rogers, 1962).

There are two views of the S-curve (Norris, 2001). If this is applied to the Internet, optimists predict that s-curves will follow a normalisation pattern as costs fall, technology simplifies and the Internet begins to provide mass entertainment that will provide the boost it needs to become a mainstream technology (Figure 15). After an initial period of widening, social inequalities and gaps will eventually close. Alternatively, pessimists suggest that s-curves will follow a stratification model where gaps remain between user groups and those in society already networked by traditional ICTs will maintain an edge in the digital economy (Figure 16).

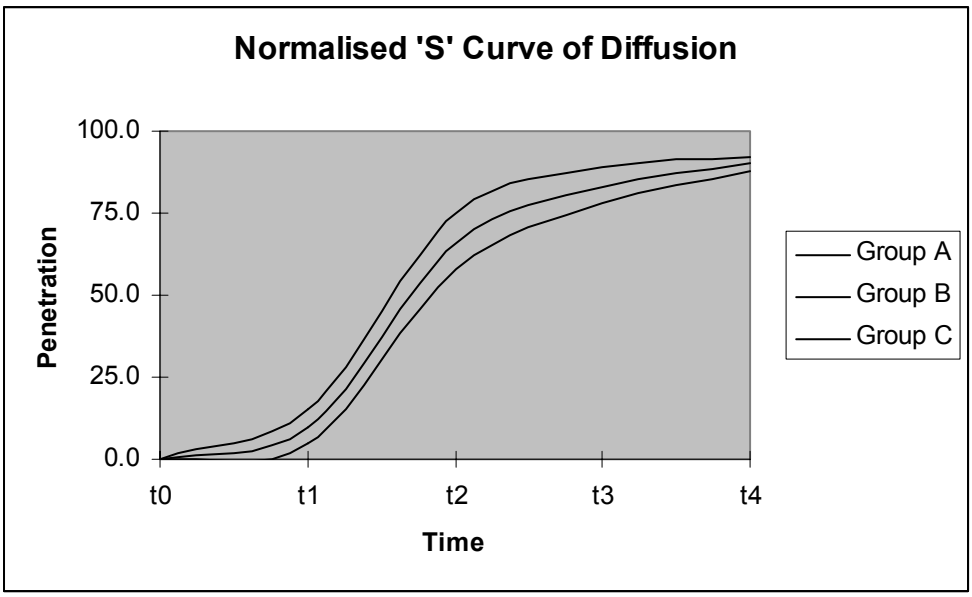


Figure 15: Normalised 'S' curve of diffusion

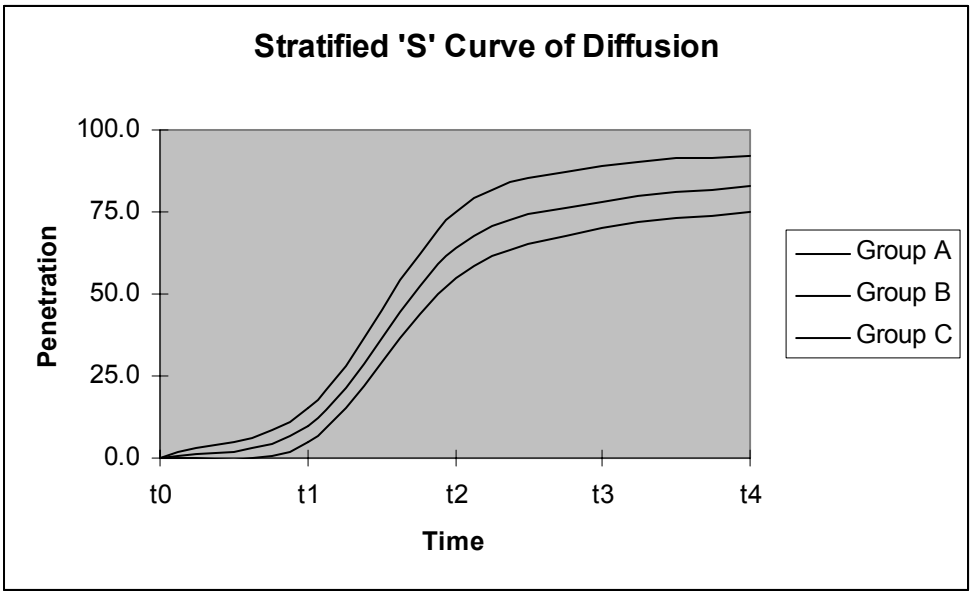


Figure 16: Stratified 'S' curve of diffusion

Whether or not differing uses of the new technology by those with high and low levels of education, for example will, exacerbate differences within (and between) countries to create a knowledge gap similar to that described by Tichenor et al is not yet known[20]. S-curves for technology are different for each country and it is difficult to generalise on a global scale based on, for example, the spread of the Internet in the United States. It is unclear whether the Internet will diffuse into society to the extent that television has, or whether it will see levels of access similar to cable technology. All that can be said at the moment is that levels of access within and between countries are different all around the world.

Levels of access are a key contributor to the digital divide. However, the digital divide has been the subject of much study in recent years, and a much broader conception of the idea has come about as a result. Kling (1998), for example, found the divide to be marked by differences in technical access (physical availability of the technology) and social access (professional knowledge and technical skills necessary to benefit from information technologies). DiMaggio and Hargittai (2001) added further dimensions, highlighting technical means (software, hardware, connectivity quality); autonomy of use (location of access, freedom to use the medium for one's preferred activities); use patterns (types of uses of the Internet); social support networks (availability of others one can turn to for assistance with use, size of networks to encourage use) and skill (one's ability to use the medium effectively). Hargittai (2002) expanded the examination of skills with her conception of a 'second level digital divide'. This divide concerns differences in how people use the Internet and how users get maximum benefit from the technology. More recently, Davison and Cotton (2003) have introduced the idea of connection divides, arguing that broadband users experience the Internet differently, with the type of Internet connection more likely to influence who spends

[20] Tichenor suggests that "as the diffusion of mass media information into a social system increases, segments of the population with a higher socio-economic status tend to acquire this information at a faster rate than the lower status segments" (Van Dijk and Hacker, 2003, p325)

more time online. With the advent of rich media content, video streaming services and 'always on' connections this is an important consideration that differentiates use for individuals (Byrne, 2003b).

The above authors have looked at the factors that influence Internet access within a given country. Norris (2001) provides a conception of the digital divide on wider scale, outlining three types of divide – the global, the social and the democratic - that must be examined for a more complete picture. The global divide exists between developed and developing countries within the world and can easily be seen in results from Question 1 comparing Internet access in libraries in Northern America and Africa for example. The social divide exists within each country between the information rich and information poor, and it corresponds to similar to the divisions in society mentioned by Bridges.org above. The democratic divide, on the other hand, is the gap between those who do and do not use Internet resources to engage, mobilize and participate in public life (Norris, 2001). This type of divide is similar to the differences in use that are described by Van Dijk and Hacker (2003) and refers to how the Internet will be used by any given population – will users be 'interacting' or 'interacted'? (Castells, 2000a)

Other authors warn against the use of a phrase such as digital divide on the grounds that the idea of information 'haves' and 'have-nots' is too binary (Warschauer, 2002). The digital divide implies a bipolar social split but in reality a binary division between haves and have-not does not exist, and instead there is a gradation based on different degrees of access to ICTs. Warschauer believes the term digital divide implies a chain of causality – that a lack of access impairs life chances. With regards to the concept of technological determinism discussed in Chapter One, Warschauer points out that technology and society are intertwined and co-constitutive, in a complex relationship that makes an assumption of causality problematic. Digital divides are about 'relative' differences between categories of people (Van Dijk and Hacker, 2003). Solutions to the problem should focus on transformation, not technology, and should look at furthering processes of social inclusion not 'overcoming the digital divide'.

This is wise advice, for it encourages a broad conception of the problems facing libraries as providers of Internet access. However, Warschauer wants to ditch the term 'Digital Divide' but doing so may not help at a time when the United Nations, through its World Summit on the Information Society (WSIS), is choosing to focus policy initiatives on the gap between those who have access to technology and can use it effectively and those who do not. The term 'Digital Divide' will exist in policy parlance for a while yet.

A route to basic access for libraries

However, this does not mean that the contributing factors to unequal access to the Internet should be narrowed. Instead an acknowledgement of the wide variety of factors that conspire to limit access to ICTs will enable libraries to focus on specific areas of policy at a time, whether this involves provision of material access, or digital skills. By combining the conceptions of 'access' and 'use' described above, it is possible to outline a definition of the digital divide that forms the first – and most fundamental – barrier to accessing the Internet in libraries. The digital divide is not only the gap between those who have Internet access and know how to use it and those who do not,

but it also includes differences in users' access to appropriate computers and connectivity, skill level, access to relevant content, connection speed and types of use. This divide is present within all regions of the world, as evidenced by the findings of Question 1, and exists, to a degree, within every country. To overcome this barrier libraries must be aware of the following 'route to access' and focus on the areas where they are best able to influence outcomes:

- **Provision of electricity and telecommunications infrastructure**
  Without electricity and a telecommunications infrastructure Internet use will be limited in a country's libraries. It is possible to work around these problems to an extent (Delio, 2003; Wired, 2003) but access to electricity networks and a telecommunications grid must be a priority for libraries seeking to provide Internet access.

- **Provision of suitable premises**
  Should electricity and a telecommunications network be available in a country then the next priority for Internet use is somewhere suitable to gain access. Schement argues that access to communications services on the Internet offers "benefits on a broad, cultural sense" (Schement, 2003, p120) and that libraries, as providers of access to cultural resources via the Internet, encourage a sense of shared values and mutual responsibility that comes from social interaction. Essentially libraries that provide Internet access have the chance to become shared intermediaries for people, perhaps even a counterweight to the forces that Sunstein (2002) worries are removing shared experiences from people's lives. This is worth noting but the broadness of the problem considered means that the traditional image of a library building may be slightly misleading when considering this situation on a global scale. Provision of an appropriate environment to experience Internet access is essential, for an awareness of local needs is crucial if technology use is to be improved in libraries in developing countries. This might be technology provision in traditional library buildings, or through wireless technology in mobile libraries (PULMANweb, 2004*)*.

- **Provision of appropriate computers and connectivity**
  This is consistent with the concept of 'material access' provided by Van Dijk and Hacker (2003), and incorporating the connection divides of Davison and Cotton (2003), Kling's (1998) 'technical access' and DiMaggio and Hargittai's (2001) 'technical means'. Areas of focus therefore include access to current working hardware, software and Internet connection. Technology must be appropriate for local needs as well – Internet access does not always arrive via a desktop computer. Of course, this factor is dependent on electricity and telecommunications infrastructure within any given area. Problems in these two areas will lead to an unreliable service (with specific urban/rural distinctions) and a lack of capacity (with a resulting bandwidth crisis). Technology must also be affordable and sustainable in terms of funding, meaning that programs focused on Internet access must build in technical support and a phased replacement of technology as it ages

- **Provision of training and user skills**
  Computers may give access to the Internet but skills give access to Internet-accessible information resources. The emphasis on computer skills has been

seen in the contributions of Van Dijk and Hacker (2003), Bridges.org (2003b) and Hargittai (2002) amongst others. It is clear to these authors that the debate on the digital divide must be expanded to include how users access information on the Internet and what they are getting out of it. When interviewed, Sheila Corrall, Director of Academic Services at Southampton University in England[21], added nuance to this debate by expressing the opinion that a distinction must be drawn between basic computer use skills and information-searching skills – thinking that was also echoed in an IFLA Internet Manifesto workshop in Uganda. This means users must know how to use the relevant software and hardware, along with basic search strategies to access relevant information. Librarians may best facilitate access to information resources on the Internet by leading by example, providing help to users where wanted and by formal provision of training for library users who need it. Skills will be dependent on the education, training and language capabilities of users, but from the point of view of libraries the first step to affecting this situation is the training of library staff themselves so that skills can be passed on to users accordingly. Vanessa Hayward[22], from in interview, talked about how the complexity of some online systems requires training for even experienced library staff.

- **Provision of appropriate content**
  Once these areas have been tackled the issues of content can be addressed. 'Usage access' was used by Van Dijk and Hacker (2003) to explain differentials in Internet use, and the way the technology is used – and the divisions in society as a result – is touched upon by Bridges.org (2003b), Norris (2001) and Castells (2000a). If some sections of global society are able to take more advantage of the Internet as a result of better, more relevant, content then others will be left behind. If some users are only able to access entertainment, non-relevant information or a limited portion of the Internet, then they may experience less benefit from the technology – or even turn their backs on it altogether. Undoubtedly content in local languages is a priority in this area, for "without [appropriate] language it may be impossible to adequately convey concepts within their cultural context" (Byrne, 2003b, p417). To aid in the consumption of content, libraries must provide access to relevant resources that are useful to their users. This can be done through a continuation of traditional librarianship in the digital age – identifying the correct online resources for bookmarking or subscription is essential.

- **Awareness of access inequalities**
  The first five steps on the route to access have concentrated on provision – both in terms of infrastructure and in skills and content. Van Dijk and Hacker's (2003) concept of mental access, along with the socio-cultural factors influencing access differentials mentioned by Bridges.org (2003b) and Norris (2001), makes up not the final step on the route to access, but instead an overall philosophy for libraries as providers of access to the Internet. Social stratification within countries regarding Internet use creates access differentials that can be seen when comparisons are made across such categories as age,

[21] Sheila Corrall is now Professor of Librarianship and Information Management at the University of Sheffield, England
[22] Vanessa Hayward is Keeper of the Middle Temple Law Library in London

> disability, education, gender, geographic location, income or race. Which particular citizens are able to take advantage of Internet access depends on these issues, for they determine a user's personal resources (time, money, skills) and also their motivation for using the Internet. Any effort that libraries make towards providing Internet access to users – at any stage of the route outlined above – must be aware of the more marginalized sections of a potential user group and undertake access programs accordingly.

Conclusion

Six steps towards improving Internet access in libraries may seem a little simple in light of the complex nature of the issues being discussed. Even if the saturation of Internet technology does close gaps in society, especially in terms of material access, libraries must still be aware that older mass media do not disappear overnight. Alongside this, computers outdate very quickly and new equipment continually has to be purchased. 'Free' Internet access or computer hardware is not really free once monthly fees, long-term service agreements and low-quality service is taken into account. It is also important to remain aware, as Schiller (1996) points out, information inequality only adds another layer to pre-existing inequalities of income, education, occupation or social class, ethnicity and gender. Both Van Dijk and Hacker (2003) and Bridges.org (2003a) suggest that new media are trend amplifiers that reinforce existing equalities and inequalities already present, growing or declining in society. Solving the problems of Internet access will therefore be a huge problem for libraries on a global scale due to existing differences in access to resources that exist between the countries of the international library community. As can be seen in the results of Question 1, Internet access in libraries varies to a great degree around the world. The digital divide is "complex in the sense that, for example, access is a multifaceted concept with many types of problems, and it is dynamic in following the trends of evolving technology and its uses" (Van Dijk and Hacker, 2003, p323). There is unlikely to be an equalising of Internet access around the world in the near future, for all of the factors influencing access outlined above affect every single country to greater or lesser degrees. Digital divide policy perspectives should therefore be linked to all types of access, and governments, civil societies and markets all have a part to play in solutions – along with libraries. There is no one-size-fits all solution here, although raising awareness of the complex concept of access and the problems that come with it is likely to lead to Internet access programs within libraries that are better planned and more nuanced in their efforts to open up the Internet to all sections of library users.

Chapter 5 - Filtering, Blocking and the Censorship of Information

Introduction

This chapter examines how freedom of access to information on the Internet may be interrupted as a result of filtering and blocking technologies. It argues that the filtering and blocking of Internet-accessible information is a direct obstacle to freedom of access to information and as such is an area of concern for the international library community. The impetus for filtering information is discussed, along with how filtering technologies work and the drawbacks of using them. The potential impact of filtering in libraries is looked at, and the Children's Internet Protection Act (CIPA) in the United States is detailed to provide an example of how filtering Internet access can affect libraries as providers of information. The chapter aims to show that while calls for filtering information do come from family units and those representing the interests of children, a great responsibility for filtering lies with the nation state. Libraries, especially public libraries, are affected by national information policy and are required to conform to resulting legal frameworks. The chapter provides an overview of filtering around the world to show the reasons behind the creation of such frameworks, and argues that the ideology of a nation state directs the extent to which freedom of access to information exists online. Finally, to illustrate how the international library community is affected by filtering, the results of a survey on filtering in libraries are presented and analysed.

Filtering, blocking and the censorship of information

The digital divide and access inequalities affect basic access to computers and the way users experience the Internet. As such they are a most fundamental barrier to accessing Internet-accessible information resources. There are, however, further factors present in many countries around the world that exacerbate the problems of the digital divide and increase the difficulties of freely accessing information resources on the Internet. Chapter Three concentrated on the concepts of freedom of access to information and freedom of expression, and how they complement each other to resemble two sides of the same coin. Freedom of access to information is the right of citizens to not only express any views, but also to have access to the fullest range of views expressed. On the Internet, this means that once basic access to computers is gained, along with an ability to use the Internet, accessing information should be as free from controls of any sort as possible. Users should be able to interact with Internet-accessible information resources without experiencing obstacles that causes the information seeking process to become impaired.

Librarians' 'duty of care' with regards to minors and those who do not wish to be exposed to certain types of materials is also discussed in Chapter Three above. This concept can also be incorporated by governments of nation states who are responsible for policing the Internet through information policy. Consequently, certain types of material on the Internet, such as child pornography, can be outlawed and steps taken to ensure that those providing and accessing such information are dealt with according to law. The types of material that are considered harmful differ around the world according to cultural and political outlook however, and what is acceptable in one country may be frowned upon in another, or even actively censored to protect public morality. The

availability of information resources on democracy causes European governments no problems, for example, while the Chinese government is liable to enforce prison terms for the posting of such information online (RSF, 2004a). In their efforts to regulate the flow of information within their borders, the governments of nation states have a variety of methods available that will place limits on the type of information that can and cannot be accessed on the Internet. The extent to which these methods are used (and succeed) depends on the type of government, and the type of information environment they wish to create.

This chaper provides another answer to the final research question outlined in the introduction. Along with Chapter Six, it seeks to outline how the actions of nation states are able to create barriers to accessing information resources on the Internet. This chapter is very much concerned with information resources available via the World Wide Web, and how these materials can be censorsed by governments worried about the consequences of freedom of access to information. Specifically, it looks at how the use of filtering and blocking techniques can create a direct block on freedom of access to information on the Internet.

Why filter?

Freedom of access to information on the Internet can be interrupted, or even prevented, through the use of filtering and blocking software. The amount of information available on the Internet is vast, dynamic and includes content of every description, in a multitude of languages and formats. This content is available, in theory, to everybody with an Internet connection and the wherewithal to navigate the Internet. While this immense repository of information goes some way to increasing access to information as a result of its very existence, the darker side of the Internet, marked by pornography, hate speech, violent materials and fringe ideologies, gives many groups in society cause to worry. It is felt that children are in danger from exposure to these types of harmful materials (Safeplace.net, 2001). Adults too may be distracted to the information available from their computers, lowering productivity and, in some workplace situations, endangering company security (The Register, 2003b). Revolutionaries of all types might be encouraged up by the freedom of communication and information exchange online. Ideas and information that may have once been underground can be teased out and circulated among the like-minded all over the world. The shadowy areas of human knowledge are suddenly accessible at the click of a mouse.

In light of this, many members of society have taken steps to restrict access to certain types of Internet-accessible information. Filtering and blocking mechanisms are one such step – a technological means of placing a barrier between the Internet user and his desired information. There are situations where restrictions on Internet access can be appropriate. Parents use filtering software in the home to restrict the sites children can and cannot access via the Internet. Businesses filter Internet access at work to prevent employees from time wasting. Privately-owned access intermediaries, such as Internet cafes, filter access to prevent customers accessing material other users might find offensive. The appropriateness of filtering Internet-accessible information in these circumstances is dependent on the location of access – in private spaces where private individuals provide Internet access it is a private decision.

Filtering, however, also takes place on a wider scale, as the governments of nation states seek to protect national security, or the moral well-being of their citizens. In these conditions, filtering can be extended to areas of public Internet access such as libraries. The international nature of the Internet has led to concerns at a governmental level regarding information flow. Governments face a dilemma where they want to let through advantageous information while at the same time filtering out the communications they feel threaten or undermine national authority. Barlow (2002) believes that this conflict of interests is a result of the development of an international civic culture as the result of the Internet's globalisation of communications. All around the world there are states where government opposition to such a culture stems from a need to maintain existing power structures and stifle dissent. This leads to a number of notable examples of Internet censorship on a national scale.

How do filters work?

Internet content filtering refers to techniques by which control is imposed on access to information on the Internet. Simply put, filtering software prevents users from accessing certain types of information on the Internet. Most filtering software and blocking software emphasises restrictions on access to the World Wide Web, interceding between the user and his connection to the Internet (Edelman, 2001). The features of content filters are briefly summarised in Table 13 overleaf:

Filter types	• The **standalone filter** - an all-in-one package supplied by a single vendor. A standalone filter makes all filtering decisions; although there may be a facility to let some users override decisions or ban more sites • The **protocol-based filter** - provides alternative types of rating systems (e.g. from the American Civil Liberties Union or the Family Research Council) and lets users choose between them
Filtering mechanisms	• A **rating** mechanism that makes value judgements categorising a web site's content • A **filtering** mechanism which grants access to a web site only after comparison with lists of allowed/disallowed web sites or words
Filtering techniques	• **Blocking** - uses particular router combinations to deny access to specific Internet Protocol (IP) addresses or services that run on specific port numbers • Blocking may take place as a result of **inclusion** or **exclusion**. With an inclusion filtering approach, web sites have to be on a 'whitelist' of sites that users are allowed to visit • This is a limited approach compared with exclusion filtering, where users cannot access pages or domains on a 'blacklist' • According to OpenNet (2004), blacklisting is the most efficient and common approach to filtering • **Content analysis** - the controlling of information based on the analysis of specific keywords within web pages or URLs. • 'Parsing mechanisms' sift through these keywords and block access accordingly • Web sites with forbidden keywords or other specified criteria are blocked from the user

Table 13: Features of Internet filters

Most filtering software packages are capable of inclusion filtering, exclusion filtering and content analysis in some combination. However, the effectiveness of the software depends heavily on the accuracy and categorisation of web sites, a process that is split unevenly between human and computer investigation. List-based blocking software relies on the development of lists of web sites for possible categorisation. These lists are compiled by filtering software companies by a variety of means. Lists of recently registered web sites are reviewed or links are followed from online directories. Alternatively, pages are requested from search engines related to specific keywords or lists of sites are bought or licensed from third parties. Log files and customer submissions may also be reviewed.

Automated systems examine the relevant lists of web pages and recommend inclusion in one or more categories of content decided by the company in question. Most filtering

companies focus on pornography, but different companies have different focuses[23]. Companies send out artificially intelligent web spiders across the Web to seek potentially inappropriate content and this information gets sent back to company employees to review, categorise and add to lists of blocked sites. In many instances human reviewers make the ultimate decision regarding how to categorise each page but human review of all sites is often impractical. A 'web site' can mean a single directory on a server (www.geocities.com/libraries) or an entire server that hosts content from many users (www.geocities.com). It can therefore be as small as a single page or a combination of pages, or it can be as large as a directory, a server or even a range of servers. Edelman (2001) reports that representatives from filtering firms have stated that humans would normally review only the front page of each site and occasionally a sampling of pages further in. Categorisation is therefore a difficult process due to the size and dynamism of the Internet and most content is not actually reviewed.

The content analysis technique takes a similar approach. This is the fastest growing area of content filtering according to OpenNet (2004), who liken it to censoring individual sentences (web pages) as opposed to entire books (domains). Content analysis uses string recognition software – web spiders that crawl web pages looking for occurrences of flagged words. Some firms are more contextual regarding these keywords e.g. Cyberpatrol looks at the 25 characters before and after a banned word in an attempt to assess context. Should a banned word be found the filtering software prevents the user from accessing the page.

Content rating

Content rating systems provide an alternative - and complement - to filtering programmes that utilise blacklists, whitelists and content analysis. The Platform for Internet Content Selection (PICS) is the best-known system and it was introduced by the World Wide Web Consortium (W3C) in 1995. PICS is an infrastructure that facilitates voluntary labelling and selection of Internet content, and it enables labels – metadata - to be associated with web pages. Consequently, it functions somewhat like a movie-rating system. Webmasters rate web sites in certain categories of content description (e.g. nudity, violence, sexual content etc.) and apply values in each category. This is done by an individual filling out a label generator form provided on a content rating organisation's web site or by a computer analysis of web site contents. Rating a web site acknowledges that some materials offered will not be appropriate for all audiences and labelling makes it easier for filtering software to block access appropriately. Once the rating form is completed an HTML label is generated for webmasters to incorporate into the code of their web site to describe the type of content that can be found on it. Users are able to employ content rating software to determine the types of material they wish to deny access to. When a user attempts to access a certain web site the settings are compared with the rating of the web site and if the ratings do not meet the user's requirements, access is denied.

[23] Cyberpatrol, for example, has categories of: Adult/Sexually Explicit; Chat; Criminal Skills; Drugs, Alcohol and Tobacco; Gambling; Glamour and Intimate Apparel; Hacking; Hate Speech; Multiple Category Service (web sites that host business and individuals' web pages i.e. GeoCities, earthlink.net, AOL); Remote Proxies; Sexual Education; Violence, Weapons. (http://www.cyberpatrol.com/product/cyberlists.aspx)

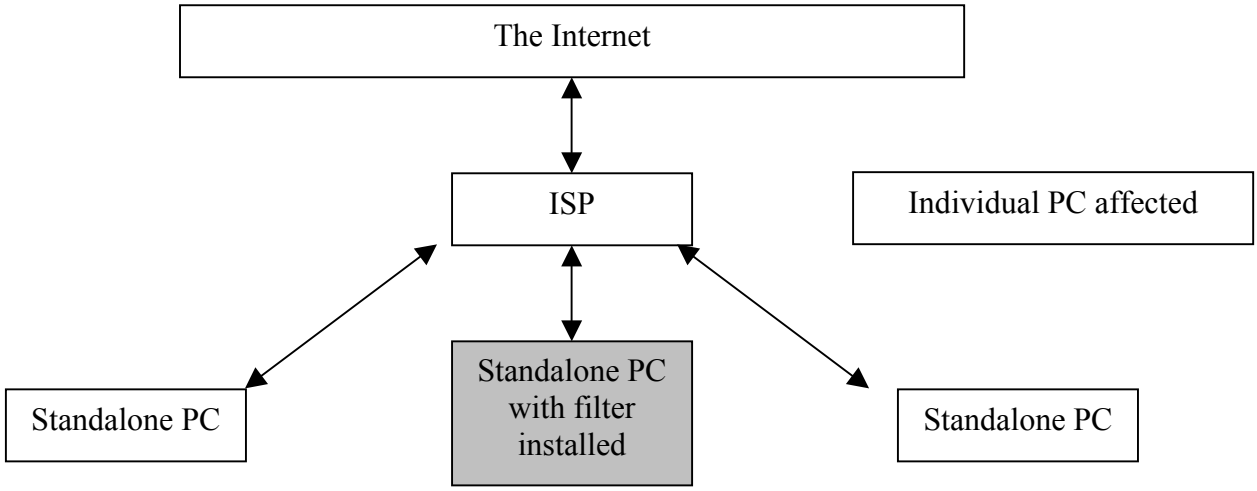
An alternative to self-rating is the use of third parties, or label bureaus, to rate web sites. Label bureaus do use humans to review sites, but the use of automated processes is more common. There are a number of rating services that provide labels for information and users of content rating systems are able to choose a service that best represents their point of view regarding what information should be available over the Internet. Such services might be provided by groups with specific missions, such as the Anti-Defamation League (Anti-Defamation League, 2002). When third party rating is used, labels are not normally embedded within the documents, but rather are distributed via label bureaus. Users request a web page and the content rating software takes this request to a label bureau which then responds with the PICS label.

Perhaps the most well known organisation involved in content rating is the Internet Content Rating Association (ICRA). ICRA was born out of the Recreation Software Advisory Council (RSAC), which was set up in the mid 1990s to provide a ratings scheme along the lines of film classification schemes for video games. The RSACi (Recreational Software Advisory Council on the Internet) system was originally integrated into Microsoft's Internet Explorer, MicroSystem's Cyber Patrol Software and Netscape Navigator. In 1999 ICRA took over and many big Internet companies have backed the system. By 2002, for example, America Online, MSN and Yahoo had tagged most of their web sites – over 90% - with ICRA labels. The technology is fully compatible with Microsoft's Internet Explorer browser but, despite major support from the private and public sector, it is doubtful to what extent the software is being used today (Reference - Interview with Phil Archer).

Levels of filtering

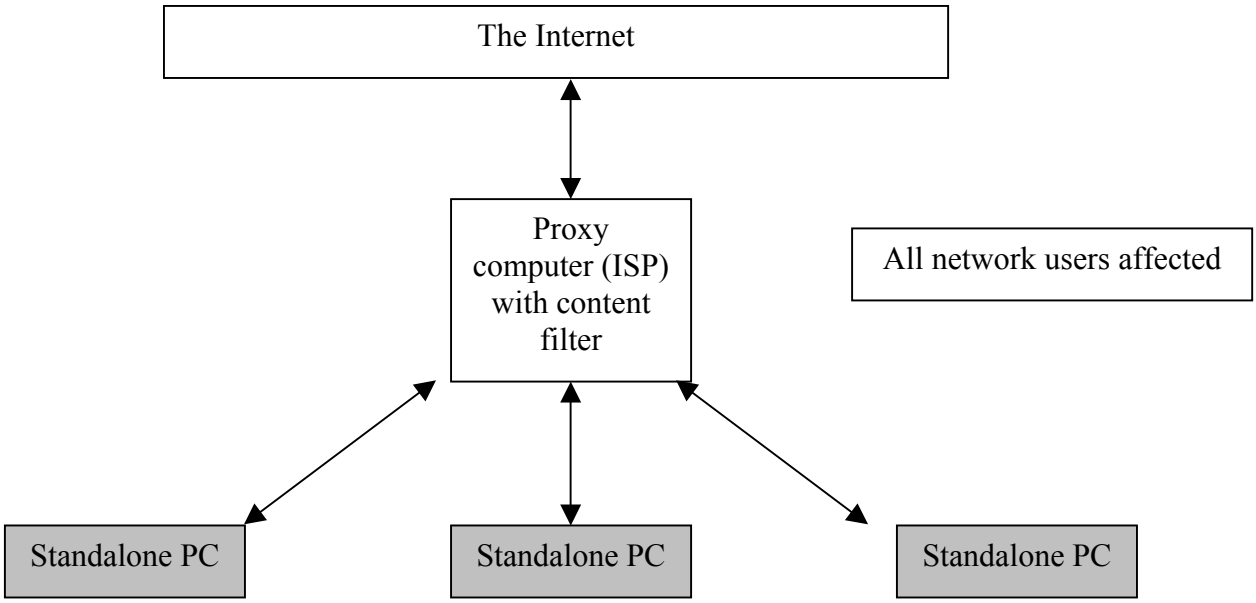
Both PICS-based systems and Internet content filtering software can work on a number of levels. Indeed, where a filter is employed within an information access and distribution chain makes a great deal of difference to access conditions for the user. Filtering mechanisms can be employed 'downstream' or 'upstream'. Downstream filtering is also known as client filtering. It is undertaken by individuals, often on home PCs. The PC owner buys a copy of a filtering software product for home use and the filter affects only those who use the PC it is installed on. This is illustrated in Figure 17 below. At this local level users are more likely to use commercially available software and the main market is parents. These standalone filters are customisable, with any of the three approaches outlined above being possible.

Figure 17: Downstream filtering



Upstream filtering, on the other hand, sees all incoming and outgoing information going via a proxy computer which sits at the top of a network (See Figure 18 below). All network users are affected. Access requests can be denied at this bottleneck and who defines the proxy rules is therefore very important. The proxy administrator's rules affect the information decisions of all network users and the sending of certain types of message/content can be forbidden. Upstream filtering is usually employed on large networks with high numbers of access points and many users. It occurs at two levels – the organisational and the national.

Figure 18: Upstream filtering



The organisational level ranges from clusters of networked PCs and local area networks to wide area networks. This includes business, schools and libraries. Filtering at an organisational level uses routers, firewalls or proxy servers. This 'server-based' filtering differs according to the size and need of an organisation, although the blacklist method of filtering is very popular (OpenNet, 2004). Proxy servers are used to monitor and filter requests (the proxy sits between the client and the external server) and they are configured to deny requests for blacklisted sites and log all user requests. They could also be configured to reduce the chances of users employing countermeasures to bypass content filtering.

National level filtering uses Internet backbone and gateway routers that can be configured to deny access to specific IP addresses or domain names. Blocking filters operate on an international gateway level and restrict access within a country to web sites with illegal or harmful content. A packet filtering technique is employed, whereby data travelling across the net is broken down into packets with the IP addresses of the source and destination of the packet, along with the source and destination port of the packet. Routers and firewalls can be configured accordingly – to block packets coming to or from IP addresses in the blacklist. The technology can sniff for flagged keywords and deny access accordingly and is very difficult for citizens to circumvent (OpenNet, 2004).

Problems with filtering software

Despite continuing advances in technology, filtering and blocking mechanisms remain imperfect. Much has been written regarding the flaws of filtering software (Edelman, 2001; Electronic Privacy Information Center, 2001a; Hunter, 1999; Kranich, 2004a; Peacefire, 2003a) and fundamental problems with the technology continue to occur.

With list-based blocking systems filter vendors normally compile the lists of restricted or allowed URLs. These lists are incomplete due the size of the Internet and the speed with which web sites and URLs change. Due to limitations of size, dynamism and staff resources, a broader approach to blocking is therefore taken over specificity. The lists themselves are not available for review by customers, nor are the criteria used for adding or rejecting web sites. Filtering companies have invested substantially in the creation of the lists and any methods used are considered intellectual property of the vendors and are defended from examination with vigour (Foster, 2002). Once added, the sites on blocked lists are generally not reviewed again and, while customer feedback might change this, reconsiderations are uncommon (Edelman, 2001). Even if blocking decisions can be overruled by users, "they cannot do so until they learn that a particular site is blocked through direct experience" (Hunter, 1999, p39). There is an element of customisation possible with regards to the lists, but the extent to which users take advantage of this is unclear as a degree of technical skill and the inclination to do so is necessary.

Filters also suffer from the problems of overblocking and underblocking. Overblocking occurs as a result of human error and judgement calls in the review process, and the probable lack of time for a proper review. The demands of monitoring new sites and updating filters most likely mean that little reviewing is probably taking place (Edelman, 2001). The accuracy of site categorisation remains uncertain, as many sites fail to fit accurately into category definitions – or they might fit into a number of categories. Sites that require registration to view content are also problematic, as reviewers rarely register for sites or pay registration fees to web sites that require them to access the full site contents. This can lead to overblocking or underblocking of content as a result. Whatever the case, erroneous classification creates bigger blacklists and continues to add to the problem.

Overblocking can also be caused by technical errors. A single web server may host hundreds of domain names using only a single IP address and if a filter blocks this address then large amounts of content that does not fall into banned categories will be unavailable to users. This situation is occurring in Pennsylvania in the United States, where an anti-child pornography law forces ISPs with Pennsylvanian customers to block access to over 400 web sites around the world which supposedly contain illegal photographs (The Register, 2003a). Consequently, many sites that unrelated to child pornography end up being blocked because most web sites share their IP addresses with many other unrelated web sites. Filtering programs are also often keen to block proxy servers which can deny access to useful legitimate services such as translation services or anonymous surfing tools[24].

[24] Proxy servers help Internet users retrieve content via a third party as opposed to directly from the content provider – they also help users circumvent the blocking process (SmallBizIT, 2004a).

Underblocking is another major problem with filtering software, as the size of the Internet and the difficulty of scouring all of it for harmful content means some unwanted web sites will inevitably slip through the filter. The difficulty of categorising non-English web sites – and the fact that filtering companies operate in specific target and language markets - also means large amounts of 'foreign' content bypasses the filter. Filter image recognition technology is unreliable and filtering programs are often unable to differentiate between image types on web pages (Edelman, 2001). Consequently unwanted images may avoid filtration. Adding to the problem is content that is not delivered via the World Wide Web, such as streamed video, email, instant messaging or file transfer services. These types of content are played outside the web browser and can operate outside of filtering restrictions. Filtering programs may even block all such content types by default which leads back to the problem of overblocking.

The problems of overblocking and underblocking are found regardless of whether a list-based blocking or content analysis technique is employed by the filtering software. When content analysis is used there are problems that result from the inability of the software to assess the contextual situation of a word. It is difficult, for example, for filters to contextualise the word 'breast' – it could be used in relation to cooking, health advice, ornithology or pornography. Keyword analysis runs into problems when it discovers banned words within longer words e.g. Sussex. URLs with these types of words (e.g. www.brassexpert.com) may find themselves on blacklists as a result. Keyword searches also cannot interpret graphics – sexually explicit pictures may only be filtered if banned words appear on the page (Computer Professionals for Social Responsibility, 1998)

A particularly troubling example regarding context can be found in the world's most used search engine, Google. Google allows the option of using the 'Safesearch' filter, a criticised tool that suffers from a lack of sophistication and repeats many mistakes found in other filtering packages over the years (McCullagh, 2003). The impact of this filter will be high indeed, for it is essential for web sites and business to be in Google's listings for maximum visibility. Safesearch uses keyword triggers to place sites on the blocked list and there are no reviews or evaluation. This means the filter repeats basic mistakes that lead to the non-listing of web sites containing words such as 'girls', or 'sex' in their domain names. CNET reports that web sites such as GirlsSchoolOfAustin.org or ArkansasExtermination.com have been incorrectly blocked once the filter is turned on, while the Berkman Center discovered that some political web sites and news articles were incorrectly filtered out (Edelman, 2003; McCullagh, 2003).

Content rating systems also suffer from problems that can impair access to information on the Internet. While PICS advertises itself as offering Internet control without censorship, the ALA (1990), among others (Libertus.net, 1997) has cautioned that "labelling is an attempt to prejudice attitudes and as such it is a censor's tool". If cataloguing labels on information sources in libraries facilitate the finding of information then labels facilitate its suppression - online labels can result in people being physically prevented from accessing and reading information. The labels on Internet content do not take account of subject matter which means that controversial speech could be censored – after all, Internet ratings are subjective judgments that will

result in certain speech being blocked to many viewers. As Phil Archer from ICRA stated in an interview, cultural differences contribute to any filtering system – what is passionate kissing to one person could be considered explicit by another, and likewise with levels of hate speech. Consequently, there are great cultural difficulties involved in creating a filter acceptable to all users.

PICS compatible web browsers use labels to decide whether or not to allow access to web pages. The problem with a system like this is that unless settings block *all* unlabelled material (and material labelled by systems not recognised by the program) then the program will allow access to unlabelled materials. Therefore unless *every* document in *every* country is labelled with the *same* rating system the software has to be set to block all unlabelled material to properly protect children– otherwise unsuitable material could be accessed from abroad. Placing a label on unsuitable material, therefore, does nothing to protect children – the material is inaccessible *whether or not* it is labelled (Libertus.net, 1997).

Further problems are caused by the complexity and labour-intensiveness of rating systems. Difficulties occur as a result of some systems' technical incompatibility with the fundamental software of the Internet such as Microsoft's Internet Explorer. Phil Archer also highlighted the complexity of filtering software as an issue for consideration, with many users missing out on the subtleties of the software due to technical inexperience and often ending up with the harshest settings. On top of this, many types of material are very difficult to rate and it can be time-consuming for 'currency' sites or sites with large archives to stay up to date with rating. This leaves large commercial sites at an advantage, should a situation ever come about in a country where it is obligatory for webmasters to rate their sites. Rating judgements are highly subjective, and with beauty being in the eye of the beholder it is possible that sites will be misrated. The American Civil Liberties Union (ACLU) points out that this could lead to regulation and penalties for misraters should governments move to a system of obligatory rating. Again, such a situation would favour commercial web sites with the resources to pay.

Fears have been expressed regarding compulsory labelling of web sites (ACLU, 2002; Electronic Frontiers Australia, 2001). Governments might seek to enforce labelling on the grounds of child protection or even simply to generate the type of 'trust' in web content that Bridges.org believes is necessary for Internet use to really take off within a country (Bridges.org, 2004b). Compulsory labelling might be enforced by legislation or by coercing access providers into 'protecting children'. Either way, according to Electronic Frontiers Australia (2001) such a scenario would likely involve government approval of one or two rating systems which would centralise labelling duties but limit consumer choice.

There is also the wider problem of the Internet being a global medium. Self-rating might encourage processes of balkanisation as content from abroad will not be rated and therefore it will be unavailable in countries that require rating. Access could be denied to large numbers of foreign sites as a result. Internet pioneer Vint Cerf has commented that "if every jurisdiction in the world insisted on some form of filtering for its particular geographic territory, the www would stop functioning" (Kettman, S, 2000). Advances in geolocation technology could mean a near future where content providers will be able to check boxes to indicate where in the world information can be exposed

(Leggard, 2002). Consequently, overcautious or indifferent publishers could omit "unimportant" countries from these lists, restricting information flow and compounding the digital divide. It is very difficult to conceive of a rating system that will suit all the cultures of the world, much less imagine the system being used on a scale large enough to make a difference. Labelling everything according to a single classification system (or even a handful of systems) "distorts the fundamental cultural diversity of the Internet" – it could lead to one set of political or moral viewpoints dominating (GILC, 1998).

Filters and libraries

Thanks to filtering decisions being placed in the hands of third parties, contextual information and the range of choices necessary for informed decision-making are removed from the information seeking process. The lack of transparency in the labelling and blocking process leaves users at a disadvantage and at the mercy of filtering software. Filters are 'blunt instruments' which cannot differentiate between adults and minors, nor exercise the types of subjective judgement people can (Hilden, 2003). They are unable to differentiate between real or computer generated images of child pornography and have specific problems with sexual health, contraception and medical issues amongst other things. There is a lack of sophistication in filtering software which causes problems of overblocking and underblocking – problems which cannot be shaken off despite filtering technology being available in the mainstream for nearly ten years.

Despite these problems, the market for filtering software is expanding. Market analysts predict global sales of web filtering technology will grow from $247.2 million in 2002 to $776.9 million in 2007 (Register, 2003b). Currently North America accounts for most revenues with Europe some way behind. China, South Korea and Japan are the other areas of the world where a serious market for commercial filtering software exists. Although most market growth will be driven by the consequences of abusing Internet access in the workplace, public access providers are still involved in the market. The level of concern regarding harmful images on the Internet on behalf of family groups (Family Research Council, 2002), for example, means efforts to protect children through legislation mandating filtering continue in countries such as the United States. In other parts of the world too concern regarding the types of information available on the Internet has led to government frameworks for filtering that severely impair freedom of access to information.

As discussed in Chapter Three, libraries are for social inclusion, not exclusion. In light of the problems with filtering and blocking software outlined above legal and useful material will inevitably be blocked if filters are employed in libraries. While it has been pointed out that librarians have always selected material for library stock and have therefore acted, to an extent, as a filter, filtering software removes selection decisions from librarians and places it in the hands of non-library trained third parties or computer automation. Decisions regarding filtering in libraries raise issues for education, access to information and freedom of expression. While some people might consider certain materials objectionable, libraries have an obligation to serve all their users. Filters will block the free flow of information and therefore prevent libraries from providing the fullest possible access to information. An example of this is the Children's Internet Protection Act in the United States.

The Children's Internet Protection Act (CIPA)

"*It's not news to say that millions of kids had a safe rewarding experience on-line today*" Ann K. Symons (1999)

The Children's Internet Protection Act (CIPA) was signed into law by former President Clinton in December 2000. CIPA was the third attempt by the US Congress to censor Internet materials after the first two were overturned by the judiciary[25]. In May 2002 CIPA was successfully challenged in the courts by the American Library Association (ALA) and the American Civil Liberties Union (ACLU) on the grounds that it violated the First Amendment's guarantee of freedom of speech. Despite this, the US Supreme Court upheld the constitutionality of the act on appeal in July 2003.

CIPA requires any public library, public school library or library institution that receives certain forms of federal funding, no matter how small, to implement 'Internet safety policies'. This means the mandatory installation and use of content blocking software on all library terminals. Filters are to be used at all times, by children, adults and library staff in the hope of blocking obscenity, child pornography and material harmful to minors. Three specific types of content must be blocked by the filters: 'Obscene' materials, which are defined as depicting sexual conduct that appeals only to prurient interests, is offensive to community standards and lacks serious literary, artistic, political or scientific value*;* 'Child pornography', which is defined as the depiction of any form of sexual conduct or lewd exhibitionism involving minors; and 'harmful to minors' which includes any depiction of nudity, sexual activity or sexually simulated activity that has no serious literary, artistic, political or scientific value to minors (Jaeger and McClure, 2004). While the first two categories have long been considered illegal in the United States the third category is potentially vague and, in light of CIPA, potentially harmful to adults' - and teenagers' - information seeking activities.

CIPA only requires that images be blocked in each of these categories but, as detailed above, filtering software frequently blocks information other than images including entire web sites or sites sharing IP addresses. Consequently, the final outcome could be that adults may be denied access to speech constitutionally protected in the US.
For US librarians, the use of filtering software and the practice of blocking sites runs contrary to the ideal of freedom of access to information (ALA, 2001). Indeed, the ALA fought vigorously to oppose the imposition of CIPA in libraries and joined forces with the ACLU to argue that filtering software blocks more than the required categories and its limitations mean that access to vast amounts of relevant information is denied. There are many examples of this from the US, whose documented experience with filtering is greater than other parts of the world. Two examples will suffice here: the newly created web site of the Flesh Public library in Piqua, Ohio was banned by Net Nanny filtering software due to the proximity of 'flesh' to 'public' in the web address (Associated Press, 2002). Meanwhile the web site of US Congressman Dick Armey was blacklisted due to his first name (Benner, 2001).

[25] The first two pieces of legislation were the Communications Decency Act (CDA) of 1996 and the Children's Online Protection Act (COPA) of 1998

In opposition to examples such as this, the government argued that filtering measures were not a direct prohibition on free speech, and instead were more of a funding provision – libraries that want IT-related federal funding would have to install filters; those who chose not to can forgo the extra money. The ALA and ACLU argued that if libraries are forced to filter, a third party agent - be it a non-librarian human or a machine - will be responsible for a list of banned sites. This agent will be a censor, and library users will be subject to censorship. Essentially "CIPA… [would force]…libraries – through the weapon of the federal purse – to violate patrons' rights" (Mach, 2001). In May 2002 a district court agreed with this position and found that the use of filtering products in libraries was unacceptable due to their tendency to overblock materials. There were alternative methods, the court said, that could be used to protect children and speech at the same time, such as acceptable use policies or private areas for adult access. However, when the case reached the Supreme Court on appeal, a majority of judges felt that because adult users could ask librarians to turn the filters off the exercise of protected free speech activities by adults in libraries would not be compromised (Jaeger and McClure, 2004).

It is true that theoretically library users are allowed to turn off the filtering software for 'bona fide' research purposes. However, the act of asking the librarian to remove filtering can be problematic for a patron who is looking at sensitive materials or working on research he does not wish to share. The user's freedom to access information is impaired. Additionally, with network based blocking software this process can be fairly complex and librarians, who are not often dedicated members of technical support teams, may not have the skills. Consequently, there are many logistical issues to consider, such as whether all staff members are to be granted computer administration privileges or only some. Is the researcher to be allowed access to a web page, a directory (an entire web site), or a server? The situation could become very complex, as content for a web site could be spread across a number of servers and if a librarian removes all restrictions and allows access to the whole Internet then CIPA may not be complied with (Edelman, 2001). The removal (and subsequent replacement) of access restrictions is potentially time-consuming and problematic therefore, for both users and librarians. With the amount of libraries using filtering software increasing[26], CIPA has placed a whole new set of issues on the table of American Librarians (Jaeger and McClure, 2004; Minow, 2004)

Filtering and freedom of access to information

The CIPA case centred on the problems filtering software would cause to the free speech rights of American adults protected by the First Amendment. On a wider scale, Article 19 of the Universal Declaration of Human Rights says that freedom of access to information should be protected 'regardless of frontiers' and through any media. The Internet, with its global reach, is undoubtedly a mechanism that can aid human rights, especially freedom of freedom of access to information and freedom of expression (GILC, 1998). Because mass media currently are unable to influence the flow of

[26] Hunter (1999) states that 15% of US Libraries were using filtering software in 1998. Library Journal reported an increase to 32% of libraries in 2001, and to 43% of libraries in 2002, although this was based on a sampling of less than 1000 libraries who voluntarily replied to a survey sent to several thousand libraries (Email from Caldwell-Stone, 2004). A survey conducted by Bertot and McLure (2002) found that 24.4% of libraries blocked content on all public access workstations and 17.5% of libraries blocked content on some public access workstations.

information on the Internet to the extent that is possible with a more one-way medium such as television, it is more difficult to impose political and economic controls on the flow of information online. Citizens in closed regimes can get information on their government and human rights issues that might not be available locally. They can look abroad, see other political models and take advantage of ideational competition to organise and resist existing orders (Boas and Kalathil, 2003; Taubman, 2002). The filtering, blocking or rating of information stops individuals from using the Internet to exchange and communicate information on controversial or unpopular topics. This adversely affects users' human rights.

Therefore, regardless of Article 19's intentions, it is possible to see governments filtering and blocking Internet-accessible information resources around the world. During the course of this PhD project relevant mailing lists have been used to gather information on the extent of Internet filtering restrictions around the world. The time period October 2001 – June 2004 has seen the use of Internet filtering at a national level slowly increase to the point where the issue became contentious at the 2003 World Summit on the Information Society in Switzerland (RSF, 2003e). Several reports by human rights organisations have been produced during this time period detailing the problems experienced by Internet users around the world (Amnesty International, 2004; Arabic Human Rights Network, 2004; Freedom House, 2001; Human Rights Watch, 2000; Privacy International, 2003a; RSF, 2001a; RSF, 2003d). The findings of these reports, along with information gained from mailing lists, are briefly summarised below on a regional basis.

Africa

While all 54 of Africa's countries are now connected to the Internet and Internet penetration is increasing, the extent of use is still bound by the technical and infrastructural difficulties Internet access providers face. The filtering and blocking of information on the continent is not as widespread as in other regions of the world but it is present and on the increase in many countries, notably those states where religious influence or dictatorial tendencies play a role in government. Where filtering is present it is usually facilitated by the use of proxy servers, a situation that is helped by a lack of competition amongst ISPs in many African countries. Religious influence has led to the blocking of pornographic sites in Sudan while Somalia is a user of the 'Clean Internet Services' program imported from Saudi Arabia, restricting access to all sites with sexual content and content that is "morally unacceptable" (RSF, 2001b; 2001c). Elsewhere, the Zimbabwean government has pressured ISPs into refusing to host opposition web sites while at the same time trying to get them to block "politically sensitive emails" (Privacy International, 2003a; Oates, 2004). Governmental control is also key factor in Tunisia where ISPs are required to regulate the content of web sites in line with government policy (Privacy International, 2003a). This has been made easier by the government's nationalisation of the country's ISPs in 2004 (Arabic Human Rights Network, 2004). The state of the Internet in Tunisia is controversial for it is hosting the second phase of the United Nations World Summit on the Information Society in 2005. Groups like Reporters Sans Frontiers have been highly critical of this situation, arguing that a country that bans opposition web sites, resources on human rights and free email sites such as Hotmail does not deserve to host such an important summit (RSF, 2003e). Simply viewing certain web sites can lead to imprisonment under Tunisian law (Arabic Human Rights Network, 2004).

Asia

Asia is a vast region but in the Middle East there is a concentration of countries where the blocking of materials considered sensitive to both government and religious authority and the filtering of Internet access is commonplace. Again, proxy filtering services are widespread along with government control of ISPs. Filtering and blocking occurs in the United Arab Emirates, Syria, Qatar, Oman and Yemen (Arabic Human Rights Network, 2004; CitizenLab, 2004). Often the criteria for banning web sites are quite vague, although types of sites banned normally include human rights resources, government opposition web sites or religious web sites that differ from the prevailing orthodoxy (Ibid). Trying to circumvent filtering measures in countries such as Syria can lead to arrest and a prison sentence (Ibid).

Iran and Saudi Arabia are two of the most discussed countries in the region with regards to the filtering of Internet information. Internet use in Iran has increased greatly since President Khatemi came to power in 1997 but a distrust of non-conformist religious web sites has influenced access conditions. While there were over 30 private ISPs in the country in 1999, the Iranian government outlawed these in November 2001 and they had to be dismantled or go into state receivership. Now all Internet traffic must go through the Data Communication Company of Iran (DCI). The DCI filters out content considered profane or immoral, and the decision to bring all ISPs back under government control was to avoid exposure to 'indecency'. The DCI also tries to filter opposition sites in and out of the country, including the web site of the President's brother's reformist party, the Participation Front (BBC, 2004a; RSF, 2001d). Iranians also have to sign up to a connect contract, with Reporters Sans Frontiers stating that when Internet users sign up to the government's ISP they are supposed to sign a written document stating that they will refrain from viewing "non-Islamic sites" (RSF, 2001d). Further control over users' surfing habits could even extend to the creation of a national intranet separate from the World Wide Web (BBC, 2004b)

Saudi Arabia allowed public use of the Internet in 1999 after spending 2 years designing a centralised blocking system that would enable the government to restrict access to sites it considers offensive (Lee, 2001). The government is keen to harness the Internet for e-commerce but personal freedoms are restricted when it comes to surfing habits. A royal decree states that all traffic to and from the country must go through a single central control centre near Riyadh where sites offering porn or anti-government material are filtered out using the latest technology provided by US firms (Ibid). These sophisticated filtering systems are therefore employed at a national level and, by controlling telecommunications infrastructure and ISPS, the authorities are able to prevent users accessing information 'contrary to Islamic values and dangerous to society' (Ibid). On average, 250 web sites are banned per day (Arabic Human Rights Network, 2004). Recent research at Harvard University however, has found that aside from blocking sexually explicit content and sites relating to drug abuse or gambling, the authorities have blocked sites relating to women's' rights and also a variety of sites dealing with non-Islamic religion (Zittrain and Edelman, 2002a). The New York Times also reports that the blocking software prevents access to sites such as the Committee for Defence of Human Rights in the Arabian Peninsula, the Movement for Islamic Reform in Arabia or others recounting the history of Saudi Arabia (Lee, 2001). Users can attempt to use proxy servers to avoid censorship, or try providers in other countries

such as Bahrain but the use of such methods opens users up to detection (Arabic Human Rights Network, 2004).

Filtering and blocking is also present in Eastern Asia. China is probably the most infamous censor of Internet-accessible information in the world (Amnesty International, 2004; RSF, 2003d; RSF, 2004a; Zittrain and Edelman, 2002b). China established its first connection to the Internet in 1993 and since then user numbers have grown sharply each year. The government's need to maintain the authoritarian single-party state conflicts with its dependence on the Internet for economic growth, and this clash directly affects Internet use in the country. As Internet use grows in China the amount of information travelling over networks increases at the expense of the ability of the government to control it. China's first response to this problem was to censor subversive material on the Internet such as foreign news sites, hostile political discussion in chat rooms and sites owned by banned religious sects. This was, and still is, done via the 'Great Firewall' of China which operates by restricting connectivity at an international level through control of the country's ISPs (Walton, 2001). The Chinese government is in charge of all the Internet gateways for international traffic and therefore can place filtering software on ISPs to restrict access to information considered subversive. Chinese Internet censorship is perhaps the most widely reported in the press, as 30,000 government employees are supposedly monitoring the Web for content unacceptable to the authorities (Amnesty, 2004). Perhaps the most high profile case of censorship occurred in September 2002 when the world's most popular search engine, Google, was blocked for over a week (Wired, 2002). News sites such as the BBC and the Washington Post are also blocked on an irregular basis along with sites promoting democracy and human rights or the independence of Tibet and Taiwan (Arabic Human Rights Network, 2004). Filtering has become more advanced in the last two years thanks to the implementation of the 'Golden Shield' system discussed in Chapter Six, and individual pages can now be filtered within web sites, or specific searches and terms blocked (Walton, 2001; Privacy International, 2003a)

An alternative approach can be seen in Myanmar (Burma) and North Korea. It is uncertain who, if anyone, in North Korea has access to the Internet as the government has not officially opened up access to the Web. Development of a web infrastructure is taking place however, although a model similar to Myanmar can be expected with high costs of access and firewalls in place to restrict access to inappropriate information (RSF, 2003d). In Myanmar, the military is in control of all known Internet access in the country and the 25,000 authorised Internet users are limited to an intranet of approximately 10,000 government-approved web sites (RSF, 2004b; Privacy International, 2003a). Unauthorised Internet use carries a 15-year jail term and gaining access to the Internet proper is extremely difficult and dangerous. Like China and Cuba, the government is keen to limit access to information online and communications with opposition sympathisers abroad via email. To this end, several measures have been undertaken to ensure that the facilities needed for Internet access remain in government hands. All telecommunications devices – be they telephones, fax machines or modems – have to be registered with the authorities, and possession of an unregistered machine is punishable by imprisonment for 7 to 15 years (US State Department, 2001). It is illegal to network a computer and legislation has also been passed to prevent the posting of anti-government information on the World Wide Web. In January 2000 posting of political texts was outlawed and government authorisation became required to create web pages. At the same time, pro-government sites, such as www.myanmar.com, have

been developed to disseminate government propaganda. The government regularly intercepts the few authorised emails within the country and has been known to send viruses to its opponents abroad (RSF, 2001e).

Other countries have adopted similar measures. Laos restricts Internet access using a whitelist approach similar to Myanmar (Privacy International, 2003a) while Vietnam follows China's approach by restricting web access, filtering web sites and threatening prison sentences for offenders (Sheeres, 2002; Kalathil, 2001). The type of material filtered out is similar to Saudi Arabia, with anti-government, morally unacceptable and pro-Israel sites being blocked. Filtering takes place in Thailand using a proxy system operating a blacklist and the Information and Communications Technology ministry is currently setting up a PICS-related web site ratings system which would ban not only pornography and terrorist information but also derogatory remarks about religions or the royal family, and possibly also betting information (Race, 2004; Privacy International, 2003a). Rating has also been tried in South Korea, a country with a vibrant Internet infrastructure and increasing patterns of use. The government introduced PICS-based filtering on all machines in public PC centres, schools and libraries in July 2000 (Jimbonet, 2001). In future, web sites are supposed to carry a tag indicating content in an effort to prevent minors from harmful materials. This tag conforms to PICS system and is used in tandem with a rating system (similar to that designed by the Internet Content Rating Association) which lets users determine a set of criteria that allows only acceptable sites to be accessed on their machines. This means web sites need to be rated in order to be accepted on government computers where the determining criteria have been set up to protect minors. Mainstream gay and lesbian sites have been censored, and the government has also outlawed online protest. In Singapore too, web sites dealing with homosexuality and lesbianism are placed in the same category as bestiality and necrophilia by the government Internet regulator. The authorities considered a PICS-based system but a self-regulation policy was eventually adopted. Content providers have to register with the regulator (Privacy International, 2003a).

In India, the blocking of certain web sites by the Department of Information Technology was permitted in July 2003, although the government has declared this to be a regulation of the balanced flow of information and not censorship (Privacy International, 2003a). The procedure is complaints based, although complaints come from government departments to a regulator who decides what content is acceptable and what is not. In Pakistan, the Pakistan Telecommunication Company (PTA) also operates a limited blacklist filter that restricts approximately 1800 pornographic web sites (RSF, 2003d). In addition to this the military regime has made every effort to block access to a US-based investigative journalism web site. The web site in question, the South Asia Tribune, reported in November 2002 that the PTA had in July that year ordered ISPs and cybercafé owners to keep a record of the names, connection times, numbers called and computer identities of their customers (RSF, 2003). Elsewhere in the region, Uzbekistani media outlets need government permission to operate and ISPs have been unofficially told to block access to web sites containing articles critical of the president and also opposition web sites – these can only be viewed using anonymizers (Privacy International, 2003a). A similar situation exists in Azerbaijan and Kazakhstan (Ibid).

Europe

In April 2002 the European Parliament voted against blocking access to web sites as a way of regulating content on the Internet (Computer Weekly, 2002; Email from Chiu, 2002a). While this vote – on a European Commission evaluation – is in no way legally binding, the signal it sent is reflected in the general state of filtering and blocking across the European Union and the wider European area. As will be shown in Chapter Six, Europe is less concerned with instances of overt blocking of online materials and more interested in forming data retention frameworks as a response to the events of September 11th 2001. There are, however, some countries within Europe where issues of filtering and blocking have come up. Germany, for example, does have censorship issues and far-right hate sites seem to have the highest profile. As the German constitution prohibits censorship it has come down to ISPs themselves to remove unwanted sites from the Web at the behest of users or the authorities. In 2002 85 ISPs in state of North-Rhine-Westphalia were ordered to block two foreign web sites (Privacy International, 2003a). This situation is symptomatic of the problems facing countries wishing to regulate hate speech, for while it might be easy to ask domestic ISPs to regulate domestic content it is more difficult to deal with sites hosted abroad. Spain is also at a stage where governments are prepared to legislate to shut down unacceptable web sites. The LSSICE law makes it possible to shut down a web site that displays content that threatens basic human rights. However, Spanish lawyers have called the law ambiguous and suggest that it could be used by a government to maliciously close small web sites via direct (shutdown) or indirect (fines) methods (Email from Chiu, 2002b; Privacy International, 2003a).

In 2001, a Freedom House survey on global press freedom found that of all European countries, only Albania, Turkey and parts of the former Yugoslavia moderately censored the Internet (Freedom House, 2001). In the three years since there have been continuing, albeit slightly low-key incidents, across the region. In Turkey, for example, owners of cybercafés must promise in writing to block all access to sites that promote separatism, Islamic fundamentalism or pornography, and also get permission to open from the police, who have an "electronic brigade" that strengthens surveillance of the Internet and electronic communications (RSF, 2003d). Censorship cases so far have been rare but the government did try to get all web sites to submit new content to authorities before publishing in 2002. So far, however, this has not happened (Privacy International, 2003a).

Across the rest of Southern and Western Europe there have been isolated cases of web site blocking. Certain ‘blasphemous’ web sites were blocked in Italy, after complaints by a Vatican paper in 2002 (Index on Censorship, 2002a). In Switzerland requests from the police for ISPs to block web sites detailing local government corruption have been reported by Privacy International but it is unclear how common this situation is as no court cases have been brought by any involved parties (Privacy International, 2003a). The situation in France regarding responsibility for harmful content is ongoing - service providers can only be held responsible for content if a judge has ruled the content illegal or if the web page is ‘manifestly illegal’ and ISPs have done nothing about it. Reporters Sans Frontiers report a feeling that that there is still a risk that service providers will abusively censor the Internet despite the advice of the French Constitutional Council (RSF, 2003d).

Latin America and the Caribbean

In their 1996 report 'Silencing the Net', Human Rights Watch stated that "Internet censorship has not become a major issue in Latin America" (Human Rights Watch, 1996). Privacy International's 2003 report states that the filtering and blocking of Internet information is still uncommon in the region (Privacy International, 2003a). The use of filtering software on public access PCs is mandated in countries such as Argentina, Mexico and Peru, although filters can be deactivated if an adult is accessing the computer. At a national level, Columbian and Argentinean ISPs have to provide filters to customers on request – although what type of material is to be filtered is not specified in the Argentine law (Ibid). In Panama the government has ordered ISPs to block Voice Over Internet Protocol (VOIP[27]) sites so as to protect telecoms companies, although to what extent such a ban affects freedom of access to information on the Internet – especially in relation to libraries – is open to discussion[28] (The Register, 2002)

The most noted case of restricted Internet access occurs in the Caribbean, in Cuba. Like China, the Cuban government is worried about the wide range of information available on the net and the conflict this causes to the goals of the state. However, where the Chinese government has blocked web sites to restrict access to information, the Cuban government has censored by restricting access to the Internet itself. Cuba has been online since 1996 and the state controls the only Internet gateway and the four national ISPs. User numbers are low due to the government's policy of granting access only to "entities and institutions most relevant to the country's life and development" (Boas and Kalathil, 2001, p12). Most official users are academics or government workers (Sheeres, 2001). The buying of computers by individuals was outlawed in January 2002 although enterprising ordinary Cubans can access the net at university, via the black market in passwords or use email by borrowing foreign friends' accounts (RSF, 2004c). They do, however, run the risk of surveillance by the authorities at all times (Kettmann, 2001). At the same time as controlling access points, the Cuban government is also developing a national Intranet which would allow access to web pages hosted in Cuba and national email but not to external sites which in effect continues a policy of information censorship (Boas and Kalathil, 2001).

Northern America and Oceania

In the two remaining regions of the world Internet censorship issues are present and debated publicly. The main Internet issue for libraries in North America over the last three years has been the Children's Internet Protection Act discussed above. The CIPA appeal highlighted the existence of a genuine Internet censorship debate in the United States. In the Pacific region, Australia is having a censorship debate of a different kind to anywhere else in the world. A two-tiered system of Commonwealth and State

[27] VOIP is the delivery of voice information using Internet protocols. The technique is potentially revolutionary for long distance communications, in that it avoids the costs normally associated with telephone service – good for the customer but less advantageous to the owners of telephone networks (SmallBizIT, 2004b)

[28] Hansen (2002) reports that an April 2002 study by the Boston University School of Law Review found that Argentina, Cuba, Egypt, Israel, Kenya, Mexico and South Africa also have measures in place to curtail use of the technology. Reporters Sans Frontiers state that the situation is the same in Bangladesh (RSF, 2003)

legislation exists that concentrates on ensuring both ISPs and content providers refrain from publishing content on the Web that is unsuitable for children, even if this material is only made available for adults. This includes archived mailing lists and messages to newsgroups. Even if the material is placed in a secure password-protected area of a web site the content provider could still be prosecuted. Content is to be judged along the guidelines set out by the Australian board of film classification where films unsuitable for minors are rated 'R'. The problem is that the legislation applies not only to pornography but also to social and political issues such as crime, suicide, emotional trauma and religion. In light of this, it is possible that adult discourse regarding social and political issues will be hampered on Australian Internet sites, newsgroups, forums and archived email discussions. The Australian Broadcasting Authority (ABA) is in charge of monitoring the situation and has the power to remove unsuitable content from ISP's networks. Removal follows the making of a complaint by a third party but Electronic Frontiers Australia found the scheme to be largely ineffective – ABA spent most of its time dealing with complaints about foreign web sites over which it had no control. This viewpoint was reflected in statements made by the Australian Institute, a public think-tank, who called the present system of control useless and called for compulsory ISP filtering (Crabb, 2003). How the situation will proceed in Australia is uncertain.

Filtering, blocking and the international library community

The filtering and blocking of Internet-accessible information resources is therefore occurring in many parts of the world, to a greater or lesser extent. As can be seen from the examples above, filtering and blocking also go hand in hand with the active removal of information from the Internet by authorities concerned with the spread of 'harmful materials'. This phenomenon has increased since September 11th 2001, and is covered in this context in Chapter Six. However, despite the best efforts of government censors it is likely that removed material will still be out there somewhere, duplicated, on the Web. This is because information can be recycled in any number of ways such as mirror web sites, the Internet archive (also known as the Wayback machine[29]), or peer-to-peer file sharing. As long as the Internet is open access all its millions of users would have to agree for a piece of information to completely disappear. Most efforts to censor the Internet therefore concentrate on blocking access over information removal (Privacy International, 2003a).

It is worrying that the corporate sector is assisting certain governments in their efforts to filter the Internet. Most states that implement content filtering and blocking build customised blocking lists that sit on top of commercially developed technologies and blacklists – with China being the best example (Walton, 2001). Commercial interests and bias cannot be discounted in the type of information filtered either – filters have been known to block access to articles critical of filtering companies (Maxims & Arrows, 2002; Peacefire, 2003b). Government encouragement of industry self-regulation is also problematic, with the Global Internet Liberty Campaign (GILC) going as far as to call self-regulation "privatised censorship" (GILC, 1998). If ISPs police the Internet on behalf of the government, speech could be removed on the grounds that it might be illegal thus suppressing the free flow of information. Furthermore, if such a self-regulatory regime has the support of the government it could even constitute state

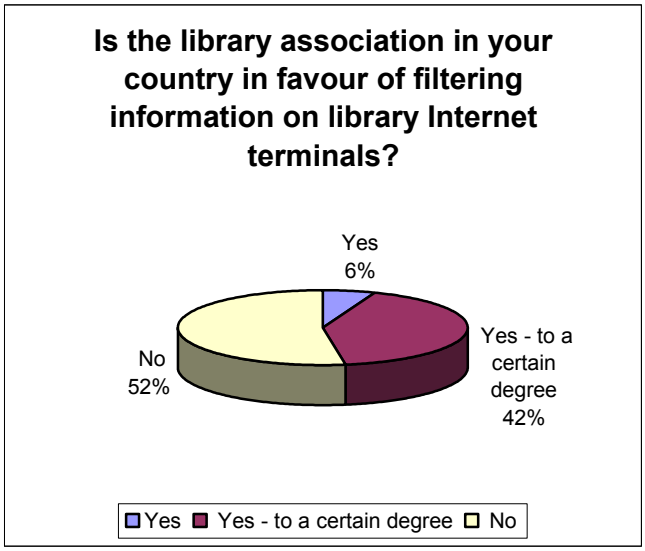
[29] The wayback machine can be found at: www.archive.org

censorship – as might be suggested in the case of the 'self-discipline' pledge the Chinese government requires content providers such as Yahoo to sign (The Guardian, 2002a; Richardson, 2004). The GILC suggests that some removal leads to more removal, in an attempt to cut back on all material that might be illegal (GILC, 1999).

Libraries, therefore, have to contend with government directives to filter access, and also use the tools provided by private companies that sometimes have their own agendas. They can also only provide access to an Internet environment offered by their ISPs. While the extent to which filtering problems affect general Internet use within a country have been explored in the reports cited above, the extent of filtering within the international library community has not previously been explored. Question 2 of the empirical survey of IFLA member countries carried out in 2003 looked at the issue of filtering and how common it was on library Internet terminals. The reasons for filtering, if it took place, were examined, and also the position of national library associations on the use of filtering software.

Question 2

Overall, 84 countries answered Question 2a relating to whether or not the country's library association was in favour of filtering Internet access on library terminals. Respondents were given the opportunity to answer Yes or No, but a third category – Yes, to a certain degree – was added to allow for libraries who believed filtering was appropriate in some circumstances. Question 2c allowed for further examination of the reasons behind filtering. Figure 19 below illustrates the results of Question 2a:



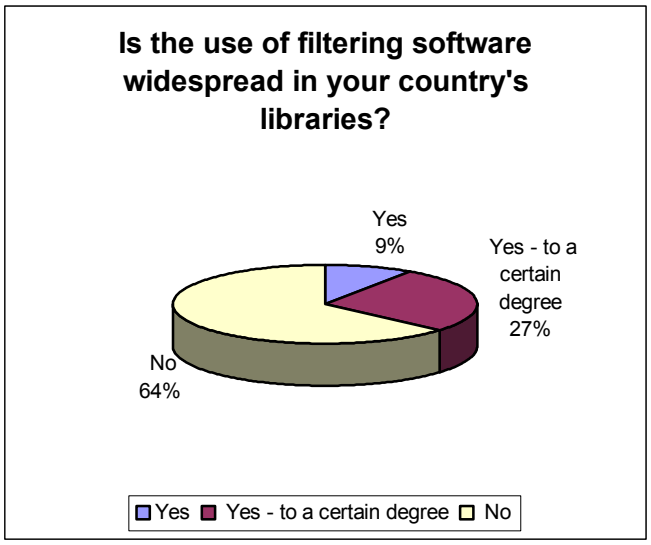
Global results - 84 Countries*

* No answer from Netherlands Antilles, New Zealand, Nicaragua, Panama, Vatican City

Figure 19: Is the library association in favour of filtering information on library Internet terminals?

While 52% of respondents (44 countries) were not in favour of filtering Internet access in libraries a significant percentage (42%) favoured filtering to a certain degree. Only five (6%) of respondents were in favour of filtering: Belize, Cape Verde, Nepal, Slovenia and Venezuela.

As illustrated above, Internet filtering decisions are often undertaken at a governmental level. The extent to which libraries are able to influence Internet filtering policy is therefore uncertain. Question 2b sought to identify any gaps between a library association's policy and the implementation of filtering in practice. Question 2b asked whether, regardless of the library associations' position, the use of filtering software in libraries is widespread in the respondent's country. Again, respondents were given the opportunity to answer Yes or No, or Yes, to a certain degree. Here it was apparent that the software is not extensively used in the international library community. Figure 20 below shows the results:



Global results - 85 countries*

* No answer from Costa Rica, Namibia, Panama and South Africa

Figure 20: Is the use of filtering software widespread in your country's libraries?

The responses from 85 countries showed that the use of filtering software was not prevalent in the international library community. The 8 countries where filtering was widespread were: Belarus, Cape Verde, Japan, Nepal, New Caledonia, Nicaragua, Russia and Venezuela

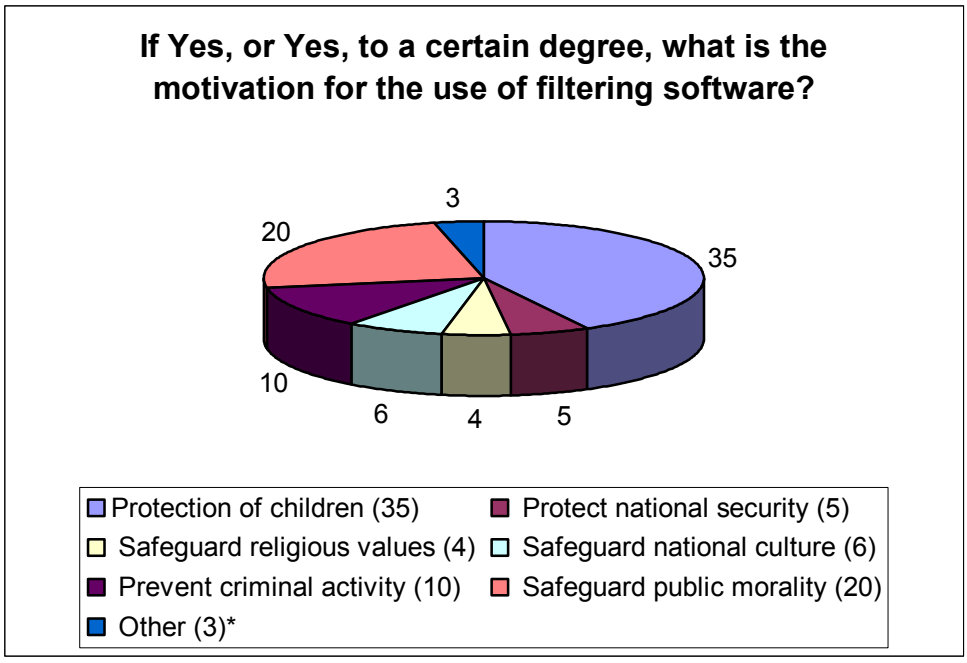
It should be noted that at the heart of any analysis of this question lies an assessment, on behalf of the respondent, regarding interpretation of the phrase 'widespread' in the question itself and 'Yes, to a certain degree (e.g. on children's terminals)' as a possible answer[30]. What is widespread to an Asian respondent maybe quite different to that of a European. Again, as with the answers to Question 1 explored in Chapter Four, the size of a library service is also of relevance when considering what widespread is. To give one example of how the results may be interpreted differently in light of this situation, footnote 30 above reports that a survey by *Library Journal* found that 43% of US libraries were using filtering software in 2001. The United States response to Question 2b was that the use of filtering software was widespread in the country's libraries, to a certain degree. If nearly half of all libraries using filtering software is not definitely widespread, what is the tipping point? It could be argued that the wording is too vague to gain a real impression of the situation but the results nonetheless make interesting reading.

[30] The questionnaire can be found in Appendix 1.

For example, the use of filtering software was widespread in more countries than the number found to be in favour of using it. In Russia and New Caledonia, for example, the library associations are not in favour of filtering and yet filtering software is widespread in the countries' libraries. Belarus and Japan are only in favour to a certain degree and yet use of filtering is also widespread (use of filtering is also widespread in Nicaragua but unfortunately the library association's position was not revealed in the questionnaire). These results could be interpreted to mean that in some countries a situation exists where libraries are forced to filter even if they do not wish to, or at the least employ more filtering that they believe is necessary.

Further investigation into this issue could prove interesting, and give some idea of how much influence libraries actually have over issues such as Internet policy. Because of the charged nature of the debate about children's access to harmful materials, for example, decisions about filtering can often be removed from libraries' responsibility and placed in the hands of alternative authorities. The issue, therefore, is not as simple as to filter or not to filter. Many libraries provide filters for children's Internet terminals and, as the results of Question 2a show, 42% of respondents (35 countries) answered that they are to a certain degree in favour of filtering information.

The questionnaire therefore tried to discover the motivation for filtering Internet-accessible information. Question 2c asked those respondents who had answered 'Yes' or 'Yes, to a certain degree' to the first two questions to indicate the reasons why they are in favour of or use filtering software. 42 countries indicated the reasons behind their motivation for filtering, and these respondents were allowed to tick as many reasons as they wished from the list provided. The results are thus:



* Other reasons were: Virus protection (Belize), Porn (Trinidad and Tobago) and Safeguarding servers (Zimbabwe)

Figure 21: Motivations for the use of filtering software

The figures indicate the number of respondents who ticked a motivation. Protection of children was top of the list but a significant number of contributors felt the need to safeguard public morality through the use of filtering. It is assumed that this means

preventing users accessing pornographic web sites or violent materials online. There is an important point to make here regarding this assumption though – that the cultural background of the respondent's country will likely inform how these categories were interpreted. What is public morality to one person may not be the same for another, and likewise for national culture. The respondent from Trinidad and Tobago's response, for example, did not tick the 'Safeguard public morality' option and instead chose the 'Other' category, before clarifying this by declaring protection against porn to be the motivation. Hofstede's cultural relativism is undoubtedly in play here (Hofstede, 2001).

Interestingly, preventing criminal activity, such as stopping users gambling online in countries where it is illegal, was an option chosen by a quarter of respondents to this question, which may reveal either the existence of a new problem library user in some countries (Andorra, Angola, Belarus, Belize, Ghana, Hong Kong, Macao, the Philippines, Switzerland and Thailand) or may simply reflect the beliefs of the respondent with regards to filtering. The remaining categories were chosen by very few countries, indicating that few libraries are using filtering software to safeguard religious values (Egypt, Ghana, Iran, the Philippines), national culture (Egypt, Kenya, Nepal, Nicaragua, the Philippines, Swaziland) or to protect national security (Belarus, Chad, Ghana, Kenya and the Philippines). This is interesting if the motivation of governments like those Saudi Arabia, China or Cuba is considered, for it would appear the library community is more concerned with protecting children and preventing access to pornography than it is in following a more overtly nationalistic or religious ideology such as those pursued by certain governments around the world. The point must be made again, however, that the extent to which the library community can influence those members of a country's political class responsible for the implementation of filtering at upstream levels (i.e. in China) is open to question. As the questionnaire was dealing specifically with a country's library community the motivations of other estates within a country cannot be gleaned at this point, even if the results of these motivations may explicitly affect Internet access in a country's libraries. Here the example of the Russian situation mentioned above may be referenced once again. Finally, it is also worth noting that respondents may also have interpreted the questionnaire's concentration on 'filtering software' as concentrating only on software that has been installed in the library – on a PC, or on a library network. Any filtering further upstream may therefore have gone unconsidered by those completing the questionnaire.

Conclusion

While the evidence presented in the regional summary showed that it is the governments of nation states that are behind the impetus to filter information on the Internet (albeit influenced by interest groups keen to defend values relating to morality, culture or religion) the reasons for filtering information vary from country to country – as can be expected on a global scale. The obstacle discussed in the following chapter, the surveillance of Internet use and the retention of users' surfing data, has been consolidated in the context of the war against terror but the filtering of Internet-accessible information has no single guiding principle. The reasons for the filtering of information appear to result from cultural and political contexts present in any given country – although it can be said that religion is a key factor for many states in the Middle East. Regardless of this, the responses to Question 2 showed that the use of filtering software is not widespread within the responding countries' libraries. This is backed up, to the extent that it can be, by the comments of senior library professionals

in the UK and Serbia and Montenegro, as well as by the participants of the roundtable discussion session in Berlin. It cannot be ignored, however, that a significant proportion of the respondents were to some degree in favour, or totally in favour of using the software. When it comes to protecting children for example, the results from Question 2c make it appear that the respondents from the international library community are united in this being the main motivation for the use of filtering software – something backed up by discussion during the Internet Manifesto Workshop in Uganda. In light of the problems with filtering software discussed above, and the commitment of the library profession to Article 19 of the Universal Declaration of Human Rights, this creates a situation that is open to interpretation. It appears that libraries around the world would consider using the 'blunt instruments' of filtering to protect more vulnerable users such as children, even if it is at the expense of accessing legitimate information. This is worrying for a number of reasons. The proprietary nature of filtering software leaves librarians in the dark as to how and why web sites are blocked. Trust has to be placed in the hands of third party commercial vendors or government agencies, both of which may have agendas which differ from traditional library attitudes towards freedom of access to information and adults' responsibility for their own information seeking decisions. Also, it could be argued that once a filtering policy is adopted by an association or seen as acceptable it becomes difficult to go back. The consequences for freedom of access to information on the Internet in libraries are unclear, but it would appear that the issue of filtering in libraries will not go away as the market for the software grows and media coverage of the dark side of the Internet continues. As the CIPA case in the United States has shown, societies can be polarised by the potential of the Internet to access information and libraries often have to bear the consequences of decisions that they are often unable to influence to any extent. The use of filters does little to ensure that access to Internet-accessible information resources is unhampered.

Chapter 6 - Data Retention and the Surveillance of Internet Use

Introduction

This chapter moves on from examining restrictions on freedom of access to information on the Internet and looks at how users' freedom of expression may be compromised as a result of surveillance and monitoring. If the filtering and blocking of Internet-accessible information places a direct obstacle in the way of users' information seeking activities, then surveillance and data retention measures create an indirect block in that they can influence information seeking decisions before they are made. Surveillance and monitoring of Internet use, the interception of communications and the retention of user data for specified or unspecified amounts of time negatively influence the information-seeking environment.

The chapter begins by revisiting the link between user privacy and freedom of expression. The parties responsible for surveillance activities are then identified as being the governments of nation states, along with the reasons behind such actions and the possible consequences for users are outlined. While the technical mechanisms that facilitate the monitoring of Internet use are briefly explained, emphasis is laid on the reasons behind recent increases in the use of monitoring technology, namely the change in the global security situation caused by the September 11th 2001 terrorist attacks in the United States. This chapter aims to show that while technology existed to carry out Internet monitoring activities prior to this date, nation states previously had no impetus to extend surveillance activities to the levels seen in 2004. As with the obstacle outlined in the previous chapter, the filtering and blocking of Internet information, libraries have to exist as information providers in an arena of national information policy. To illustrate the extent to which post-September 11th information policy affects the international library community this chapter follows a similar format to Chapter Five, in that an overview of Internet monitoring around the world will be used to show the scope of the problem on a global scale. To complement this, original research conducted regarding libraries and Internet privacy is included at the end of the chapter to show the extent to which the problem of data retention affects libraries as information providers.

This chaper continues with answers to the final research question outlined in the introduction. It complements Chapter Five by outlining how the actions of nation states are able to create restrictive environments for accessing information resources on the Internet. This chapter is concerned with information resources available via the World Wide Web, and how the supply of these materials, and their use, can be affected by the actions of governments keen to retain some control over the flow of information on the Internet. Specifically, it looks at how the use of surveillance and data retention measures can create an indirect block on accessing information resources on the Internet through the construction of an environment ill-suited to freedom of expression.

Freedom of expression, privacy and the monitoring of Internet use

Freedom of expression is the freedom of the individual to express his or her thoughts and opinions through whatever medium they see fit. It is also the freedom to express or seek out what may be extremely unpopular ideas without fear of reprisals, and this

aspect of the concept is key to this chapter. As discussed in Chapter Three, information-seeking decisions are affected by the environment in which they are made. Issues of confidentiality and user privacy are key to this environment, for individuals are better able to exercise freedom of expression if they are free from third party repercussions. Libraries, as providers of information, and also as providers of an appropriate environment for accessing information, are aware of this situation but circumstances regarding user privacy, especially on the Internet, can sometimes remain out of their control. Freedom of expression in terms of the Internet means the freedom of the user to communicate, post information and undertake the seeking of others' thoughts and opinions in an online environment where such activities are not monitored or recorded by governments seeking to control information flow within a nation state.

If democracy is best facilitated by citizens having as wide an access to sources of information as possible, so as to make informed decisions about courses of actions, then it is important that all those with a message to get across have a forum in which to express themselves. The Internet, in its role as a public sphere, provides such a forum (Dahlberg, 2001; Holmes, 2002). However, when faced with repercussions for disseminating information or expressing opinions considered dangerous to a ruling authority, only the bravest of social activists (or dissidents, in the eyes of governments in China, Cuba or Vietnam for example) will continue to spread their message in Cyberspace. Since September 11th 2001, but certainly prior to this date also, governments around the world have been taking greater measures to collect and preserve user information relating to Internet communication and surfing habits. Ostensibly, these actions are to enable interception of terrorists' communications, prevent future atrocities and curb Cybercrime, but the net result is the creation of an online environment where information flows are impeded due to the threat of surveillance. The Internet's capability to spread political ideologies to millions of users worldwide via email cheaply and quickly is a threat to authoritarian governments interested in maintaining existing power structures. The concept of ideational competition, where ideologies compete for prominence within a marketplace of ideas, is anathema to non-democratic regimes whose rulers insist they are best placed to govern the population (Taubman, 2002).

Privacy is a fundamental human right that is recognised around the world, and most constitutional rights to privacy recognise that secrecy of communications is each individual's right (Privacy International and the Electronic Privacy Information Center, 2002). The surveillance of individuals' actions by governments, or private parties, can therefore be considered an intrusion of individual privacy but, despite this, over the past two decades governments and companies have used powerful computer technology to collect, process and disseminate a vast spectrum of personal information. The result of such a situation is that personal privacy – and individual freedom of expression – can be compromised more than ever before in the age of the Internet.

Arguments in favour of surveillance do exist, however. Ware (1993, p197) believes that "a government…has the right to gather private and personal information from its citizens with the aim of ensuring order and harmony in society". It might be said that the right to privacy is confined by social responsibility, and Giddens (1989) talks about the contract between the citizen and nation state, whereby some personal information – and indeed freedoms – are given up in exchange for security, whether that security is of a military or welfare nature. It could be that personal privacy is a balancing act

therefore, and exists in the shadow of a government's perception of current threats facing a nation state.

Regardless of the balance that individual governments decide to strike, modern technology undoubtedly facilitates a wider and more simultaneous access to information. While there are undoubted benefits to the individual from such increased access, there are also questions raised by the other ways that information-gathering technology can be used. Technology makes it easier for third parties to access a person's private information. It can be used to monitor individuals' information seeking, whether this is at work, in school, or in libraries. It can be used to intercept communications between people or analyse transactional data on credit cards, storecards or even library cards. Perhaps most insidiously, it can be used to merge databases containing personal details, databases that contain both public and private information whose existence and veracity individuals may be unaware of. All of these uses of technology are open to abuse, and the effects of abuse on the individual are negative - a loss of dignity and spontaneity, and a threat to individual freedom and privacy - with inevitable effects on information-seeking choices as a result (Britz, 1999).

Digital surveillance

According to Privacy International (2003a), the international digital surveillance movement is about 15 years old, and has been led by the United States since its inception. The approach is twofold: enable the interception and retention of communications, with the help of national and international telecommunications companies; and limit the development and dissemination of encryption technology. This thesis is not the place to discuss the later issue. Pursuing the first angle involves gaining the co-operation of telecommunications companies, something which has been achieved through legislation at a national level. In the United States this took the form of the Communications Assistance for Law Enforcement Act (CALEA) of 1994, while similar legislation was introduced in the Netherlands in 1998 and the United Kingdom in 2000. Moves towards standardising digital surveillance techniques were in place before September 11th 2001 therefore, and were the result of great international co-operation mostly due to the US pursuit of international technical standards for surveillance. These were the International Law Enforcement Telecommunications Seminar (ILETS) standards, developed out of meetings hosted by the FBI from 1993 and involving the European Union, Canada, Australia, and Hong Kong (Privacy International, 2003a). IP address and email surveillance was included in the accords from 1998.

Normally surveillance is regulated by constitutional protections regarding privacy of communications and by laws and regulations that implement these requirements. In theory, a wiretap, or surveillance of any kind, is only required for investigation of serious crimes, and it will normally need to be approved by a judge or independent magistrate. Obviously this situation differs around the world, but generally speaking an element of oversight is desired on behalf of civil society (Privacy International and the Electronic Privacy Information Center, 2002). This might take the form of an annual report detailing how many times powers were used along with a summary of cases and indeed this situation can be found in countries such as Australia, Canada, France, New Zealand, Sweden, the UK, and the US. In other countries there is much less oversight and therefore more potential for surveillance techniques to be abused (Ibid).

As stated above, the US has led efforts to ensure all communications technologies have built-in surveillance capabilities – on a global scale. Surveillance legislation enacted as a result of the ILETS meetings specifies what can and cannot be accessed by security agencies of nation states. There are two types of data involved – locational and transactional. A landline phone's locational data will reveal the address that phone is registered to - a specific home or a location within a business for example. Transactional data, on the other hand, is different, and the type of data that can be accessed by security agencies will include telephone numbers, call metrics (the length, time, and date of call), the countries involved in calls and the types of services used. This data is usually collected by telecommunications companies for billing and fault correction purposes by default. Security agency access to this information requires lower authorisation and less oversight. On the other hand, transactional data such as conversations - content - is not stored by law, and if security services require use of a wiretap to given them access to content then greater authority and oversight are required.

As digital communications technology has developed it has thrown up more categories of transactional and locational information. Mobile phone locational data is more sensitive than landline telephones, and new developments in technology mean the whereabouts of an individual can be very precisely calculated. Locational data for Internet users differs according to the type of method used to connect to the Internet, as IP addresses are sometimes shared among many users, or randomly allocated when users go online[31]. Compared to landline telephones transactional data on the Internet is particularly different, in that there is more information available that can build up a personal profile of a subject under surveillance. Tens of web sites can be surfed in a few minutes for example, which could theoretically reveal personal interests, preferences or political affiliations very quickly. In this way it is similar to the content of phone conversations, leaving privacy organisations worried about the extent to which current laws protect access to it (Privacy International, 2003a).

The techniques used to monitor Internet activity have similarities with some of the filtering approaches mentioned in Chapter Five. Surveillance systems are based on packet sniffing technology, meaning that the traffic flowing in and out of networks is monitored and 'sniffed' for keywords, phrases, strings, IP addresses or email accounts. This data can be retained or passed on to security forces for examination. With regards to legislation, not all countries differentiate between different types of traffic data, although the Regulation of Investigatory Powers (RIP) Act in the UK (discussed below) does make a distinction between less sensitive 'traffic' data such as the source and destination of a transaction used for routing within a network, and 'communications' data which includes URLs visited or domain names (Privacy International, 2003a). Understandably, more oversight is required for access to the later.

Why monitor Internet activity?

The reasons why governments may want to monitor Internet activity vary from country to country. The need to track the online activities of criminals has resulted in such regional legislation as the European Union Convention on Cybercrime, but it must be

[31] This situation may change in future, however, as a result of the IPv6 protocol. IPv6 means that every packet sent out by an individual user onto the public Internet can be traced back directly to a specific computer. For more details see: http://www.ipv6.org/

remembered that the constitution of a criminal differs around the world. Indeed, some governments may want to track the activities of their political opponents, or track down subversives using the Internet to undermine the current political or economic situation within a country. As discussed in Chapter Two, the Internet offers the potential for dissident groups in societies to communicate and organise, activities which pose threats to governments - especially in authoritarian nation states. Consequently, it is unsurprising that certain governments have created Internet infrastructures specifically able to monitor use and retain data. The SORM-2 (System for Operational Research Actions on the Documentary Telecommunications Networks) network in Russia, for example, requires ISPs to install surveillance devices and hi-speed links to the Russian Federal Security Service (Privacy International, 2003a). The Ukraine experiences a similar situation, and the Golden Shield system used in China is detailed in more depth below (Ibid.)

Of more current concern is the use of the Internet by terrorists around the world to push their objectives and co-ordinate activities that may lead to the deaths of innocent civilians. The presence of terrorist groups on the Internet is growing, and is increasingly sophisticated. While the threat of Cyberterrorism is perhaps exaggerated in the press (Forno, 2002), terrorists have turned the Internet to their advantage with a fluid and dynamic array of web sites that are able to aid organisations in carrying out a number of comparatively mundane tasks. Terrorist web sites play a game of cat and mouse with security forces, appearing and disappearing, or frequently changing their formats. The types of activity undertaken seem to be fairly uniform, according to a recent report from the US Institute of Peace (Weiman, 2004). Web sites are used for recruiting, propaganda (and the influencing of international opinion through grisly online footage such as the beheading of US citizen Nicholas Berg in May 2004), psychological warfare, networking, fundraising, co-ordinating actions, data mining and the sharing of this information. These last two activities are probably what worries governments most, with US Secretary of Defence Donald Rumsfeld on record as saying 80% of what terrorists need to know to plan attacks can be found on the web via publicly accessible databases (Ibid, p7). Terrorists finding and sharing this information worry government security agencies to the extent that the monitoring of Internet use has increased greatly since the terrorist attacks of 2001. This hysteria extends to the press coverage of the war on terror, creating an environment where the Internet is demonised and any government interference with its running is more easily carried out (BBC, 2001).

When discussing the issues of Internet surveillance and terrorist use of the Internet it is possible to lose sight of the end providers of Internet access such as libraries. Surveillance equipment is often implemented at a network level, making it appear distant from public access PCs in libraries, and terrorist webmasters are unlikely to use public Internet facilities to code web sites and update web pages. To imagine this would be to miss the point however, for the consequences of surveillance do affect the environment in which individuals access the Internet in libraries. Combating terrorism activities on the Internet comes with costs, as both authoritarian and non-authoritarian governments can take advantage of the situation to change the infrastructure of the Internet to best suit their ends.

As pointed out in Chapters Three and Four, access to the Internet in libraries takes place in a different privacy environment to the physical library. Privacy from the librarian, or from those with access to library files, is very different - more so than in libraries

dealing with solely printed publications. In the digital environment of the Internet access to usage records is made simple, for it is easier to monitor email and use of the World Wide Web, and archiving user activity is straightforward. Libraries are able to monitor and store Internet requests for information and form a general knowledge of web pages visited. User profiles from sites requiring registration can be archived, along with records of online searches and email logs. Furthermore, library administration software can keep digital records of membership files along with records of document loans or electronic publications consumed. It is possible to build up a considerable profile of an individual through examination of their library use (Sturges et al, 2003). A good example of how surveillance of the Internet can affect libraries can be seen in the effects of the USA PATRIOT Act passed in the fall of 2001.

September 11th, the Internet and the PATRIOT Act

To understand the PATRIOT act it is first important to understand the changes wrought by the events of September 11th, 2001. The terrorist attacks that day were the catalyst for a shift in the nation state-citizen relationship around the world. While Giddens (1989) discusses the need for the nation state to survey its population in peacetime in order to ensure that each individual citizen receives his or her due regarding benefits and rights, he also goes on to detail how, in times of war, the state will defend its borders – and population – through the use of diverse methods. These methods will often involve surveillance of some description, and it might be that civil liberties will be curtailed in the short term for long term gain.

Two examples from the United States serve to illustrate the change in situation regarding freedom of expression and privacy. Immediately following the September 11th terrorist attacks White House spokesman Ari Fleischer declared that "all Americans…need to watch what they say, watch what they do", showing for the first time an official viewpoint that there may be some forms of behaviour more acceptable than others during the aftermath of a crisis (Pittman, 2002). The second example is the comments of US Attorney General John Ashcroft referring to those who raised concerns regarding the loss of civil liberties following the terrorist attacks. By stating: "…to those who scare peace-loving people with phantoms of lost liberty, my message is this: your tactics only aid terrorists, for they erode our national unity and diminish our resolve", Ashcroft is indicating that civil liberties will take a backseat in the US administration's response to the events of September 11th (New York Times, 2001). Those who complain about the loss of liberties are playing into the hands of the terrorists. It is more important, he seems to be saying, to concentrate on tracking down terrorists and preventing future attacks. To do so, some civil liberties will need to be given up.

Therefore, while individual activity on the Internet may have been of interest to authorities before September 11th, very soon after it many governments began to alter legal frameworks in order to facilitate access to peoples' online communications. The Internet prior to the terrorist attacks was an optimistic place – soon after it became associated with the covert activities of terrorists who used its anonymity to carry out horrendous crimes. The Internet began to show a dark side, and mass media were quick to highlight the dangers of an unregulated online environment (RSF, 2004d). Soon afterwards the Internet privacy environment around the world began to change substantially.

In the last three years systemised efforts have been made in three specific areas relating to the online environment. In the name of the war against terror and the protection of national security, previously unpopular legislative proposals have been re-introduced that override and weaken existing data protection legislation. First there has been continuing progress towards the creation of a data retention structure, both at national levels and also through international co-operation. This means the preservation of Internet use records by ISPs for specific periods of time mandated by law. These records contain information on web sites visited and individuals emailed, and are to be made available to law enforcement agencies on request. Worries of 'purpose creep' have been expressed due to the increased sharing of this data among a variety of government agencies (Privacy International and Electronic Privacy Information Center, 2002). Secondly, in many countries a system of online surveillance has been instituted, or expanded, to go alongside data retention, and communications between persons considered to be suspicious are monitored through the online equivalent of wiretaps. In most cases, judicial oversight of these proceedings has been lessened and the breadth of application increased with more agencies able to use 'generic' warrants that can be served on multiple service providers. Finally, there has a trend to re-evaluate what resources are made available online and to remove materials from the Internet on the grounds that terrorists should not be able freely access sensitive information relating to national security. In the US, the type of information being removed from web sites ranges from risk management plans providing information about the dangers of chemical accidents to university research on online maps (Blumenfeld, 2003; OMB Watch, 2002).

These actions come together in what is called an 'Anti-terror' package, a piece of legislation which supposedly provides a government with the tools to combat terrorism in the information age. The rationale behind these acts is the knowledge that terrorists, especially in the case of the September 11th attacks, are using online communications to plan atrocities. Terrorists in Florida supposedly used library computers with Internet access in the run-up to the World Trade Centre attacks (Manjoo, 2001).

It is therefore unsurprising that the United States passed the most influential anti-terror measures soon after the terrorist attacks. The USA PATRIOT Act is a very broad anti-terror package that was passed in October 2001[32]. Section 215 of the act is of most consequence to librarians, as it gives federal investigators greater authority to examine all book and computer records at libraries - without demonstrating any suspicion that their targets are involved in espionage or terrorism (Lawyers Committee for Human Rights, 2003). While investigators are required to get a search warrant from a federal court before seizing library records, those proceedings are secret and not subject to appeal. The act imposes a gag on libraries that provide information, making it a crime to reveal that the FBI has searched or seized customer records. Any librarians who speak out about FBI intervention can be subject to prosecution.

The American Library Association reacted to the PATRIOT Act by denouncing it and seeking to have sections of it amended. So far, according to the ALA web site, over 50 library associations across the US have added their support to this position (ALA, 2004). In many libraries, signs have gone up warning users that their activities could be

[32] The USA PATRIOT Act is an acronym for 'Uniting and Strengthening America by Providing Appropriate Tools Required to Intercept and Obstruct Terrorism' (Electronic Privacy Information Center, 2001b)

monitored by federal agents. Librarians are taking steps to protect user privacy by avoiding the creation of information that could personally identify patrons. The idea is that information that is not created cannot be collected. Equally, as revealed by a US participant in the roundtable discussion that took place in Berlin, it is also worth noting that there are some librarians who are keeping as much information as possible to assist law enforcement agencies in the war against terror.

To restore a more open information environment, lawmakers from both sides of the American political spectrum, endorsed the 'Freedom to Read Protection Act' which also had the backing of the ALA and the American Booksellers Association. This amendment proposed exempting library and bookstore records from the PATRIOT Act but it failed to clear the US Congress in July 2004 (Hamilton, 2004). ALA opposition to the PATRIOT Act has been consistently firm but up until September 2003 it was very difficult to assess to what extent the act has been applied in libraries due to the gag order that prevents individuals from going public with the information. Requests by civil liberties groups for information on its use produced little except for an admission from security agencies that some investigation into library records had taken place. Surveys undertaken at the University of Illinois in 2002, however, showed that since September 11th 2001, 545 libraries out of 1505 surveyed had been approached by law enforcement agencies, including the FBI, for information about patrons' reading habits and Internet preferences (Estabrook, 2003; Kranich, 2003).

Despite these findings John Ashcroft, the US Attorney General, declared, in September 2003, in response to an enquiry by the ALA president, that Section 215 of the Act had not been used once to request records from libraries (ALA, 2003c). The decision to release this information came after Ashcroft, as part of a nationwide tour to promote the PATRIOT act, accused the ALA and other critics of 'baseless hysteria' regarding the anti-terror law (Lichtblau, 2003). Furthermore, a spokesman for the Justice Department declared the library association had been duped into mistrusting the government. The report on the use of Section 215 surprised many observers due to statements issued by the Justice Department over the previous two years (ALA, 2003). In light of the confused situation regarding application of section 215, the ALA has begun plans for a nationwide survey assessing the impact of the PATRIOT act on libraries. The survey will be completed during 2005 (Schneider, 2004).

Global anti-terror legislation and Internet surveillance worldwide

The PATRIOT Act has been in force for nearly three years at the time of writing and has influenced many countries' anti-terror legislation - Kenya's anti-terror bill, for example, contains a definition of terrorism that is lifted directly from its American cousin (Privacy International, 2003a). With regards to the Internet, new anti-terror laws mainly concentrate on data retention or interception of communications, although many countries are concentrating on both. In Europe, new laws were passed in France, Spain, Denmark, Germany, Italy, United Kingdom and Russia. Russia has attempted to ban all forms of extremist activity on the Internet with a very vague definition of 'extremism' that includes terrorist activity. Prevention of terrorism has also been cited as the reason to pass new laws in South Africa, India, Philippines, New Zealand, Columbia, Cuba and Canada. Further vague definitions of 'terrorist' are found in the Philippines law, and also in Tunisia where the government monitors users of 'subversive' web sites (RSF, 2003d; Wimmer et al, 2002).

It would be wrong, however, to think that the surveillance of Internet use is a phenomenon born out of the attacks of September 11th. What those events did was give governments interested in retaining control of information flow an excuse to introduce tighter restrictions on Internet information seeking. Previous policy proposals for surveillance were re-introduced and expanded and, in the same way that the period between October 2001 and June 2004 saw the use of Internet filtering at a national level slowly increase to worrying levels (see Chapter Five), the same period has also seen consolidation and extension of online surveillance in many countries around the world. The same mailing lists and sources used to detail the global filtering situation in the previous chapter also provide insight into the structures set up to monitor Internet use. Findings from these sources are briefly summarised below on a regional basis to complement the filtering overview in Chapter Five.

Africa

Internet infrastructure in Africa is still in its infancy and recent reports suggest that the surveillance of Internet use on the continent is not widespread. However, some government influence is felt in the monitoring of web use and communications that occurs in countries such as Tunisia and Zimbabwe. The lack of competition in the telecommunications sector in Africa makes this sort of monitoring easier for governments to achieve, as state controlled ISPs follow the government's access and monitoring policies. Zimbabwe passed the Post and Telecommunications Act in 2000 and tightened it with the Access to Information and Protection of Privacy Bill 2001, authorizing the monitoring of email messages and interception of communications (RSF, 2001f).

The filtering of Internet information in Tunisia was discussed in Chapter Five, and it is complemented by a similarly strict approach to Internet surveillance. Users' online activities are monitored by a special 'Cyber-police' force set up by the government to investigate 'over-active' Internet users, and those who visit sites the government considers "subversive" (RSF, 2003d; Wimmer et al, 2002). The government have been particularly keen since September 11th to crack down on users they believe to be accessing 'terrorist-related' web sites, a wide ranging definition that recently contributed to the arrest and sentencing of six Internet users to between 19 and 26 years in prison (RSF, 2004e). In Egypt, where all the ISPs run through the state telecommunications company, the government also has a full-time unit devoted to monitoring Internet use in real time. While police officers mainly target visitors of pornographic web sites, they have in the past carried out elaborate scams to trap and arrest homosexual Egyptian Internet users (RSF, 2003d).

Asia

Along with filtering, surveillance of web use in the Middle East and Asia is fairly common. Pakistan and India monitor users of cybercafes, requiring users to provide proof of identity and address before use (Index on Censorship, 2002b; RSF, 2004f). Online communications in Russia and Pakistan are monitored by security forces, posing a serious threat to freedom of expression (Privacy International, 2003a). Often this monitoring is made easier, as in the case of Laos or Vietnam, by the government controlling the country's ISPs (Kalathil, 2001; Sheeres, 2002). In these countries prison

sentences can be expected for individuals the authorities find to be spreading or accessing anti-government materials. The Maldives is another example of a country where freedom of expression on the Internet is severely restricted. President Maumoon Abdul Gayoom, who has ruled since 1978, refuses to allow his critics to use the Internet to oppose him. In 2002 the editors of an emailed newsletter were jailed for life for disseminating information critical of the regime (RSF, 2004g).

In the Middle East, Bahrain, which has previously blocked sites critical of the ruling family and blocked opposition web sites in the run up to October 2002 elections, has a culture of web surveillance (Sussman, 2001). Iranian authorities also monitor Internet use for subversive activities, paying particular attention to reformist media and journalists who criticise the authorities (RSF, 2004h). Arrests and jail sentences are not uncommon in Iran for online critics, and a similar situation exists in Syria where authorities monitor email (RSF, 2004i). What can be seen in the Middle East region is a conflict similar to that found in countries like China – the need to open up to the Internet era while retaining a balance that protects the prevailing power structure, in this case the authority, morals and culture associated with Islam and Arab society. To this end governments, in collaboration with religious authorities, are keen to remain in control of what is available for accessing and who is trying to get round restrictions.

As with filtering, the most efficient template for Internet surveillance in the Asian region can be found in China. Internet use in the country has grown to a point where filtering out all objectionable material is not enough if the government is to remain in control of online information flow. To complement the system of filtering described in Chapter Five, China employs some of the most sophisticated surveillance measures to monitor dissident activity on the Internet. 'Golden Shield' is a sophisticated system of monitoring and filtering that takes place at the level of the individual user (Walton, 2001). Golden Shield is different to the Great Firewall, for it is a surveillance technology built into the network, not on top of it. This is a move from technology at the national level to levels of public access or peoples' homes. It is a huge surveillance architecture designed to locate individuals circulating pro-democratic or subversive material which are crimes punishable by prison or even death. Golden Shield links national, regional and local security agencies in a database-driven remote surveillance system that provides access to records on every citizen at the same time as linking to a vast network of security cameras. Very recently the system appears to have been expanded to allow mobile phone service providers to police and filter mobile phone text messages for content unacceptable to the authorities, further evidence of the government's desire to control electronic information flow (BBC, 2004c).

The effects of Golden Shield on freedom of expression in China can be seen in the number of dissidents in prison for Internet-related offences. Reporters Sans Frontiers estimate that at the start of May 2004 there were over 60 individuals in prison for offences that ranged from posting critiques of government policy online to disseminating materials advocating democracy (RSF, 2004aj). As reported in Chapter Five, a cyber-police force consisting of up to 30,000 people monitor both Internet content and user activity, removing controversial messages and reporting subversive behaviour. This makes interventions such as those made by 22 year old Liu Di (who posted pro-democracy messages on an Internet forum, and who was imprisoned for over a year as a result) extremely risky.

Perhaps the most disappointing thing about the Golden Shield system is that Western software companies have helped to build the infrastructure that monitors online activity. China's emerging Internet economy is obviously too large an opportunity to ignore, regardless of the human rights issues, and well-known global companies are making profits as a result. Internet users will have their movements tracked by software that has been developed by companies such as Nortel Networks of Canada and Microsoft, Websense, Cisco Systems and Sun Microsystems in the US in collaboration with the Chinese authorities (Amnesty, 2002). In response to an Amnesty International report criticising these companies for involvement with a repressive regime, both Cisco and Microsoft claimed a neutral stance, pointing out that they have no control over how their technology is used (Amnesty, 2004). In light of Chapter One's discussion of the technological determinism versus the social neutrality of technology, it appears that big software companies wish to have it both ways – for while Microsoft is keen to place its technology in libraries in Chile or Columbia to actively encourage learning and access to information it is also happy to turn over technology and claim no responsibility for its use in China. This disingenuous position leads to the impeding of user privacy in places like China and ultimately the curtailing of freedom of expression.

Europe

Europe's advanced levels of Internet use are found in a climate where governments are becoming keener to retain more control of Internet traffic through data retention. Hungary is a case in point, where concerns have been raised regarding the increased interest of government security forces in online data over the past three years (Horvath, 2002). Belgium has had a law mandating Internet data retention since 2002 and in Denmark the 2002 Anti-terror act included similar measures. While Austria, Finland, Germany, the Netherlands, Sweden and the UK are the few remaining countries in the EU without any mandatory provisions, most of these countries have proposals underway (European Digital Rights, 2004[33]). There is a great opposition in Germany to data retention, regardless of the government's position but elsewhere, in France, for example, web hosting companies must preserve data so that web site creators can be identified (Ibid; Privacy International, 2003a). In the UK a significant piece of legislation was passed in 2000. The Regulation of Investigatory Powers (RIP) Act requires ISPs to install software that would enable police monitoring of subscribers' communications traffic (Sturges et al, 2003). Within the last year a voluntary code has been introduced asking ISPs to keep this information for 12 months. Previously only billing information was held. If communications intercepted at any point are encrypted, encryption keys must be given up on pain of imprisonment. On top of this, employers have the right to monitor workplace communications without the consent of workers. After September 11th the UK government attempted to expand the act to enable blanket retention for all telephone and Internet users in the country. The most controversial aspect of this expansion - dubbed the 'Snooper's Charter' - was the extent to which information gathered could be shared amongst government departments, for it was envisaged that large numbers of departments not necessarily connected with law enforcement – such as the Food Standards Agency - being able to access communications data (Millar et al, 2002). Permission of a judge would no longer be needed to access this data. Following an outcry in 2002 several proposals were dropped from the Act but what remained has stayed controversial to opponents (The Guardian,

[33] Note: this refers to the European Union before the expansion of May 2004

2002b). Providers of access, such as libraries, are not explicitly referenced in the RIP Act, or in the continuing proposals for data retention, but the details of library users' online information-seeking activities would undoubtedly be covered due thanks to libraries' reliance on ISPs of some description.

At a regional level, the European Union reversed its previous position on data retention in May 2002 and passed the 'EU Electronic Communications and Privacy Directive'. Each EU government should enact laws to retain "traffic and location data of all people using mobile phones, SMS, landline telephones, faxes, emails, chatrooms, the Internet, or any other electronic communication devices, to communicate" (Privacy International, 2003a, p134). Law enforcement agencies are to be granted access to Internet traffic and communications data previously only kept for clarifying customer bills. The governments of Belgium, France, Ireland, Sweden and the UK put the proposal forward and it is controversial for a number of reasons, not least because President Bush requested the EU implement these powers – that even the USA PATRIOT act does not have - in October 2001 (Statewatch, 2002; Statewatch, 2004b). The European situation is an example of how terrorist activity is driving regulation of the Internet, and fresher data retention proposals were endorsed at a March 2004 EU summit as part of a raft of measures to combat terrorism in the wake of the Madrid train bombings. Critics of these proposals have maintained that existing laws were adequate for combating terrorism and Statewatch has opined that the new proposals are being driven more by a desire to combat general crime and increase surveillance of populations (Mellor, 2001; Statewatch, 2004c). Internet traffic data will now have to be held for longer periods than a previous two month limit– perhaps for as long as one to three years, or longer, should member states decide (Statewatch, 2004b).

Latin America and the Caribbean

Data retention and monitoring appears not to be widespread in Latin America and the Caribbean, although in Argentina ISPs must retain Internet user data for two years should it be needed for a criminal investigation (Privacy International, 2003a). The main concern in the region is posed by the control of the Internet in Cuba, where the government complements its policy of restricting access to the Internet with surveillance of online activities. Indeed, during a crackdown against dissident journalists at the beginning of 2003, most indictments contained references to use of the Internet for subversive purposes. According to the Cuban government there are 480,000 email accounts in use on the island, but Reporters Sans Frontiers (2004h) claims that these accounts are, in effect, a national email service that is closely monitored by the country's ISP. Registration for the service, in the form of ID and provision of a valid address, is required. To use the same public access Internet points available to tourists, and therefore engage in email communication with the outside world, Cubans need further official permission – which is not easily granted. As unauthorised email use carries with it the threat of imprisonment, those individuals who do attempt to use external email services are running a serious risk. To further restrict unauthorised use the Cuban government has a pending piece of legislation that will impose a complete ban on the use of ordinary phone lines to connect to the Internet. The decree states that the authorities will "use all necessary technical means to detect and prevent Internet access" by unauthorised citizens (RSF, 2004c).

Northern America and Oceania

The impact of the PATRIOT Act on the information-seeking environment in the US is discussed above. To the north, in Canada, the government has proposed a data retention structure similar in some ways to the UK's RIP Act. Canadian ISPs must ensure that the technical means exists on their systems to provide national security officials with access to user data, should they need it. The government wants all information regarding Internet activity to be stored for six months, and information can be kept for longer periods if a court order is obtained. Privacy concerns similar to those voiced in Europe by Statewatch and Privacy International have been heard from Canadian Internet user groups (RSF, 2004j).

In Oceania, the government in New Zealand has passed legislation requiring ISPs to install surveillance devices onto networks in order to help law enforcers capture private emails and messages (RSF, 2003d; RSF, 2004k). While the government claims this legislation will simply bring New Zealand into line with other countries, it has been noted that it bears a resemblance to the much-criticised Communications Assistance for Law Enforcement Act in the US (Email from Chiu, 2002c).

Towards a regulated Internet

The impetus to survey described in the regional summaries above is coming from the governments of nation states. While the war on terror has provided an adequate cover for some controversial proposals, the actions of governments around the world corresponds with the thinking of Giddens (1989) regarding control of information flow, but also Castells, who points out the state's role in accelerating or decelerating technology diffusion in light of a country's "history, culture, institutions and their specific relationship to global capitalism and information technology" (Castells, 2000a, p13). The shaping of technology development is not only taking place at a national level however, and alongside the anti-terror acts and actions specifically relating to tackling the war on terror it is possible to see another trend emerging on the Internet that has consequences for the way libraries and their users access information. The organisers of the World Summit on the Information Society are calling for a new framework of global governance for the Internet (Utsumi, 2002). Moves towards regulation by governments and regional administrative bodies are occurring in nearly all sectors of the Internet, from the criminal investigations to e-commerce. For example, the EU is moving closer to ratifying the EU Convention on Cybercrime, a piece of legislation designed to combat online fraud, hacking and terrorism but under attack from privacy groups for its vague limits on police surveillance powers and unwarranted levels of data collection and storage. Opponents say the Convention will render encryption of personal correspondence meaningless, as authorities can order encryption keys to be handed over on demand, and legislate for the sorts of data sweeping and mass Internet surveillance outlawed under the European Convention on Human Rights (Jayasekera, 2002). Also controversial is the proposed criminalizing of online hate speech due to the problems this poses to freedom of expression. In countries such as the United States, who helped draw up the treaty and have been invited to ratify it, the hate speech portion of the Cybercrime treaty is seen as a threat to the principles protected under the First Amendment to the US Constitution.

While the Cybercrime Convention was on the European Union's agenda prior to the September 11th attacks, future legislation will undoubtedly be influenced by the events of that day. The war on terrorism has bred a feeling within the United States administration that larger and more elaborate methods should be in place to prevent future terrorist attacks before they occur. In turn, business opportunities are being offered to the companies that can make this happen, and consequently similar technology is being made available to countries with poor human rights records on the grounds that terrorism must be tackled effectively. This corresponds with the relationships outlined in Giddens' institutional dimensions of modernity and dimensions of globalisation discussed in Chapter One. The relationship between the military-industrial sector of society and the nation state's need to survey is healthy and alive in the context of the war against terror. As mentioned above, private companies are involved with certain governments' efforts to regulate the Internet. Over the last twelve months, however, the demand for more invasive technologies caused by the PATRIOT Act has caused more and more companies to enter the field of surveillance software provision (Email from Peizer, 2004; Mieszkowski , 2003;). New security requirements in the act have created demands for software compatible with government systems and firms in the private sector have rushed to buy these new products. Financial institutions and universities have to check user and foreign student records against government terrorist lists, which creates a flow of information between the private, academic and government sectors.

This is of consequence in light of the much-criticised Total Information Awareness (TIA) project that was being developed by the US Defence Advanced Research Project Agency (DARPA). This project was aiming to mine a giant database of citizens' personal details such as Internet use records, telephone records, credit card and banking transactions and travel documents so as to help track and prevent potential terrorist activities (Markoff, 2002). Such a project would break down the walls between commercial and government databases and, in light of the PATRIOT Act, it is likely that library use records would be included in the database. TIA came under so much criticism from all sides of the political spectrum it was at first renamed and eventually abandoned. However, its very development is an indication of current thinking, and in Florida another experiment in total information awareness was underway by the end of last year (Wired, 2004). This new project is named the MATRIX (Multi-State Anti-Terrorism Information Exchange) and it aims to let investigators find links among people and events by combining police records with commercially available collections of personal information about most American adults. Although the current status of the project is unclear, demand for the privately developed product amongst police forces in other US states is high, and the Homeland Security Department is already thinking of expanding the scale of the project (Ibid).

Internet data retention and libraries – an investigation

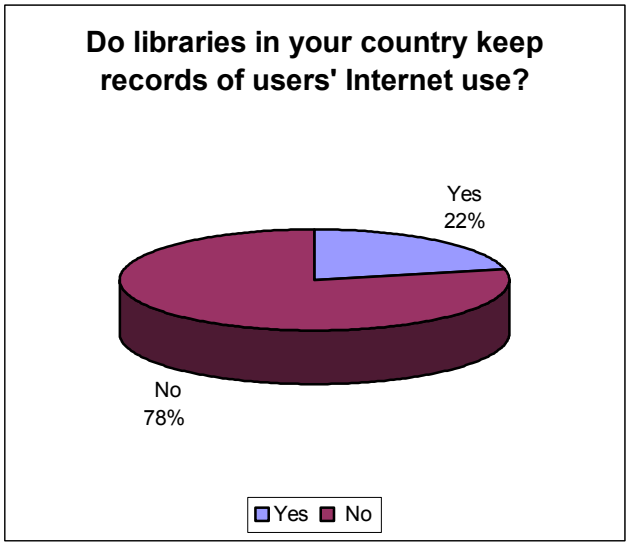
"Libraries and information services should respect the privacy of their users and recognize that the resources they use should remain confidential" The IFLA Internet Manifesto (IFLA, 2002)

Why does this matter for libraries? If it is considered that the first anti-terror package in the US begot the raft of measures seen in many other countries, then it is instructive to monitor the situation in the US to see what else might follow. While new regulations

such as the Convention on Cybercrime may have little immediate effect on the way that libraries provide services, the change in the information-seeking environment caused by more regulation of the Internet will mean libraries have to keep up to date on exactly how users will be affected. Increased surveillance of activities can act as a brake on users' freedom of expression and prevent the seeking of certain types of information for fear of being flagged as a potential lawbreaker. Libraries will always operate according to national information policy but at the same time the library profession is explicitly concerned with protecting the privacy of its users. It is interesting therefore to examine the extent to which libraries around the world are protecting user privacy on the Internet.

Question 3 of the empirical survey of IFLA member countries carried out in 2003 examined user privacy on the Internet and attitudes of the respondents towards privacy and freedom of expression. In light of Internet regulation since September 11th, and the library community's commitment to user privacy that is seen in such statements as the IFLA Internet Manifesto, an examination of current library attitudes to privacy – and whether these attitudes translate into practice – would highlight the extent to which the monitoring of Internet activity is a problem for library users. Question 3a therefore asked if libraries in the respondent's country keep records of users' Internet activities. It is a generally phrased question, not specifically asking the respondent about research or public libraries. What exactly constitutes 'records' is also open to question, for it could be sign-in sheets for users, or logs of web sites visited on the Internet. And, of course, while libraries themselves may not believe they keep any records it is entirely possible that the ISP that serves them will retain some sort of record of use. The important aspect is to assess whether a record of some description is actively kept by libraries, thus storing knowledge of users' activities that could be accessed at some point in the future by law enforcement agencies or another third party.

83 countries responded to this question, and Figure 22 below shows the overall results:



Global results - 83 countries*

*No answer from Canada, Columbia, Gambia, Netherlands Antilles, New Zealand and the Slovak Republic

Figure 22: Do libraries keep records of Internet use?

As the chart shows, over three quarters of the respondents do not keep records of users' Internet activities. This would suggest that the privacy of library Internet users around

the world is protected to an extent, in that records of their use are not archived and open to inspection at a later date. Data retention does not appear to be too significant a problem in the international library community. There are, however, 18 countries that did say they kept records. These countries come from all the regions of the world save North America:

Region	Countries	Proportion of responding countries
Africa	Angola, Egypt, Ghana, Niger, South Africa	5/16
Asia	Lebanon, Russian Federation, Thailand, Uzbekistan	4/18
Europe	Belarus, Estonia, Lithuania, Vatican City	4/34
Latin America and the Caribbean	Aruba, Nicaragua, Panama	3/14
Oceania	Fiji, New Caledonia	2/5

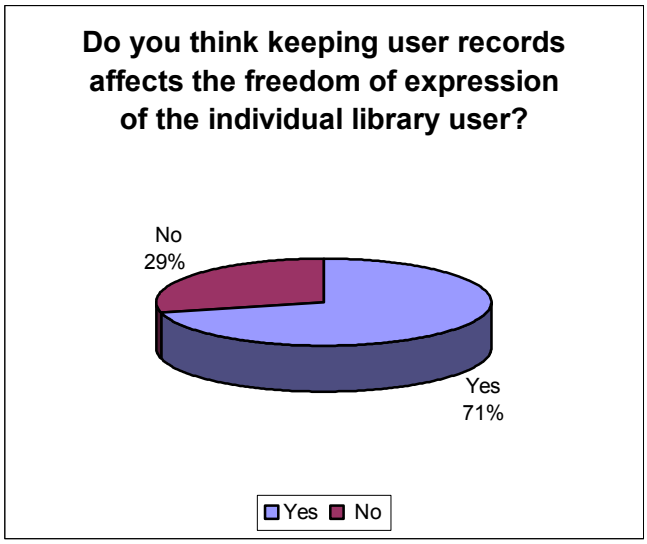
Table 14: Countries where libraries keep records of users' Internet activities

From these findings it is difficult to draw any conclusions regarding whether or not Internet user privacy is particularly at risk in one region of the world over another, but it is interesting that three out of the four countries in the European region used to be part of the USSR, a former country with a tradition of citizen surveillance, even in libraries (Sturges 1995). Uzbekistan, another country that was in the former USSR, also indicated it retained Internet user records. The Russian Federation's response to the question also declared that records of user Internet activity are kept and it might be speculated that a hangover from the years of the KGB still exists to an extent. On the other hand, Latvia, Moldova and the Ukraine were former USSR states, while Slovakia and, to an extent, Slovenia, experienced Soviet-influenced rule. All of these countries responded in the negative when asked about the keeping of Internet records.

What might be considered more interesting, and perhaps shed more light on how the participants interpreted the question, are the responses from countries where data retention and Internet surveillance have been well-documented by human rights groups. Countries such as China and Zimbabwe answered that libraries did not keep records of Internet use, and, while this may be true, it would appear that some degree of user monitoring is occurring further 'upstream' on the network. Let not monitoring and data retention be confused however, for while both activities will affect freedom of expression on the Internet, they are separate endeavours – albeit ones whose paths will likely cross at some point. China, for example, is moving towards a real-time Internet monitoring system while the countries of the European Union are concentrating on retaining data that can be examined after the event, as it were. This situation makes the responses of countries such as Belgium or Denmark interesting, for these are countries where data retention laws have been passed in recent years. In theory, and depending on the legal status of whatever ISP supports library Internet access, any Internet use in libraries in these countries is being retained further upstream by law. Libraries themselves may not be actively recording Internet use, but a third party is, and will have

access to it. A similar situation could come into play in other EU countries, especially those pushing data retention measures since September 11th. It might be suggested, then, that as respondents from Belgium and Denmark (and the other countries about to embark on national data retention such as Germany, Sweden or the UK) indicated libraries did not keep user records there is only a concentration on what is going on inside the four walls of the library, and less attention paid how digital information coming out of libraries is being held by commercial or government ISPs, depending on the situation.

Due to this situation, Question 3a might be accused of not quite getting to the point about the extent to which data retention is taking place in libraries around the world. On the surface the situation seems encouraging but this is perhaps because processes of upstream data retention are not yet fully understood by librarians. The second part of the question sought to address the issue from a more ethical point of view by asking respondents if they could see a link between the keeping of Internet use records and freedom of expression. This question was posed because it could shed some light on respondent's motivations for not keeping records, for it could be that records of use are not kept because of resource constraints, or because it had simply never occurred to the country's libraries. The question sought to assess the extent to which libraries linked the concepts of user privacy and freedom of expression, and the answers could be compared with another question in the survey regarding adoption of the Internet manifesto to see if concepts in the Manifesto bore fruit in practice. The results are shown below:



Global results - 83 countries*

*No answer from Canada, Columbia, Gambia, Netherlands Antilles, New Zealand and the Slovak Republic

Figure 23: Does keeping records affect freedom of expression?

The results indicate that almost three quarters of the respondents believed that the keeping of users' Internet records affects an individual user's freedom of expression. This indicates clearly that in the minds of the majority of respondents there is a link between user privacy and the freedom to express oneself in the choice of one's information resources.

The question was not without some further interesting aspects however. Table 15 below concentrates on those respondents who did not believe the keeping of records affects

freedom of expression. It also combines some of the answers from the previous question (3a), and brings in responses relating to adoption of the IFLA Internet Manifesto.

Region	Libraries keep user records	Did not believe this affects freedom of expression	Did believe this affects freedom of expression	Adopted Internet Manifesto	Intends to adopt Internet Manifesto in next two years
Africa	Angola, Egypt, Ghana, Niger, South Africa	Angola, Ghana, Niger	Egypt, South Africa		Angola, Ghana, Niger
Asia	Lebanon, Russian Federation, Thailand, Uzbekistan	Thailand	Lebanon, Russian Federation, Uzbekistan		Lebanon, Russian Federation, Thailand, Uzbekistan
Europe	Belarus, Estonia, Lithuania, Vatican City	Estonia, Lithuania, Vatican City	Belarus	Belarus	Estonia, Lithuania
Latin America and the Caribbean	Aruba, Nicaragua, Panama	Aruba, Panama	Nicaragua	Nicaragua	Aruba
Oceania	Fiji, New Caledonia	Fiji	New Caledonia		Fiji, New Caledonia

Table 15: Libraries keeping Internet user records and freedom of expression

The link between the keeping of records and freedom of expression was clearly not seen by ten of the countries covered in the survey. Angola, Aruba, Estonia, Fiji, Ghana, Lithuania, Niger, Panama, Thailand and Vatican City kept records of Internet activity but did not believe this affected users' freedom of expression. This response is especially interesting if it is considered that all of these countries except Panama and Vatican City (where there is no public Internet access in the library system) intend to adopt the IFLA Internet Manifesto – with its commitment to protecting Internet user privacy – in the two years following the survey. This situation gives pause for thought, for it shows that attitudes to privacy differ throughout the international library community. Although the great majority of respondents linked the two concepts it appears that there is still work to be done before the privacy of all library Internet users around the world can be protected. The countries that did not believe a link to exist are at different stages of Internet development, and there appears to be no single factor that groups them together. The African countries, for example, all have an Internet penetration of less than 1%, implying that perhaps information policy is at an early stage of development and data protection and user privacy is a subject not yet on the

agenda. On the other hand, countries like Aruba, Estonia and Thailand all have good levels of Internet access in public and research libraries and respectable Internet penetration levels. It might be, therefore, that attitudes to privacy are more likely to be formed by cultural conditions than information policy – although there is still the anomaly of the countries in the Asian region, like China, where Hofstede's examination of attitudes towards privacy revealed a very different situation to that which existed in e.g. Europe (Hofstede, 2001). It might be expected that countries in this region would see no problem in keeping user records but, in the survey, the Chinese respondent identified the link between data retention and user privacy, as did the respondent from Hong Kong, Japan and Singapore.

In spite of such assumptions as this, at some point cultural conditions will be incorporated into, or expurgated from, information policy. This can be used to explain the responses from 8 countries (Belarus, Egypt, Lebanon, New Caledonia, Nicaragua, Russian Federation, South Africa and Uzbekistan) where, despite respondents believing it to affect freedom of expression, libraries kept Internet use records anyway. While members of the library community might value user privacy as a tenet of the profession, these values may not always translate into the political and legal framework within which libraries operate. The motivation behind the situation in each of these countries is unclear but it could be speculated that data retention is being carried out as a result of legal compulsion. As an aside, the Russian Federation and New Caledonia are two countries where the use of filtering software is widespread despite the library association not being in favour of filtering. If the decision to keep filter or keep records is not in the hands of national library authorities there is likely to be a lot of work before countries such as Belarus and Nicaragua are able to fully implement the Internet Manifesto that they have already adopted.

There were also some countries who, while they did not keep a record of users' Internet activities, nonetheless saw no problem for freedom of expression if this did happen. These countries were Benin, Cape Verde, Chad, Namibia, and Swaziland in Africa; Azerbaijan, Macao, and Nepal in Asia; Bulgaria, Moldova, and Poland in Europe; Bolivia, Guatemala, and Mexico in Latin America and the Caribbean; and New Zealand in Oceania. Of these 15 countries, three – Bulgaria, Moldova and Mexico have adopted the Internet Manifesto. Again, it would appear that, even if the majority of the international library community saw complications if records of users' Internet activity were retained, there still remain different attitudes to privacy and freedom of expression throughout the profession.

Conclusion

Overall, the results of Question 3 show that the keeping of users' Internet records is not very widespread throughout the library community at the moment. Furthermore, it shows that most respondents see a link between the keeping of user records and freedom of expression or, alternatively, most respondents were able to affirm a link between user privacy and the freedom to express or seek out what may be controversial ideas without fear of reprisals. What is still unclear, however, is the extent to which issues of Internet privacy are even on the agenda in some of the responding countries, especially when the levels of Internet development outlined in Chapter Four are remembered. In some countries it might be that these issues are being debated and discussed with little or no input from the library profession, a situation mentioned by attendees at the Internet

Manifesto Workshop in Uganda and more likely in countries where the use of the Internet is at the very bottom of its upward curve of diffusion.

In other more developed countries there are also issues raised by the findings of Question 3. As was shown in the overview of global data retention and Internet surveillance, there already exists legislation in some countries that will affect libraries, and there is legislation pending in many other places that will continue to keep issues of user privacy on the agenda. Libraries may state that they do not keep user data but, despite best intentions, the situation may be out of librarians' hands. Governmental preferences appear to be driving the development of the Internet's surveillance capabilities at this point. As mentioned in Chapter 1, the sustinance of nation states is the possession of credible defence and war, preparedness for war, and the military-state relationship plays a large part in the continuing persistance of the nation state as an institution of modernity. With change in the global security situation following September 11th 2001 it is unsurprising that governments are looking to secure virtual borders as well as physical ones. New forms of defence, such as the monitoring of Internet use and the retention of user data, are the consequences of this situation, where governments take whatever means they deem necessary to protect populations from future terrorist attacks.

The legal circumstances regarding data retention are currently unclear in many countries as legislators and civil liberties groups engage to resolve differences. How long the current situation of tightened security will continue is unsure, although it is safe to suggest that some countries are happy to be able to paint further intrusion into online activties as an activity designed to protect Internet users from the online workings of the war against terror. With Internet surveillance decisions being taken at a governmental level,it is not obvious how much libraries can do about situations where data is being retained upstream from library computers, on networks over which library professionals have no control. Coupled with this, the involvement of national security agencies in surveillance and monitoring activities is a difficult thing for library leaders to influence, regardless of positions on user privacy. This is not to say it cannot be done – the ALA has teamed up with civil liberties organisations in the United States to fight the corner of library users as best it can. Not all library associations have the resources or the profile of the ALA however, and it will be more of a struggle to raise the issues of user privacy in environments were certain subjects are viewed with suspicion and where the threat of Internet terrorist use hangs over the whole issue. As the European Union's reversal of position regarding data retention shows, governmental attitudes towards Internet use and users can change very swiftly in light of an event like September 11th. While the 'War on Terror' goes on, libraries, as providers of Internet access, will continue to operate in an environment where governments' information policies concentrate on retaining some degree of control over the Internet to best protect themselves from future attacks. User privacy on the Internet will continue to remain hampered by this for some time, regardless of the library profession's attitude to freedom of expression.

Chapter 7 – The Commodification of Information and the Increasing Corporatism of the Internet

Introduction

Chapters Five and Six have discussed the impact of information control and surveillance activities on freedom of access to information and freedom of expression on the Internet. The impetus behind these activities has been shown to come from the nation state, and it is present, to an extent, around the world. While filtering and surveillance techniques differ in substance and degree from country to country, it is clear that since September 11th 2001 the information seeking environment on the Internet is changing to reflect the desires of nation states around the world. Security is the watchword, whether it is the security of minors to search the Internet or the security of the nation itself. Preservation of national identity, as seen in the cases of Cuba or China, is equally important to some governments. Libraries, as part of a nation state's information infrastructure, are affected by this situation and are presented with barriers to accessing information as a result.

As outlined in Chapter Two however, nation states are not the only actors capable of influencing information flow on the Internet on a large scale. Alongside nation states stand the interests of the national and international business community, from domestic companies to multi-national corporations. This chapter aims to show that business involvement on the Internet has the capacity to restrict both freedom of access to information and freedom of expression – regardless of national borders. Restrictions on information access are occurring as a result of a change in the Internet environment caused by the increase in corporatism and the forces of commodification that have begun to influence the Internet over the past ten years. Corporatism is the organisation or control of something by groups who share a common interest or profession. Commodification is the process of developing things, concepts and even people into saleable products, and its influence is beginning to be felt at all levels of Internet activity. Commodification of information, as defined in Chapter Two, is the selling of private information for profit, or alternatively the process of public information being acquired by private firms who then repackage it and sell it back to the public.

Libraries have always been linked to the market for information, whether through the purchase of books and audio-visual materials, or through subscriptions to magazines and journals. While the Internet lived through a period where it was source of freely shared information for users, market activities have gained a higher profile since the mid 1990s as businesses around the world have taken advantage of the economic opportunities available online. Libraries offering Internet access today have to provide information in light of this situation. In this chapter therefore, the results of business involvement are discussed, and the implications for libraries highlighted, from the increases in payment services to the stifling of freedom of expression caused by greater enforcement of intellectual property (IP) rights in the digital environment. The chapter begins by explaining the concept of commodification of information and placing the obstacles discussed in a theoretical context. The concept of the information commons is used to frame the changes to the online information environment, and the threats to the commons that come from businesses are examined. These threats change the way users act online, and they also create specific obstacles to using certain resources. The direct

consequences for libraries are discussed as result of this situation, as well as the indirect consequences for the information-seeking environment on the Internet that is caused by commodification. Finally the chapter considers the current state in the international library community by analysing results from the global survey, and concludes in light of this.

It must be noted that the barriers to information access discussed in this chapter are presented differently than previously, when the barriers of the digital divide, the filtering/blocking of information and the surveillance of Internet activities were discussed in separate chapters. This chapter seeks to make the case that the Internet is increasingly affected by the forces of commodification of information and that these forces manifest themselves in direct and indirect ways, affecting freedom of access to information and freedom of expression. The relationship between the obstacles thrown up is symbiotic and difficult to separate, for the effects of business on the Internet create both an environment for operation and a set of specific economic hurdles to overcome. The same can be said of nation state efforts to control the flow of information on the Internet, in that nation state actions affect both freedom of expression and freedom of access to information. This does not happen to the same extent as it does with the forces of commodification however, for a country that is interested in the security offered by greater data retention does not necessarily combine this with the filtering of information. Chapters Five and Six seperated these obstacles to illustrate this – here the obstacles discussed are combined in one chapter to show how close their relationship is.

This chaper completes the answer to the final research question outlined in the introduction. Following Chapters Five and Six, and complementing the nation state/corporate framework outlined in Chapters One and Two, it outlines how the actions of business are able to create barriers to accessing information resources on the Internet. This chapter looks once more at information resources available via the World Wide Web, but it also considers access to proprietary databases and other remotely accessed information resources. It is interested in how access to and use of these materials can be charged for or restricted by business looking to create, retain or extend market share on the Internet.

The nation state, the global economy and the Internet

While some commentators have questioned the influence of the nation state in a globalised world (Arrighi, 1998), Chapters Five and Six have described the extent to which information flow on the Internet can be manipulated by states that wish to do so. Such manipulation occurs for a variety of reasons, from issues of national security to the protection of national identity. The nation state retains a capacity, especially in countries where control of telecommunications infrastructure remains largely in the hands of the state, to place obstacles in the way of information access. It is able to construct real-time barriers to freedom of access to information through censorship techniques. It is also able to shape the future direction of Internet infrastructure, and with it the future of freedom of expression, through technological controls, although this is more likely in authoritarian countries such as China than in the United States. Castells' (2000a) early thinking regarding the ability of the network to resist interference through the imposition of censorship, for example, can be seen to be less true in certain areas – especially in the case of countries such as Vietnam or Saudi Arabia. It is true that it is possible to route around censorship, and that the technologically gifted users of the

Internet will be able to employ measures to circumvent barriers to access, but it is equally true that to do so under censorious regimes carries with it considerable risks. Certainly it is unlikely that such risks will be carried out using public access computers in libraries.

The Internet is not just a national network however – it is a global network of networks that connects users all over the world. Action can be taken a national level to shape, guide and limit its use by citizens, but actions taken in one country, or by a number of countries, can have a decisive effect on how the Internet develops elsewhere. As has been seen in the spread of anti-terror legislation following the PATRIOT Act, countries often take inspiration from elsewhere when forming and implementing political decisions. This situation also exists in the economic sphere. China, for example, has taken a different approach to Internet development to Cuba or North Korea, acknowledging that the country's development will be best served if an e-commerce infrastructure similar to that found in western countries is constructed (Boas and Kalathil, 2003). The benefits of being in a global economic network facilitated by the Internet are considered by the government in Beijing as being too great to miss out on. In an age of global trade, the Internet lets business be conducted swiftly across borders, and opens up the possibility of economic growth in all sorts of new ways. South Korea, for example, hopes that the Internet will let domestic firms become more competitive in foreign markets (BBC, 2004d).

China's government has consciously decided to let Internet trade flourish and in some countries it is true to say that the future direction of Internet use is almost exclusively decided by the powers of the nation state. In other countries though, especially where capitalism is deeply embedded into the infrastructure of the state, this situation is less true. While the influence of the nation state is still felt, in the form of educational and infrastructural development programmes, or via legislative powers, many countries face a situation where the nation states' twin in globalisation, the powers active in the global economy, are able to bring great pressure to bear on how the future of the Internet will develop. This pressure manifests itself in the same way as corporate powers influence issues from environmental policy to trade agreements (Klein, 1999). Through a concerted agenda of lobbying governmental, regional and global institutions, coupled with private-public co-operation in terms of relevant – in this case ICT – projects, the business sector is able to influence the development of markets, legislation and infrastructure to its benefit.

In order to boost domestic trade in the global marketplace, a competitive online environment is needed, albeit with appropriate protection for companies' business interests. To this end, businesses large enough to compete in, and influence, the global market have endeavoured to shape the online environment to secure the best advantage for themselves. Initially, the Internet proved less than tempting for some major corporations who failed to see its potential. Certainly, Microsoft, one of the biggest players in the global ICT market, could be counted in this category (CNN Money, 1999). But as the dot.com gold rush in the United States continued to surge through the 1990s more online ventures were launched by major corporate players, some of which were successful and others which were not. When the bubble inevitably burst the strongest companies survived and set about making sure that market remained safe for the future.

The increasing corporatism of the Internet environment

The United States is where the growth of Internet-based businesses began, and it also where the increasing commodification of the online environment is best explained. Venture capitalists had tried to make money on the Internet from the beginning, with a race on to find a working business model before anyone else. In the mid-1990s, for example, there was a concentration on attempting to make money out of mass email, or spamming, activities (Benschop, 1997). However, in some ways the Internet may be said to have always been commodified, in that connection via an ISP has always cost money. The difference occurs when a fee is charged for 'access to information' on the Internet, not for simple 'access'. Benschop calls this Cybercapitalism - "(Electronic access to) information is sold as a commodity to those with the ability to pay for it" (Ibid).

While many people may have had the ability to pay for information in the early days of the Internet it proved difficult to find anyone who was willing to. Around 1996 it was becoming clear that providers of information were finding it tough to survive without an income stream and there was to be an impending 'shakeout' (LA Times, 1996). Eventually the hysteria of the mid-1990s regarding the Internet gave way to a more realistic approach to business on the Internet (Wolff, 1998). By 1998 more seasoned business interests were visible on the Internet, shifting control of core infrastructural decisions away from the public sector and using traditional business methods to protect online and offline business interests (Litman, 2002). The Domain Name System (DNS), for example, which allocates domain names to web site owners, passed into the hands of the private sector, along with an understanding favouring the owners of previously registered trademarks. Important patents were granted, such as those covering targeted advertising based on users' clickstream data. Legislation, in the form of the Digital Millennium Copyright Act (DMCA), discussed in detail below, was altered to strengthen the arsenal of tools available to copyright holders to control public use of their works. Litman (Ibid) contends that much of this power shift occurred at exactly the time when media attention was diverted by concentrating on legislation focusing on the dangers of online pornography, and that it was the culmination of the Clinton administration's push to get the private sector to shoulder some of the burden of running the Internet – by trying to make certain aspects of the net attractive to commercialisation, and emphasising how information and ideas could be proprietary.

This situation is the starting point for the increasing corporatism of the Internet. Corporatism of the Internet is "the organisation or control [of the Internet] by groups who share a common interest or profession", most notably by large media organisations (Collins, 1998)[34]. The phenomenon is closely connected with the commodification of information on the Internet, for the groups who share a common interest in this case are businesses who wish to make money out of Internet activities. Barbrook (2000) believes the need for control of the Internet is occurring in response to the failure of companies/ corporations to deal with the reality – such as uninterrupted information flow and the fact that there are no 100% effective technological fixes for protecting copyright - of the Internet's existence. Other scholars, on the other hand, believe that it is not a question of piracy, but a question of competition (Litman, 2002). Certainly in the early days of the Internet, when the one-to-many capability of the medium enabled users to become

[34] Words in brackets inserted by the author

information providers cheaply, or to take the same banner advertising as the big companies when funding was needed, free content in the form of personal web pages abounded. The emergence of a new means of information distribution offered a threat to existing business models that favoured incumbent publishers. Regardless of whether the issue was competition or piracy, the response from large companies was to lobby the US government to increase intellectual property protection, and the Internet's legal and infrastructural setting changed accordingly. Small information providers became marginalised, and large companies began to consolidate their efforts on the Internet (Noam, 2003).

As a result of this, the online environment has changed considerably over the past five years, and evidence points to this change continuing into the future. Radin (2002, p3) states that "The Internet has evolved rapidly from a resolutely non-commercial modality to a largely commercial one". The evidence for this can be seen in the increasing propertisation of knowledge, as evidenced in the expansion of intellectual property regimes in recent years, but also the discourse surrounding online information. Knowledge as a commodity is often referred to as 'content', or 'information property' - an object bearing market value. The rhetoric of online 'piracy' and 'burglary' with regards to the sharing of copyrighted material or the circumvention of technological controls conjures up images of stolen possessions. Property has become associated with 'it's mine, forever' (Lessig, 2002). In the United States especially, the language of debate, even amongst advocates of freedom of expression and the public domain, is in terms of property rights (Von Lohmann, 2002). A conceptual scheme of commodification has begun to be associated with the movement of information on the Internet, and this has consequently enabled a large proportion of the debate about the future of the Internet, especially the public domain aspects, to be talked about in terms preferential to business interests (Radin, 2002).

Commodification of information on the Internet

The process of commodification is not new, however, and has been with society since the invention of the printing press in the 15th century. With the arrival of printing and the disappearance of patronage, authors and publishers suddenly found a wider audience than previously, with an ability to pay for information. Small-scale production eventually gave way to commercial mass media, with larger companies incorporating cottage publishing industries and these companies, in turn, becoming part of huge media corporations. Global publishing, for example, has consolidated greatly over the past ten years (Robinson, 2004). It is perhaps unsurprising that the Internet is experiencing a situation where the smaller information providers are being marginalised by the larger.

In light of this, to what extent is the increasing corporatism and commodification of information on the Internet a problem for the individual user? Chapter Two examined the conflicting utopian and dystopian views of the Internet, and it is helpful to consider these when judging the free flow of information on the Internet. In a utopian Internet there will be a borderless network characterised by open dialogue and co-operation, sharing and self-regulation. The hand of government will be light leading to an atmosphere that encourages freedom of access to information and a healthy public sphere. There will be users, not consumers, individuals who are able to take advantage of the one-to-many capacities of the Internet to take a place amongst Castells' 'Interacting'. Alternatively, a dystopian Internet would see lowest common denominator

content delivered to passive consumers who have little chance of interaction on a wider scale. Advertising and content will combine, fuelling an environment where the bottom line is sales. Thanks to technology that records consumers' preferences everything – from content to users' attention – is commodified.

Castells (2000a) points to the value of information transactions for organisation in the network society. Noam (2002) argues that commodification can make this more of a reality, if transactions of information enable co-ordination of numerous activities involving information flows. Online retailers such as the bookseller Amazon make use of transactional data to make the next visit to the online store more personal, using previous purchase information to recommend other titles that might be of interest. Transactional information flows when used in this way seem to have potential benefit to both consumer and producer alike.

But this creates a problem. The role of the Internet user in such a situation is very much to consume. By doing so, the benefits of the technology are focused on consumption. The huge possibilities for non-commercial production and sharing of information facilitated by digital technology are marginalised in this situation, and the capacity of individuals to affect information flow extends only as far as their next purchase. Technologies that can promote choice instead contribute to the growth of an industry in personal profiling and data collection, aggregation and management, which is then used to support industries selling products to users.

When these information flows refer to the sale of jeans, cars, rare vinyl records or household appliances there appears little call for libraries to be worried about the trends of commodification. But there are no barriers to applying transaction costs to everything in the digital age, placing an advantage in the hands of content owners. If the information in question is less commercial, and if it resides in an environment where providers of information are limited and the public domain is squeezed by commercial interests, then it is quickly apparent that sections of society who cannot contribute to information flows in the first place due to the lack of financial resources will be marginalised. The voice of those without the money to go online or pay for online services will not be heard. Individuals' freedom of access to information and freedom of expression will be restricted in such circumstances.

The increasing corporatism of the Internet goes hand in hand with the increasing commodification of online information. The environment in which information-seeking takes place is affected by corporate interests shaping the Internet infrastructure through legislation, privatisation of public information assets and acquisition of an ever larger percentage of the Internet's infrastructure. This is the environment in which information seekers seek to exercise their freedom of expression – to disseminate information or to decide what to access. The resulting situation throws up direct obstacles to accessing information such as payment mechanisms or intrusive registration processes. The user's freedom of access to information is hampered by these obstacles depending on their financial resources and their willingness to divulge personal information to the private sector. In the same way as the nation state is capable of hampering freedom of access to information and freedom of expression through direct and indirect barriers, the private sector is able to do the same, to a greater or lesser extent, around the world.

The rest of this chapter provides an overview of how this type of environment is currently being constructed online. The process of construction is not yet complete, but it is advanced. *The Cyberskeptics's guide to Internet research* is a journal providing comment and information on free, high-value web sites. Until May 2004 only sites with substantial free content were featured in the journal but a recent editorial noted that due to the rapid changes in the Internet environment it was no longer possible to continue with this editorial line. As the editor put it: "Many sites that had good, free information are either charging for it, or have lowered the quality of the remaining free information" (Lanza, 2004, p1). The Internet is changing, and it is happening now.

The commons

One way to illustrate the changes to the Internet environment is through the concept of the commons. Common property has always been found in human society, whether in the form of grazing areas or beaches, or libraries and a common knowledge pool. The commons is a multi-faceted concept however, and it is not just a park, as it often means in English, although a park can be a commons. Simply put, the commons is the vast range of resources that is collectively owned by mankind. It cannot be controlled by any one individual, or any authority, and no one can control another's use of it. Commons can be both tangible and intangible, or rivalrous or non-rivalrous. In the twentieth century tangible examples of the commons might include oil fields, grasslands, broadcast airwaves, public parks, and civic institutions. This is known as the physical commons – collectively owned resources free for all to use. A physical commons is rivalrous; like a pasture on the edge of town where overuse by one farmer's cows it will interfere with another farmer's. Overuse can lead to depletion, or eventual destruction of such a commons.

An intangible, or non-rivalrous commons, on the other hand, can be equally enjoyed by one or a number of persons. Such a commons would include creative works and public knowledge not privatised under copyright law. This is an intellectual commons, and it is the knowledge base that facilitates teaching and learning and lets creators create new works and discoveries. This includes cultural heritage, from Shakespeare to folk songs and tales, along with scientific and academic research that has been supported by taxes. The intellectual commons is non-rivalrous, meaning that one individual's use of Shakespeare's sonnets or Einstein's theories will not affect another's. The consumption of one will not prejudice another's in the present or the future. The intellectual commons is beneficial to society in that it encourages the equal exchange of knowledge, and the building of trust and social capital. As Kranich (2004b) points out, culture, science and technology all grow via a snowball effect – each new artist, scientist or inventor builds on the works of those who came before. Historically this can be seen in the sharing of songs and tales within a community, or with the copying of manuscripts in monasteries for preservation and use in the future.

The way a commons is organised will affect its utility for its users. Rivalrous or non-rivalrous commons may be arranged differently, but a successful commons will harness its users to maximise its potential. Contribution, participation and support are voluntary on behalf of the individual, but the benefits of any activity are broadly dispersed. For example, Bollier (2002) refers to 'gift commons', communities of shared values created by the contributions of individuals over time, such as the development of Linux, the open-source computer operating system. In a gift commons valuable work occurs in

exchange for esteem and respect from the community of users, but no money changes hands. A commons such as this will rely on co-operation and ethical norms to survive, thereby reflecting and generating social capital. In this way use and growth of the commons contributes to the reflexivity of modernity, in that habits and networks of reciprocity are formed that contribute to a constantly renewing flow of information about existing social orders or structures. The information present in an intellectual commons is used to inform society about itself and its actions, and to change direction accordingly.

The physical commons can be a place where people come together to discuss, share and solve problems – libraries and schools can perform this function of the public sphere. The intellectual commons should not, however, be confused with the public sphere, although it shares some characteristics and is undoubtedly part of it. A distinction between the two concepts must be drawn. The public sphere is an arena of rational discourse and debate and the intellectual commons is the pool of knowledge that might be drawn upon for discussion *in* the public sphere. The commons might be better characterised as the public domain, for the information available there is open for all to use as they see fit.

The tragedy of the commons

Historically, commons have always been associated with enclosure. In England the ruling classes imposed agricultural changes that saw common fields 'privatised' to boost agricultural production and advance development between 1500 and 1800. This process progressed incrementally over time, and there can be no single act of legislation said to have caused enclosure. While common property regimes continued to exist in the form of forests or fisheries, and public and private co-existed alongside one anther, the commons has always been linked with the concept of erosion.

Kranich (2004b) points out that while academic research into the commons has existed over some time, one particular article has been associated with the commons since the end of the 1960s. Hardin's (1968) article 'The Tragedy of the Commons' used the example of over-grazing on common land to illustrate how unlimited access to resources results in excessive demand and consequent over-exploitation. If a physical commons, such as a pasture, is used responsibly by its attendant farmers there is no reason why the resource can go on being renewed and used for generations. If the balance of the commons' use is upset, however, through one farmer grazing more cattle than anyone else on it, then equal use of the commons is curtailed and the pasture is likely to be depleted or destroyed as a result. A number of scholars have called into question the tragedy of the commons, however, arguing that Hardin should have called the article the tragedy of open access, for he confused the commons (rules, social infrastructure) with an open access regime (a free for all where a resource is essentially open to all without restriction) (Bollier, 2002; Lessig, 2002).

Where the problems of a physical commons may spring from overuse, the intellectual commons suffers from another problem. Employing knowledge does not destroy it, but there is the difficulty in persuading people to contribute to a free, un-owned, common resource. This is Ostrom's 'provisioning problem' (Levine, 2002). If creators of intellectual works need to eat to live, they must receive some sort of remuneration for their work. If no form of reciprocation is forthcoming for creators it is logical to ask

whether or not people will contribute to a commons. What is in it for innovators? In addition to this, any commons is always subject to a degree of 'free-riding', where people try to benefit without doing their share to maintain the resource. Whether because of this or the provisioning problem, the intellectual commons is as suspect to threats to its existence as the physical one.

If common resources are properly managed, however, these problems can be overcome. The opposite of the tragedy of the commons is when, within the limits of the community, the more who join in an activity, the greater the enjoyment of each participant. Simple examples of this might be a dancefloor or a festival. Through such activities the solidarity of the community is reinforced as individual participation produces beneficial 'externalities' for others. Such a community-minded approach to inclusion has seen the commons praised as a mechanism that can allow discussion of sometimes marginalised subjects such as democratic participation, openness, social equity and diversity (Bollier, 2002).

Such discussion would be a beneficial side effect, but the real value of an intellectual commons is the freedom it brings to its users to draw upon knowledge that has gone before. Access to the findings of great scientists or the works of great authors and artists lets present-day users build up a knowledge base that can be used to educate and improve life for people all over the world. Best of all, the common pool of knowledge is not depleted every time it is accessed. As Thomas Jefferson said, "He who receives an idea from me, receives instruction himself without lessening mine; as he who lights his taper at mine, receives light without darkening me" (Lessig, 2002, p94). Having access to the fullest range of views expressed is key to freedom of access to information – the intellectual commons should provide such a range. Access to an intellectual commons containing as much of mankind's shared knowledge as possible therefore positively contributes to freedom of access to information. Any depletion of such a commons, for whatever reason, will negatively impact upon the individual's quest for answers and hamper freedom of access to information.

The Internet and the commons

When the intellectual commons is considered in the age of the Internet, it is often referred to as the 'information commons', as it is made up from common pool resources such as mainframe computers and information and ideas that are shared online across a variety of user groups (Bollier, 2002). The concept of the information commons is an appropriate background for discussing today's changing Internet environment. As the quotations below illustrate, the Internet shares many characteristics with the intellectual commons:

"*The Net, because of its antispatial and non-material nature, differs from other economic resources that mankind has henceforth utilised (…) Net material can be copied easily and cheaply. It does not require a place to store the data. More importantly, any number of individuals can use a web site simultaneously without wearing it out in any manner or preventing others from utilising it at the same time. (…) On the Web everyone can utilise the posted sources as much as (or more than) is necessary without the information becoming worthless. (…). There is no danger of all the cyberspace being used up*" Yousuf Dhamee (No date)

While the Internet in its entirety cannot be considered a commons, for it is lacking some of the necessary characteristics, the Internet and the concept of the information commons are very similar. What the Internet lacks in "clearly defined group governance that is characteristic of common property regimes" (Kranich, 2004b), it makes up for in the way it stores and disseminates information. The non-rivalrous nature of the Internet means that consumption of online information by one person does not detract from the ability of others to derive value from consuming it. The non-excludable nature of information means that once it is distributed, it's difficult to prevent users sharing it[35]. Finally, the Internet as information commons is full of positive externalities, in that information is a major input to its own output. Contributing information into the commons enables subsequent production at a lower cost by the original providers or others – a positive feedback effect. Indeed Cooper (2004) talks about the "network effects" of the Internet, where the more people use a technology, each individual derives greater benefit from it. Larger numbers of users seeking specialised applications creates a large library of applications, increases their use, and spreads them to users further behind on the S curve of diffusion. The early adopters create demand side economies of scale that benefit those who follow in their wake.

In light of these similarities, the development of the Internet can be explained with reference to the common property model. Many authors have commented that the early Internet very closely resembled a commons (Benkler, 2000; Lessig, 2002; Levine, 2002). Even prior to the advent of the World Wide Web there existed community freenets, bulletin boards, listservs, and Usenet newsgroups. These technologies allowed users to generate, receive and exchange information easily, meaning every user could be a creator of information. Information was created by individuals who were not responding to the directions of managers or price signals in the market. This type of 'peer production' corresponded to a democratic, commons-based production of knowledge, backed up by computer programmers creating their own software and then distributing it freely. The digital nature of the medium, along with open standards and protocols, made this easier and copying and sharing of programs become widespread. The Internet was built from the bottom up.

In Chapter Two the architecture of the Internet was illustrated using Benkler's layers model. If this conception of the Internet is briefly returned to, it can be seen that the early Internet had features of the commons at all levels. At the lowest level, the physical layer, the wires that link computers to the net are private property. In the early, American, days of the Internet communications companies were compelled to let people connect to their networks through the common carriage structure. No one owned or controlled access to this network as a whole, and no one ran it, meaning anyone with the right equipment could simply log on and begin communicating, with no questions asked about packets sent on to the network. The intelligence built into the network would simply ensure messages got to their destinations as quickly as possible. This intelligence was generated by the programs operating at the middle level, the code layer, where most of the really important programs, languages and protocols, such as TCP/IP or HTML, were unowned. Finally, at the top level, the content layer was home to large amounts of

[35] Accessing the information, as shown in Chapter Five, is another matter. Filtering and blocking techniques, and the possible repercussions of information access create a hampered environment for information seeking.

free content that could be ripped, mixed and burned[36]. The early days of the Internet were yet to experience the emergence of proprietary business models and enforcing property rights of IP holders was very difficult indeed.

Libraries and the threats to the commons

It might be argued that public libraries are the quintessential intellectual commons. In the pre-Internet age libraries provided a mechanism to access information in the public domain for the betterment of individuals and society. Anyone could use the public library's resources, take the information found there and build on it – within the boundaries of fair use. With the advent of Internet access and digital technologies, libraries are able to offer yet more alternative modes of access to information and can even digitise their existing print resources to offer even more resources. In light of this, it is therefore vitally important that libraries take every step possible to preserve the information commons, especially if access to information on the Internet is to be barrier-free for users. A commons-influenced approach to information provision could bring with it many benefits for both freedom of access to information and freedom of expression. The building of subject specific commons online, for example, could aid education and research, or spur innovation in many areas. The problem is that the quality of information available in the online commons is shrinking, and barriers are being placed in the way of accessing it. During the second half of the 1990s, private interests began to exercise more control at each of the three layers of the Internet, leading to the private appropriation of collectively owned resources to the benefit of the corporate class and the detriment of ordinary citizens. This continues a trend that can be seen in other types of commons. Bollier (2002) defines the 'Frontier commons' as being features of the natural world too large or small or too elusive to be captured by the markets. These commons are being eroded too, from the expansion of oil fields to situations where biotechnology corporations are seeking to gain patents on agricultural seed lines long regarded as community assets. There are even patent issues regarding the human genome (BBC, 2002). The commons has been marginalized "because of the limited assumptions of conventional economics, which prefers to focus on the individual and not the collective" (Bollier, 2002). Common wealth, such as government-owned property, natural systems or shared, inherited knowledge, has been undervalued by governments and sold to the private sector, often at bargain prices. The private appropriation of broadcast spectrum in the US is one particularly brazen example (Lessig, 2002).

The enclosure of common resources on the Internet can be seen in four ways, all of which are a result of the increasing corporatism of the online environment:

1. First, changes to copyright legislation are creating an environment where the transfer of knowledge into the information commons is interrupted. These changes are combined with the latest digital technology to enforce copyright law and prevent users from ripping, mixing or burning – whatever the information concerned

[36] "Rip. Mix. Burn." Apple used this slogan as part of an advertising campaign relating to the purchasing of online music, much to the chagrin of the major record labels. Apple later turned its back on such an approach to gain the support of the record labels in time for the launch of its iTunes online music store (Borland, 2003; Mann, 2003)

2. Second, software processes are becoming subject to patents, resulting in stifled innovation and control of information flow by patent owners
3. Third, the nature of the current global media market, where a handful of major corporations are able to control large amounts of information provision all over the world, has led to a change in the open communications structure of the Internet. The emerging phenomenon of media corporations seeking to alter Internet infrastructure in order to gain more market share will affect both basic access to the Internet and access to the information found online
4. Finally, a combination of these three can be seen in a general intrusion of market forces into all areas of the Internet, from entertainment to news provision to the way search engines display their results. Online advertising, registration to access resources and targeted marketing are all increasing on the Internet

In order to provide an idea of the extent of these problems in the current online environment these four areas will now be examined individually. During the course of this PhD project relevant mailing lists and other sources have been used to gather information on the extent of corporatism and commodification on the Internet – on a global scale. As a great deal of information relating to these problems is concentrated on the United States, interviews have also been carried out with senior library professionals elsewhere in the world to assess how these problems affect libraries on a wider scale. Drawing on these sources, and using information gathered from the empirical survey of IFLA member countries carried out in 2003, examples will be given of how the problems manifest themselves and the direct and indirect effects they are capable of having on Internet access in libraries, in the form of barriers to freedom of access to information and freedom of expression online.

1. Copyright and intellectual property in the digital age

"In less than a decade, the much ballyhooed liberating potential of the Internet seems to have given way to something of an intellectual land grab, presided over by legislators and lawyers for the media industries" (Boynton, 2004)

Copyright was originally conceived as a protection of the proprietary rights of authors, providing them with limited period of copyright for published literary works. As described in Chapter Three, copyright was originally granted for a limited term – from the end of the 18th century to the beginning of the twentieth in the United States, for example, it was 14 years for new works produced by a real author. Works outside of copyright were in the public domain, and the permission of a third party was not needed for an individual to take and build upon them. The works of Shakespeare, for example, were free to be studied and built upon.

The content of these unprotected works can be seen as source (Lessig, 2002). The source is open – one can open up the book and see how it is constructed. This is an important concept if recent copyright changes related to digital works are to be understood. Open-source software has source code that can be studied by any user and its imperfections modified. Works of literature, art or research that are in the public domain fulfil the same function for materials from the pre-Internet age. In both cases, existing knowledge can be used as a base to build something new.

One of the most famous examples of an artist using somebody else's content for their own ends was the creation of Mickey Mouse in 1928. Walt Disney 'created' Mickey Mouse from Buster Keaton's character Steamboat Bill, despite the fact that Steamboat Bill was not yet in the public domain (Ibid)[37]. This did not stop Walt Disney's burst of creativity however – he went on to take fairytales from the Brothers Grimm and turn them into cartoons that have been seen and loved by millions of people around the world. This was possible because Walt Disney himself was creative, and because content like that of the Brothers Grimm was available in an intellectual commons where people were free to take and build on it.

Fairytales and folk stories have gone on to inspire some of the 20th century's greatest works of cinema, theatre and literature. Pre-existing works have been essential to the creation of new ones. One of the biggest selling types of music in the 20th century – all over the world – is hip-hop, a musical style heavily based on liberal borrowings and reshapings of existing songs. It is tempting to speculate whether hip hop would have gone on to make so much money for major record labels if the type of restrictive copyright regimes seen in the digital age existed in the late 1970s.

The principles behind all of these artistic endeavours - copying, borrowing, parodying - came under attack through legal systems in the United States in the 1990s. In the world of music, superstars such as James Brown – possibly the most sampled musician in the history of modern music – instigated lawsuits against artists using loops and samples of his work. While the actions of Brown gained the headlines, lawyers for entertainment corporations all over the US began to use the courts to protect the rights of intellectual property holders. The Girl Guides Association was targeted in an attempt to gain royalties for the singing of copyright songs around the campfire (Besser, 2001). By the middle of the 1990s the Internet began to receive attention and the homepages of Star Trek fans were targeted by Paramount Studios. Many of these home produced, crude web sites included fan fiction sections where fans would write stories involving their favourite characters from the television series. In 1996 cease and desist letters were sent to web masters alleging copyright violations (Ibid).

Many other examples exist of how corporations began to pay special attention to protecting their intellectual property in the 1990s (Besser, 2001; Lessig, 2002). It would appear that a situation has been reached, especially in the United States and Europe, but also all around the world, where copyright is being misunderstood. The granting of a brief monopoly for limited times was originally designed to supply the economic incentive to create and disseminate ideas, but it would appear that it is beginning to be viewed as an unlimited economic right for rights holders. In particular, two important public rights are under attack in the US and Europe that have grave implications for the future of freedom of expression. The fair use provision of copyright law details the actions that users can legally engage in without asking the permission of anybody else. The right of fair use permits owners of works the right to use them as they see fit for education, private study, or satire. Use of works, such as quoting passages in another text, making a backup copy of an album, or photocopying part of a text, take place within allowed boundaries dictated by copyright law – for example only a certain percentage of a text might be able to be photocopied. The right of first sale, on the other

[37] A good parody of the Walt Disney situation can be found in the Simpsons episode 'The Day the Violence Died', where Bart Simpson meets the bitter creator of the original Itchy and Scratchy who ended up having his ideas stolen by a corporation (TVTome, No date).

hand, allows anyone who purchases a work to do what they want with it – lend it, resell it, or destroy it. This right enables libraries to lend out materials to users[38].

In the age of the Internet and digital technology, it would appear that the rights of fair use and fair sale are being made redundant by control measures being put in place by the rich and powerful – mostly 'big media' companies such as those in Hollywood and the record industry. The evidence gathered during the data collection phase of this PhD project suggests that changes in copyright law are overly favouring copyright owners leading to enclosure of the informational commons. New technologies have evolved, with legislation to enforce them, that enable control of the evolution of culture and the flow of information. Cate (2002, p5) puts it thus: "Unchecked, they threaten the public's ability to access and use information". Three areas can be examined to show this new control process: the length, breadth and enforcement of copyright in the digital age.

- **Extending length of copyright**

This process is taking place as the result of a number of actions. Copyright, which was supposed to be for limited times, has been extended twice in the last 30 years in the US. The first United States Copyright Act (1790) provided for a term of 14 years, renewable in the 14th year for a second 14-year period. This was later increased in stages over the next 200 years to equal the life of the author plus 50 years in 1976. Extending copyright defers the moment when a work becomes part of the public domain and means there is less information available to be sourced from the intellectual commons.

The most recent extension to copyright law in the United States is a good example of what is currently wrong with copyright legislation in general. The media and entertainment industries vigorously courted the Clinton administration in the first half of the 1990s, pushing for revised copyright legislation that favoured rights holders in the digital age (Besser, 2001). The result of this lobbying was the 1998 Sony Bono Copyright Term Extension Act (CTEA), which extended copyright by an extra 20 years. This increased copyright for individual authors from to the life of the author plus 50 years to life plus 70 years. Works created by corporate authors (works made for hire) received copyright protection for 95 years, up from 75 years. As a result of this expansion, works due to be released into the public domain in 2004 will not be available until 2024. When the act passed, in 1998, it had an immediate effect on works by Virginia Woolf, F. Scott Fitzgerald, Rudyard Kipling, and P.G. Wodehouse – works by these authors were supposed to enter into the public domain but did not as a result of the legislation. The act also ensured that one of the greatest cultural icons of the 20th century, Mickey Mouse, would also avoid passing into the public domain in 2004.

Instead of copyright remaining an incentive to produce, it has become part of a system to regulate creativity – the regulation of publishing and the regulation of copying. It is questionable as to whether exclusive rights lasting beyond a lifetime will inspire an author to create more works. The new rights granted under the CTEA benefit big corporations and business more than inspire creativity in individual authors. The situation is not just found in the US either, for the European Union has also extended copyright for individual authors from 50 to 70 years. The EU Copyright Directive

[38] Fair use and first sale rights are inevitably interpreted differently around the world but, regardless of interpretation, they remain linked with copyright exceptions.

(EUCD) is supposed to update and harmonise copyright laws across Europe although it has caused consternation regarding the power shift from individual creators and users to larger corporate copyright holders (Hugenholtz, 2002). This situation has been reproduced as far afield as Australia, where copyright law was brought into line with the US early in 2004 (Shiel, 2004). Such a change benefits large US corporations who export a lot of copyrighted material but hampers heavy importers of information such as Australia. Two decades of culture, which would have been freely available for use by Australians, reverted to corporate control under the extension. Other countries around the world, especially the 179 state signatories to the World Intellectual Property Organisation's (WIPO) Copyright Treaty can expect to play under the same rules in the near future (The Register, 2004). In light of this, it is no wonder commentators question if an age of perpetual copyright is soon to be ushered in (Besser, 2001).

- **Extending scope of copyright**

Along with increasing the length of copyright, new laws around the globe are also increasing its scope, ostensibly to cope with new digital information formats. In Europe, the EU Database Directive offers protection for databases - databases being collections of independent works arranged in a systematic way (Russo, 2002). All that is required to gain copyright is for database creators to show that substantial efforts have been made to obtain, verify and present the contents of the database. The law does something new that the US has yet to do – it allows for the copyrighting of otherwise uncopyrightable facts, based on how they are arranged and presented. While great financial resources may go into the construction of databases, there is an issue for the intellectual commons, and by extension, libraries, if ownership rights are granted to actual data or facts that might be considered the preserve of mankind. Information previously available in the public domain may be taken and incorporated into a database where it can now gain copyright protection on the grounds that it was compiled in an original way.

The directive raises several issues for the use of the information found in databases. Users cannot extract or reutilise all or a substantial part of the database. What constitutes a substantial part is unclear. Reutilise is defined as making the contents available to the public by any means. Critics have also pointed out the lack of fair use exemptions for scientific and teaching institutions, including libraries (Ibid). The directive extends protection for databases for 15 years initially, but allows that term to be extended with any substantial update of a given database. This reopens questions regarding perpetual copyright, for the protection will run indefinitely as long as the publisher continues to update the content within each 15 years (Ibid). Copyright law is intended to foster inspiration in authors, and yet the EU Database Directive, by granting protection for any database which is the result of human, technical, financial or other resources, protects investment over creativity.

In the United States, the European legislation caused scientists to openly complain, especially after the EU sought to have WIPO establish an international agreement based on the directive. Large companies such as Yahoo and Google, along with the ALA, are against any increasing of copyright protection for databases, arguing that existing legislation is adequate. Proponents of the US measure, known as 'The Database and Collections of Information Misappropriation Act', include large information conglomerates and firms with interests in data ownership such as Reed-Elsevier and Westlaw. The opponents are worried that increased protections could lead to

monopolisation of the market for information. This is because the act would let certain companies own facts, and then charge users to access them. Google's search results, for example, could be greatly affected if they are unable to offer free access to stock quotes, historical health data, sports scores and voter lists (Zetter, 2004a). Consequently, freedom of access to information on the Internet could be hampered by the creation of direct financial obstacles. If WIPO do ever establish international legislation based on such a model the consequences for information seekers will be felt far wider than the US and the EU.

- **Enforcing the protection of copyright: Digital rights management**

Legislation can set copyright frameworks and provide guidelines, but before digital technology it was very difficult to discover, police or prevent copyright violations. With print materials the user retained a great deal of control over how a work was utilised. If, for example, an individual photocopied fifteen percent of a work rather than the ten percent he was allowed to by law, it is highly unlikely that the publishers of that work would ever find out. With digital technology the balance of control can be shifted back towards the creator – or rights holder – of any work in question. As Lessig (2002) notes: "never has [information] been more controlled, ever". An example of this in a library context was given by Sheila Corrall of Southampton University:

"*We have had some instances where the suppliers of electronic journals have got back to us and said there are people who are not abiding by the regulations here, they've been downloading, say, whole issues of journals rather than one article per issue and they've blocked our institutional access to that journal while we investigated the situation. So, certainly there is much more instant action on something like this than you could ever imagine in the print era when that sort of thing would not be picked up unless you were directly being investigated by someone on-site from a licensing body. Whereas this way they can pick this up straightaway and then we have to deal with it"*

In the 21st century therefore, copyright can be enforced and controlled through technology - control mechanisms can be built into access mediums. This is done through digital rights management (DRM), technology designed specifically to control how works are used. If the open-source analogy can be used once more, DRM can be compared to proprietary code (the opposite of open-source) where the code is owned and users cannot see inside it and tamper with it to remove imperfections or make it better. It is totally protected. A fine example of proprietary code is Microsoft's Windows operating system.

The emergence of DRM at a legislative level, and its consequent effects, can be best seen through an examination of the 1998 Digital Millennium Copyright Act (DMCA). The DMCA is a piece of US legislation specifically dealing with copyright law and digital technology. It permits copyright holders to build in measures that will ensure their works are perfectly protected by technology, regardless of whether the uses that users are seeking to make of these works are privileged by law – such as fair use. The DMCA specifically prohibits circumventing the technical measures that control access to copyrighted works and carries the threat of heavy fines or even prison for those who do. It restricts the options of users with regards to how they use works they have purchased, and greatly scales back some of the rights relating to this use that they have been accustomed to. Benkler (2000) calls this situation "technological lock-in". As a

result of this, the DMCA is potentially impairing research, in that it criminalizes reverse engineering. For example, technologically aware librarians or specialist researchers are unable to reverse engineer filtering software to see how blacklists or whitelists work, or even to see which web sites are listed on those lists. Any bias in filtering software, which librarians should be entitled to know about for the good of their users, will remain undiscovered. Because of the proprietary nature of filtering companies' lists they are entitled, under the DMCA, to remain out of public inspection.

Such restrictions will affect US librarians in their quest to discover how filtering programs make their decisions, but the DMCA has implications for users of digital technology all over the world. Just as the CTEA has had effects around the world in the greater harmonisation of copyright terms, or even CALEA in terms of standardising electronic surveillance, the DMCA also appears to be being used as a template for future legislation (McCullagh, 2004; The Register, 2004). Furthermore, the DMCA allows for the prosecution of foreign companies if they are seen to interfere with US copyrights. In 2001-2 a Russian software company, Elmcomsoft, was taken to court under the DMCA (Electronic Frontier Foundation, 2002). The company was eventually acquitted but its story is nonetheless instructive. Among other alterations, Elmcomsoft had developed software to make the Adobe E-Reader – which is an eBook - easier to use for visually impaired people. A programmer for the company named Dmitri Sklyarov was imprisoned in the run up to the trial, after presenting his research on circumventing the eReader's copyright controls at a convention in Las Vegas. Despite the beneficial end uses, and despite the software developed only being useful to people who had already purchased an E-Reader, and despite the company not actually infringing on anyone's copyright, the company were charged with trafficking in, and offering to the public, a software program that could circumvent technological protections on copyrighted material. While the program written by the company was legal in Russia, and in the rest of the world, the DMCA law clearly states that if an individual produces and distributes code that cracks technological protection systems, and that code can be accessed in the United States, then they are prosecutable under US law.

Another example is the case of Norwegian Jon Johansen (Electronic Frontier Foundation, 2003). He developed software that would let DVDs play on systems running the Linux operating system. Johansen was seeking to help users of open-source software play Windows-designed DVDs on their machines. The software he developed also let users fast forward through commercials and make copies of DVDs for 'educational purposes'. After pressure from the US government he was indicted in Norway and charged with breaking into another person's locked property to gain access to data that he was not entitled to. Johansen, however, used a DVD player owned by the family. While the Norwegian courts eventually acquitted Johansen – even after an appeal – the case highlighted Hollywood's desire to stay in control of its content. This desire is now strong enough to pressure foreign judiciaries to take steps against those it sees as infringing its copyright[39]. It is not only movie companies however – record labels have begun lawsuits against individual file-sharers in the US and UK that have seen children as young as 12 years old targeted (Vance, 2003).

[39] These steps included ordering a US website to remove links to Johansen's code and attempting to sue a t-shirt manufacturer that printed t-shirts with part of the code on the back (Lessig, 2002).

It would be wrong to assume that copyright law around the world offers the same definitions of fair use or first sale. While the European Union, for example, is in harmony with the US in terms of copyright lengths, it has no accepted definition of 'fair use' and instead permitted acts and specific exceptions to copyright vary from country to country. The EU Copyright Directive (EUCD) has been created to update and harmonise copyright laws across Europe but, like the DMCA, it is controversial because of the control it would give large corporations over how consumers can use the Internet or other digital devices. There is no fair use provision present, and the directive focuses on the criminalisation of copyright circumvention, moving the focus of illegality from copying to the technology that facilitates copying (Timms, 2003). Mark Owen, head of IP at UK law firm Harbottle and Lewis was quoted in the UK's Guardian newspaper as saying that the EUCD (or legislation like it) "over time could change the whole nature of copyright and the way we buy and sell copyrighted works. Eventually you may realise that what you are getting is not a thing but some sort of license to access a concept and that license is limited in all sorts of ways" (Ibid).

This is because it is not only the rights of fair use that are challenged by the effects of DRM. In the age of print, the right of first sale meant copyright holders could not affect how buyers used works. DRM obviously changes this, and sanctions a move towards the 'licensing' of works rather than buying them. This desire for licensing was expressed by the President and Chief Executive of News Corporation[40], Peter Chernin when he called for legislation and technology that would let publishers control the extent and duration of users' access to a work, the amount of data available about the work and restrictions on distributing the work on to others (Milliot, 2001).

Libraries have struggled with electronic licenses for since they first started providing access to electronic databases and have seen fair use rights become watered down in contractual agreements (Besser, 2001). Certainly the issue of inter-library loans becomes trickier when dealing with site licenses for access to online information resources. Further moves on behalf of publishers to 'license' works rather than buying them would affect libraries' ability to offer full access to information, especially relating to archival access. Licenses are already limited for a number of years, and fees are liable to changes decided by publishers. Further technological lock-in as a result of increased DRM would restrict the amount of access to online information resources that libraries can offer.

- **Enforcing the protection of copyright: lawsuits**

Legislation provides copyright frameworks and digital rights management provides tools to police copyright in the digital environment. As has been shown, the information commons suffers as a result of recent movements in both of these fields. The final aspect of this situation is when copyright holders take advantage of these legislation and tools to protect their own interests at the expense of others' freedom of expression. Legislation such as the DMCA has been used to do this, and several web sites critical of businesses or organisations, both local and global, have been threatened with closure by their targets who maintain their trademarks and copyrighted materials are being

[40] News Corporation, of whom Rupert Murdoch is the chairman, is one of the biggest media corporations in the world. It is extensively involved in broadcasting, publishing and sports, and in 2002 it generated revenues of over 11 billion dollars (The Nation, 2002).

unlawfully used. So many of these cases are occurring that the Electronic Frontier Foundation in has set up a 'chilling effects' clearinghouse to support web site owners threatened with cease and desist letters (Electronic Frontier Foundation, 2004a).

The key lies in the parts of the DMCA referring to the responsibilities of ISPs and the provision of copyrighted material. Under the DMCA any service provider who provides access to material which allegedly infringes copyright must remove access to that material if officially notified by the copyright holder, or risk being held liable themselves for contributory copyright infringement. This is before judgement is passed on whether the material in question infringes copyright or not. The Church of Scientology provides two good examples of how to use copyright legislation to remove online criticism deemed harmful to the interests of the copyright holder.

The Church of Scientology made significant amounts of money from copyright lawsuits in the 1990s (Besser, 2001). The organisation monitors the Web for those using portions of its writings to criticise it and then files suits against the posters *and* the ISPs claming copyright infringement. Even the threat of litigation against an ISP called Netcom led Netcom to change their posting policy – any posting of copyrighted material on their sites was forbidden and any material would be quickly removed (Ibid). Such a policy leads to situations where rights holders can get ISPs to remove material they do not like. More recently, in 2002, the Scientologists used the DMCA to force the search engine Google to temporarily remove links to sites critical of the religion. The criticising site, Xenu.net, was placing documents obtained from the Church of Scientology on its web site and critiquing them. Because these documents were copyrighted, the Scientologists were able to threaten Google with legal action under the DMCA – in the same way as web sites connected to the Jon Johansen episode were threatened – and force them to remove the links. Google was powerless to resist (McCullagh, 2002). The link between copyright disputes and free speech has implications for freedom of expression for everybody – especially if organisations are able to target the world's most used search engine.

A further example of the use of copyright law to protect the interests of businesses occurred in 2003 when students at an American university came into the possession of documents detailing flaws in the biggest electronic voting system in the US. In light of the controversial presidential election of 2000 they posted this information on the net in an attempt to draw attention to the company in question. Diebold, the manufacturers of the voting system, threatened to sue the ISP hosting the material. The ISP – in this case the university server – was therefore asked to remove the material and it immediately complied. This means that, as a result of law, private parties in the US effectively have a veto power over much of the information published online. The question of whether or not the students were in the right was irrelevant – the DMCA meant "speech could be silenced without the benefit of actual lawsuits, public hearings, judges or other niceties of due process" (Boynton, 2004). Those willing to fight the copyright holders in the courts for what they think is right stand a chance of reverting the decision, but persistence and deep pockets are often needed to win against large businesses in court. Small information providers may be loathe to go to such lengths.

Cases relating to online copyright and trademark infringement continue to occur with regularity. The Google method has been used to try to get the 2600.com web site to remove its pages critical of an airline that had received bad publicity in the past (2600.com,

2004). According to the Chilling Effects Clearinghouse, the Google method was used 20 times in July 2004 alone (Chilling Effects, 2004). In the UK, cease and desist letters were sent to the webmaster of shiremail.com from the movie studios behind the Lord of the Rings franchise, with the studios claiming ownership of the word shire – a well known English name since c.600AD (McCarthy, 2004). Of course, copyright law still differs greatly around the world, but with harmonisation efforts underway at the level of the World Intellectual Property Organisation it might be hypothesised that the situation all around the world may begin to resemble that in the US. After all, multinational corporations want trademark recognition in all parts of the world and have shown desire to secure this by legal means in the past (Klein, 1999). Web sites hosted in the US are feeling the brunt of big businesses legal action right now, but the fact is the use of copyright legislation to maintain a strong position in the market and avoid bad publicity is now part of life on the Internet.

2. Patents, open-source and innovation

The second area where the enclosure of common resources on the Internet can be seen concerns patents. As the proceeding section demonstrates, there currently exists a desire on the behalf of intellectual property holders, most notably media and entertainment corporations, to increase the amount of control they can exercise over information. An opposition to this way thinking exists in the form of the open-source/free software movement. Individuals such as Jon Johansen and the programmers from Elmcomsoft form the visible front line of this movement, but the prevailing ideology within the movement comes from programmers such as Richard Stallman, who founded the GNU project in 1984. GNU stands for 'GNU's not Unix', and refers to the Stallman-designed free operating system that is free for users to copy and redistribute, or alter in any way they see fit. The concept of 'free' software is explained on the GNU web site:

> "Free software is a matter of the users' freedom to run, copy, distribute, study, change and improve the software. More precisely, it refers to four kinds of freedom, for the users of the software:
>
> - The freedom to run the program, for any purpose (freedom 0).
> - The freedom to study how the program works, and adapt it to your needs (freedom 1). Access to the source code is a precondition for this.
> - The freedom to redistribute copies so you can help your neighbour (freedom 2).
> - The freedom to improve the program, and release your improvements to the public, so that the whole community benefits (freedom 3). Access to the source code is a precondition for this" (GNU, 2004).

The Open-source Initiative (OSI) takes the idea of free software and markets it to the world (OSI, 2004). The terms 'Open-source' and 'Free software' are almost synonymous, and the subtle ideological distinction that separates the two will not be discussed here. Open-source/free software advocates believe that users should be free to do whatever they want with the software they acquire. The concept of 'copyleft' has come out of the movement– anyone distributing free software must also pass along the freedom to modify and re-distribute in the future. This means no one can claim future ownership or place restrictions on users. Essentially, the movement is committed to what has been called 'transparent creativity' or the free sharing of knowledge. The use of open-source software continues to grow around the world, with the Linux operating

system considered to have upwards of 20 million users worldwide (Ibid). Every Internet user who sends email or uses the Web is using open-source software all the time. The running gears of the Internet (email transports, web servers, and FTP servers) are almost all open-source. Developing and developed world governments are even considering using open-source operating systems over Microsoft's proprietary software (Lettice, 2004; The Register, 2003c). But, while the idea of free software and open-source code is gaining converts it is also gaining enemies for, as Lessig (2002a) warns: 'free code threatens, and the threats turn against free code'.

The threats against free code involve the use of software patents. A patent is an official right to be the only person or company allowed to make or sell a new product for a certain period of time. In the US, for example, this is usually 20 years. The rest of the world is affected, however, because while American owned transnational corporations will secure patents in the states, most of these will make sure they get European Union and international patents on their inventions too (Stallman, 2003). To most effectively utilise a patent it should be applicable on a global scale and enforceable anywhere – this is undoubtedly a transnational issue. Patents are complementary to copyright, although different. They protect new technical inventions and principles whereas copyright protects the form of expression used. Therefore a patent might protect a new sort of paper but the printed content of a newspaper printed on this paper might be protected by copyright. In terms of computers, the actual code (whether machine readable, or in a form readable to humans – the source code) would be copyrighted (or copylefted), but the underlying technical ideas (the PC for example) could be patented.

In the US, software, and the code that creates that software, can be patented. Software patents can protect as little as a single line of code telling a computer to do a specific task, such as contacting another computer. Traditional patents were for concrete and physical inventions, but software patents cover ideas. As the Foundation for a Free Information Infrastructure (FFII) state: "Instead of patenting a specific mousetrap, you patent any "means of trapping mammals" or "means of trapping data in an emulated environment". The fact that the universal logic device called "computer" is used for this does not constitute a limitation. When software is patentable, anything is patentable" (FFII, 2004a).

In most countries, mathematics and other abstract subject matter have been considered to be outside the scope of patentable inventions. Software used to occupy the same status. Since the start of the Internet boom in the 1990s however, this situation changed in the US. There, the number of patents (especially technological ones) doubled between 1990-2003 and the US Patent Office has a backlog of 450,000 patents pending. Software and Internet patents account for over 15% of all patents granted in the US (Krim, 2003). For new software developers, the patent process is complex and time confusing. If a developer was to write a program, or was even thinking about doing so, it is extremely difficult to find out what patents cover it, because some patents are pending and therefore secret. While the complete list of existing patents is published – 100,000s in the US alone for software - sometimes two patents might cover the same algorithm, a not unusual situation according to Stallman (2003). A developer might spend a large amount of time developing software only to find that another company holds a patent that covers their 'invention'.

This situation is unlikely to produce new actors in the software market and leaves any innovation in the hands of existing patent owners. Regarding software patents, Bill Gates, Microsoft Chairman, has publicly declared that:

"*The solution is patenting as much as we can. A future startup with no patents of its own will be forced to pay whatever price the giants choose to impose. That price might be high. Established companies have an interest in excluding future competitors*" (Lessig, 2002, p214).

Smaller companies developing software packages come up against many problems as a result of patents. Because software packages are usually very big, the processes and ideas involved may already be patented by somebody. Patents may be licensed, but licensing patents from their holders is very expensive and only really a sensible option for hugely rich corporations (Stallman, 2003). The largest companies, such as IBM, can cross-license with one another and access each other's patents in a type of cartel. The smallest are consequently squeezed out of the market. The benefits of a system designed to grant a limited monopoly on an idea to its creator, no matter who they are, actually go to the firms with the most patents. In light of this, Microsoft's attitude is unsurprising.

If the US experience of patent granting is to be the blueprint for Europe and the rest of the world, it would appear that the granting of many dubious and overbroad patents is to be expected. Recently, the US courts have heard complaints from several patent holders that, if upheld, could dramatically alter the way the Internet works. For example, the use of plug-in technologies, where a link in the web browser invokes another program, is being examined as EOLAS technologies are claiming a monopoly on the idea (Schofield, 2003). If their case is upheld web browsers will have to be modified to work with plug-ins in a new way and web sites that exploit plug-ins will have to be modified to match. EOLAS will be entitled to demand extensive license fees and the pace of Internet innovation will become bogged down in this newly commodified environment. There is also the example of a California research firm, the ACACIA Research Corporation, which claims it owns the patents on how most audio and video is sent over the Net. The company is targeting the adult video industry, seeking royalties of up to 4% of audiovisual streaming revenue, and it is quite possible universities and distance education could be targeted in the future (Krim, 2003). Decisions over patent granting can be fought in the courts but the average case costs $500,000 per side. This is very expensive for small software houses and not a promising situation for free software development.

Taking into account all these points, many organisations and scholars are beginning to see patents as a dangerous threat to the flow of information on the Internet (Electronic Frontier Foundation, 2004b; FFII, 2004a; Lessig, 2002). It is not just the situation in the US that is worrying, for the European Union is currently deciding whether or not to allow patenting of software and the outlook is unclear at best (FFII, 2004b). Opponents of software patents maintain that extended copyrights and excessive patenting stifles creativity and discourages newcomers to the software market. As discussed, the value of a patent to its holder is that those who want to use the idea contained in the software patent will have to pay license fees to do so. This matters when the evolution of the Internet, and the free flow of information on it are considered. The World Wide Web was not designed by large patent holders such as AOL or Compuserve, but by a researcher in Switzerland. Hotmail was developed by an Indian immigrant to the US,

and later sold to Microsoft. ICQ was developed by an individual Israeli and deployed outside the US before being sold to AOL for $400 million. These innovations were created by people outside of the major industries of the time who needed no permission from the major companies in the market. Without these innovations the way library users access information on the Internet, particularly through the World Wide Web, would be vastly different. This beginning of the Internet was a period of time when an extraordinary explosion of innovation occurred. Software patents, and the licensing of them, enable large corporate actors to control the pace of innovation and commodify the online environment. This erects entry barriers to smaller innovators and information providers, letting established companies maintain their position in the market at the expense of potential advances in information provision that could come from the fringes of the online community.

3. Media ownership of Internet infrastructure

A combination of patents and copyright – control mechanisms – backed up by formidable legal resources and new digital ways of implementing control is therefore threatening the information commons and creating the next phase of the Internet. On top of this the third area for examination, the current climate with regards to the merger and consolidation of media corporations, could also have some severe repercussions on the quality and partiality of the information available in the public domain of the Internet. It is argued that the current climate of media consolidation - perhaps best exemplified by the AOL-Time Warner merger of 2000 and the recently proposed Comcast takeover of Disney in 2004 - leads to an environment where professional standards of journalism and public service are beholden to the profit motive, not the pursuit of truth (McChesney, 2001).

To explore if this is true the extent of involvement of large media and communications corporations on the Internet must be looked at, and this involves looking at the near future of Internet access. In the developed world, Internet access is moving towards a high-speed (or broadband) model away from the early days of dial-up modem access. Broadband Internet access gives Internet users a faster connection and opens up the possibility of access to all varieties of rich media content, including, but not limited to, movies and entertainment. While it is still second to dial-up access, use of broadband (DSL, LAN and cable modem) connections is steadily increasing in North America, Europe and parts of Asia such as South Korea and China. The growth of the medium is especially impressive in the Asia Pacific and South and South Eastern Asia regions (Clickz.com, 2004). The telecommunications infrastructure needed to implement broadband access across a country is different to dial-up modems using existing phone lines. A hi-speed infrastructure will require the laying of new cable and the installation of new hardware at various points in a network.

At this point, however, it must be remarked upon that countries with low levels of Internet access and poor telecommunications infrastructure are unlikely to be concerned with the problems discussed in this section. When making a telephone call is extremely difficult the problems of broadband access are irrelevant. The issues discussed below appear as a country's Internet development becomes more advanced and Internet technology is widely diffused in a society. It might be optimistic to say so, but this situation will one day exist to a far wider extent around the world than it does now.

Should this happen, Internet users in every country will have to pay attention to the affects that broadband access can have on online information flow.

The nature of a hi-speed communications network will impact on the way broadband is used by individuals, the type of services offered and the variety and choice of ISP available to subscribers. On an open network telecommunications companies are unable to leverage control over communications infrastructure. The lack of a centralised network operator leaves the network open to all producers and consumers. Data is transmitted without prejudice or interference on a neutral, non-discriminatory pipe and users decide what applications to run at the end of the network, not third parties. The early Internet, as discussed in Chapter Two and previously in this chapter, displayed these characteristics, utilising end-to-end networking with intelligence, decision-making and innovation taking place on the edges of the network. The network itself remains neutral. This was the situation as far as dial-up access has been concerned in the past, at least in countries with multiple ISPs and a telephone network that permitted access to any providers. Variants of this model exist all over the world.

Alternatively, if a network is owned, whole or in part, the owners of that network would in theory be able to discriminate regarding communications, content, equipment or applications. Open communication networks are facing a number of threats as countries move towards a broadband model of Internet access. On a controlled platform owners can manipulate technology to protect and promote their own interests, refusing to interoperate between different protocols and standards and excluding their rivals from their networks. These methods are attractive to network controllers because they preserve market share, enable price discrimination and diminish the pool of potential competitors in the broadband market.

The relationship between ISPs and network owners is the key to illustrating how a broadband model of Internet access differs from dial-up access. In the dial-up model ISPs bought wholesale telecommunications services from telecommunications companies, and then sold Internet access to customers. In countries like the US this method secured a very competitive market and spurred innovation amongst ISPs. Customers were ensured of a variety of access packages to best suit their needs. This situation changes somewhat when access moves from dial-up to broadband. The different telecommunications infrastructure being used created opportunities for network owners to construct discriminatory conditions for market entry. This certainly is not happening everywhere – South Korea has made great strides in broadband access as a result of competition amongst cable Internet providers (Clickz.com, 2004). Elsewhere however, as in the UK, regulatory intervention and pricing structures appear to be designed to leave only large ISPs in the market thus reducing competition (Richardson, 2004).

In the US cable operators have created discriminatory conditions for market entry by restricting the ability of ISPS to interconnect efficiently and deploying or utilising key technologies that dictate service quality on their terms. Consequently the number of ISPs is falling in the US (Cooper, 2004). In a closed broadband environment such as this, the network effects of the Internet are unable to be taken advantage of. The spread of applications that were previously demand driven slows down, latecomers to the Internet miss out and providers of applications lose business accordingly. According to

Cooper (2004), the sale of hi-speed Internet access in the US is the exact opposite of how narrowband (dial-up) was sold – and innovation is down accordingly.

Companies opposed to an open communications platform for broadband access argue that firms need protection from competition before the costs and risks of invention can be borne. To this end, a limited period monopoly will provide protection – which is a similar argument to that used by advocates of patents. This argument does not hold true on the Internet however, for much of the online innovation in recent years has been the result of feedback, beta-testing or even tampering by users in an open environment. Without such behaviour the chances of technological 'lock-in' are greatly increased. Proprietary control can enable the bundling of services to benefit the network controller, such as when a voice carrier offers broadband services on the same line, or cable providers bundle video and broadband services together. Digital rights management can compound the situation, further locking users in. Larger companies may attempt to provide connection, applications and content, effectively marooning users in a walled garden without means to use alternative applications that are incompatible with the controller's network.

This situation is ideally suited to companies large enough to provide access to infrastructure and content. Control of infrastructure access can be seen in the way US telecommunications company AT&T offered its own proprietary cable Internet service as the only Internet service available for use with its cable modems – no competing ISPs were allowed to offer service over its system (ACLU, 2004). The merger of access and content can be seen in the behaviour of AOL, who provides vast amounts of proprietary content on their networks. It can also be seen in the recent lobbying of the US Federal Communications Commission (FCC) to end rules prohibiting cross-ownership – e.g. the ownership of both newspaper and broadcast media in a single community, or the number of the nation's cable and TV stations a single company can own (Rosenfeld, 2002). Cable companies asked the FCC to regulate Internet service in the same way as cable service already is by declaring cable Internet service to be broadband cable service. This meant they could avoid open communications network obligations and extend their monopoly into the Internet broadband era. The problem here is that diversity of content – previously protected by the unlimited number of ISPs that could connect to the network – would now be in the hands of a small number of cable companies. If the example of cable television can be followed, where cable companies provide at least part of the programming (content) on their networks and at the same time the pipeline for transmitting. The cable companies therefore, have a lot of say over the content transmitted because they get to decide who can use their network. Lessig states: "You get the right to innovate (provide content) depending on whether AOL or AT&T or the music industry like your innovation" (Kennedy, 2002).

An example of the problems of providing services on somebody else's network is Voice Over Internet Protocol (VOIP). VOIP lets users make long distance phone calls using broadband technology for little or no cost. Obviously, telecommunications companies do not want to lose phone business to VOIP and therefore quality of service offered to VOIP providers might be intermittent and poor (Cooper, 2004). On the other hand, cable companies could allow VOIP or video conferencing technologies to be used, as long as they were the ones being provided by the cable company.

Large access providers therefore have a great deal of control over what is transmitted on their networks. Access to content can be controlled by slowing down or speeding up connection speeds or blocking access to certain sites (ACLU, 2004). Content on sites affected in this way would not necessarily be political like those affected by the blocking activities described in Chapter Five. The market approach of entertainment and telecommunications corporations make it more likely that material blocked would be of a commercial nature[41]. Exclusion of competitors' content is facilitated by infrastructure control and to an extent this already happens with the default settings of homepages on services provided by e.g. AOL. Furthermore, smaller information providers can be marginalised as a result of cable providers limiting upstream flows and forbidding users to use the connection to host a server. Such an action means users would remain consumers, and not become producers – or, in the thoughts of Castells (2000a), interacted and not interacting.

As the use of the Internet increases in developed countries, demand for even greater capacities and capabilities goes up too – faster data transfer, streaming services, rich media content and file-sharing services. To take full advantage of these new services the speed of Internet connection must be increased. As discussed in Chapter Four, broadband users experience the Internet differently and the connection speed is likely to influence who spends time online. Discrepancies in access speeds within a population will exacerbate the digital divide, in that those with access to broadband will gain more advantage from the Internet than those with 56K dial-up connections. The Internet Manifesto workshop in Uganda revealed that in parts of Africa the Internet is already referred to as the 'World Wide Wait' (see Appendix 4). Increasing connection divides will increase the gap between those who are able to effectively use Internet-accessible information resources and those who are not.

Faster connection speeds will usher in a new era of content on the Internet. Video-streaming will begin to allow large content owners from the world of television and cinema to offer material over broadband connections. To do so, digital rights management and technological control of infrastructure will be employed to make the streaming of proprietary content as secure as possible for copyright holders. To further lock down the environment entertainment corporations are likely to ally with telecommunications corporations to create an infrastructure that will best protect and promote their product, as well as maximise returns from it. The danger is that smaller access and information providers may get lost along the way, marginalised as a result of anti-competitive practices on the part of bigger broadband players. The Internet is potentially very important to democracy due to its capacity as forum for citizens' speech and self-expression. Without a diverse array of content providers and opportunities for individuals to cross the boundary between consumer and producer, interacted and interacting, the Internet may never get to deliver on its promise.

The United States has again been used as an example of what could happen in the future regarding development and control of Internet infrastructure. What is important from a wider point of view is not specific legislation/regulation in different countries, although this is undoubtedly significant. Instead, as in the case of the PATRIOT Act, or in the moves to extend the rights of copyright and patent holders, this situation gives rise for a

[41] Although it is certainly feasible that supposed political bias in broadcasting could be reproduced in an online format should media corporations consolidate holdings on the Internet (Chester, 2004).

template for access providers in developing countries to draw upon in the future. In this case the template is a business model for a broadband world, a business model that emphasises established capitalist behaviour. With the World Trade Organisation pressing for liberalisation of markets in developing countries in exchange for trade deals, it is likely that some of the US approach to the broadband model of access will be exported. It may even be that transnational telecommunications corporations provide broadband infrastructure in developing counties at the expense of domestic companies. The TRIPS agreement will allow for this to happen (Rikowski, 2003). In such circumstances regulation of Internet services is likely to be left to the market, not the government, opening the door for the possibility of a similar situation to that experienced in the US cable broadband industry.

4. Advertising, the general intrusion of market forces and the consequences of private sector involvement

The direct consequences of increased business involvement on the Internet's common resources are discussed in the following section. Global mass media and telecommunications organisations will benefit greatly from the situation described above but if all information production follows the market, society stands to lose out in many ways. Traditional centres of information such as libraries are becoming more subject to market forces, as public sector funding is cut back and private sector help is sought to rectify the balance. This, in turn, affects what information is created and on what terms it is made available. Even within the private sector itself, new information is created in media research and development departments for commercial reasons – to maintain the market for the corporations. Schiller proposes the example of scientists and researchers – now regarded as 'knowledge capital' on the grounds that one day they might turn a profit for the market (Schiller, 1996). Five specific areas where the increased presence of market forces can be found are discussed below.

- **Advertising**

Investigating the direct intrusion of market forces onto the Internet means concentrating on the top layer of Benkler's Internet architecture, the content layer. When the cumulative effects of copyright changes, patents, DRM and infrastructure are combined, the visible surface of the Internet, in particular the World Wide Web, starts to change. For example, Charlotte's Web, a community computer network in North Carolina, altered drastically after the private sector became involved. Charlotte's Web offered free email and web access to 6,000 local people but it eventually disappeared after private companies moved into the same market and local government funding dried up. The service was originally run on a volunteer basis, with civic groups and churches contributing content for the web site. When the funds ran out a local newspaper bought all the assets and created a web site without any of the community and civic features previously present. The web site became dominated by advertising and its value to the community disappeared (Levine, 2002).

The desire of the private sector to advertise online has been quite clear for a number of years. Surfers are now accustomed to banner, pop-up and pop-under advertising on the majority of the larger sites they visit. Larger online publications, especially those produced for regular consumption, require constant updating and will not pay for themselves. As in the offline world, advertising has proven a way to offset some of the

costs. The online advertising market is expected to have grown 137% between 2001 and 2005, and there are more adverts online that ever before (NUA, 2001; Greenspan, 2004). Online adverts are getting bigger and more complex as rich media methods are utilised. Users of mainstream newspaper sites, such as the New York Times, can expect adverts that follow page scrolling, or intermediary web pages carrying advertising between links. Historically big advertisers, such as car manufacturers and telecoms companies are stepping up their online spending e.g. the auto industry's first quarter spending for 2003 showed a 91% increase on advertising that 12 months before (Mack, 2003).

- **Enhanced listing positions in search engine results**

In the sense that advertising is now such a part of the modern world it is probably churlish to complain about it online, especially if it supports free content. It is entirely possible to ignore advertising in the physical world and it is also possible to do so on the Internet – at the moment[42]. From the point of view of librarians however, there are reasons to be concerned about the reach of advertising online. For example, there are an increasing number of search engines offering enhanced listing positions to companies prepared to pay for it. 'Sponsored placement' is when advertisers pay for a higher ranking of prominence on results pages, relative to a keyword search. Marketers bid for that placement, paying a set price each time a user clicks on it. The market leaders in this area are Overture and Google, and adverts are displayed off to the side, or at the top or bottom of search results. Other search engines however, are less circumspect and sponsored links may appeared labelled as 'featured links', if at all. Surveys in the US have led the Federal Trade Commission (FTC) to suggest that consumers are unable to tell when the results of searches are advertiser-sponsored (Consumer Web Watch, 2003). Search engine companies are loath to disclose whether or not certain links are paid for and the FTC wants ads listed as 'Sponsored' to prevent the public being misled (Olsen, 2003).

However, even if this did happen, it is more difficult to work out if ranking results have been influenced through 'paid inclusion' practices. In 2003, Altavista, Inktomi, and Alltheweb were operating paid inclusion programs within their services. Since then, Yahoo has acquired all three sites in order to augment earnings through paid inclusion (Ibid). Yahoo is one of the 'Big 4' properties on the Internet, and its business practices affect millions of users' searching activities (Alexa.com, 2004). Paid inclusion is when fees are accepted for cataloguing web sites. Services have been developed to guarantee certain companies that their web addresses would be crawled by web spiders more often and therefore generate a better ranking for their web site in search results. In addition to paid inclusion there is also the practice of paid submission. This is where payment is accepted in exchange for speeding up the processing of a submission to the search engine. In both cases, companies with larger financial backing are able to take advantage of the situation far more so than small information providers.

Regarding these commercialized practices, the search engines involved argue that rankings are unaffected but Danny Sullivan, editor of the influential Search Engine Watch, says this is not the case (Olsen, 2003). The extent of the paid inclusion

[42] However, just as technologies are being developed to prevent viewers fast-forwarding through adverts on DVDs or recorded TV programs, it is likely that the same situation will be seen on the Internet in the coming years.

phenomenon is not widespread, with only 3 million out of 1.5 billion web pages paying to be crawled more often, but regardless of this consumers have no idea it is taking place (Ibid). It is important to recognize the phenomenon as having an effect on information flow, regardless of Yahoo's opinion that if consumers get what they want then that is what matters. Users rarely look beyond the first page of search results meaning that it does not matter what is indexed – it is more important to come up on the first screen (Naughton, 2002). If this is the type of model that is being used to frame the future of general searching then several issues are raised. If the search process is not objective then some voices will be heard over others, and the ones with the most money are likely to be the ones with the loudest voices. From the point of view of libraries, the quality or neutrality of information discovered on the net may well be compromised by these practices. The online version of the Habermasian public sphere is tainted, in that commercial interests are influencing the flow of information at the very place most people go to start looking – the search engine.

- **The scientific management of marketing: Spyware and registration for web sites**

The extensive use of advertising in the physical world is certainly not a new phenomenon. Consequently, it is no surprise that advertising has moved online to support the provision of Internet resources. What is different about the online advertising environment is that advertisers can make far greater use of Internet users' traffic data to identify personal preferences or trends in the wider market. Advertising can be far more targeted than in the offline world. Chapter One introduced the concept of scientific management and its effect on the production process. According to Robins and Webster, the same principles that led to rationalisation in the workplace and the growth of mass consumption demanded the regulation of this consumption in the marketplace in order to work (Robins and Webster, 1999). In order to do this, market researchers began to gather information on consumer purchasing habits while advertising firms attempted to generate demand to meet production. By the 1920s and 1930s, this information had become the oil that lubricated the production machine.

In the online marketplace of today, information workers – market researchers, data brokers – are as, if not more, important than ever. World marketing requires a major strategy of surveillance and intelligence and ICTs are used to aid information collection on a global scale. Through online information gathering activities such as the use of cookies to monitor web surfing and online registration for marketing purposes, the Internet has become an extension of the offline marketplace, where identified consumers are targeted with specific information in order to generate demand for goods available online. Recent surveys have estimated that 1 in 3 computers are infested with some form of spyware, programs that collect information on users' surfing habits and relay this information back to marketing companies so they can better target their advertising (Delio, 2004). The collected data is aggregated into databases that can be used in future advertising campaigns.

The use of spyware could be considered an invasion of users' online privacy and a brake on freedom of expression. When spyware programs are installed on personal computers without their owners' permission – a highly common phenomenon – users' information seeking preferences are revealed to third parties and used for commercial gain. There is an undoubted trade off between personal privacy and consumer utility, a

relationship that is similar to that of personal privacy and national security. As Noam (2002) points out, the commodification of users' Internet traffic data can lead to a faster flow of information online and greater utility for consumers. This is in a commercial sense however, for the end point of aggregating traffic data is to better target advertising and eventually raise consumption of goods, regardless of whether the good in question is a book or a fact in a database.

Another example of how personal data is collected by information providers is the registration process. Many web sites are providing content in exchange for registration. When large-scale providers of content, such as newspapers, first tried to impose a pay model on Internet users for accessing information, users balked (Glasner, 2004). This lead to an advertising supported model with information seekers required to view advertising in exchange for content. The online magazine *Salon* uses this tactic – users can get a free day pass to its content if they sit through an online commercial (Salon, 2004). More recently however, this model has been complemented by a registration process approach that collects user data in exchange for access to articles. Advertisers wish to know more about web sites' readers and target advertising via email accordingly. User registration is now increasingly common in the online newspaper industry and, while most provide an 'opt-out' option to refuse the chance to receive email adverts relating to surfing preferences, others, such as the Chicago Tribune, provide their readers with no such way out (Glasner, 2004). Furthermore, user registration can lead to content being refused on locational grounds, a very uncommon experience in the early days of the Internet but one that is increasingly familiar as technology advances. Geolocation techniques can be used to restrict or charge overseas users for access to certain resources, as practised by the Times of London (Quova, 2002). Use of geolocation technology raises a number of issues, from the compromise of user privacy to the construction of legal boundaries to restrict access. It can also be used to consolidate content lock in along with DRM, for as different countries have different copyright legislation and business rules, access to certain types of content can be restricted on the grounds of where the user is. This raises consequences for users in developing countries where provision of local content is thin at best.

- **Subscription business models**

The consequences of such an environment are some very direct blocks to Internet-accessible information resources. Simply put, getting the best access to information resources on the Internet is increasingly requiring greater financial resources on the part of the user. Online news services spearheaded a change in attitudes towards charging for access, trying to wean users away from free content by offering premium services in exchange for payment (Gibson, 2002). In libraries, costs to individual users are often covered by budgets as public and academic libraries attempt to keep the costs of accessing information as cheap as possible. While Internet-accessible information resources such as Internet-based news services will be able to be accessed through library computers and users may have to pay for access to archived resources, academic libraries are more concerned with access to online scholarly resources. The situation in this area has been a cause for concern in the library community (Atkinson, 2003), and all interview participants discussed the implications for libraries.

Vanessa Hayward, Keeper of the Middle Temple Law Library in London, pointed out in an interview that subscriptions to online resources in her library are increasing annually.

Her analysis of the market was that information providers are interested in monopolies, taking over smaller suppliers and leaving subscribers at the mercy of the giants who can charge what they want – this was echoed by interviewees elsewhere in Europe and by comments from African librarians. She also described a situation where varying payment options (such as the pay-as-you-go search option offered by Lexis) are playing into the hands of information suppliers – pay-as-you-go plus a complex interface means failed searches and greater expenditure. Sheila Corrall at the University of Southampton echoed these feelings for the UK academic library sector, stating that journal subscriptions/online information resource costs are increasing year on year well above the rate of inflation. The head of the Belgrade University Library also agreed that this situation is present in Balkan academic libraries, while the issues of journal subscription cost were mentioned as a problem in Africa by those who attended an Internet workshop in Uganda.

Other senior information professionals interviewed during the research also acknowledge a problem in journal pricing and licensing structures. Geoff Smith, Head of Co-operation and Partnerships at the British Library concentrated on the licensing aspects of journal access, stating that publishers are wary of 'access for all' models which they believe leads to people remotely accessing information and not paying for it. He warned that while libraries can come together with good bargaining powers to buy resources in bulk, access may never be as wide as is wanted due to the pressure on library budgets and the continuing prices rises in subscriptions to electronic resources. In fact, Smith was one of the interviewees who most clearly recognised commodification of information as restrictive barrier, saying that businesses had treated information as a commodity for as long as he could remember. The fact that the phenomenon continues to extend to print materials as well means an impact on the budget available for electronic materials.

The way libraries approach these issues will be a question of selection, with access to Internet accessible information resources influenced by budgetary constraints. Access to scholarly information materials will be a particular headache for libraries if the prices of accessing these resources continue to rise. The current situation arose as a result of professional societies turning over journal publishing to private firms in the 1980s in an effort to contain membership fees and generate income. However, the short-term financial gains disappeared once journal prices outpaced library budgets and access to materials diminished accordingly. Prices increased, and often titles could only be accessed through restrictive licenses that might require an aggregate/bundled purchase of journal titles (Kranich, 2004b). As technology evolved, so did the business models behind journal access. The advent of online access to scholarly publications bought with it easier access to materials from a single entry point, but it also ushered in a new age of tiered price systems and restrictive licensing. Annual price increases (for many titles of between 6-12%) have seen libraries cutting journal subscriptions and attempt to find alternative models of scholarly publishing (Atkinson, 2003). This point was echoed by interviewees. As Atkinson (2003) points out, "University librarians are now being forced to work with faculty members to choose more of the publications they can do without".

- **The privatisation of public information**

In addition to libraries worrying about subscriptions to privately provisioned resources there are information resources already paid for by the taxpayer that are succumbing to the forces of commodification. A recent controversy is the US Department of Energy's decision to close the free online research database Pubscience after receiving complaints from commercial companies that it competed too closely with their efforts. Pubscience was a searchable database of more than 2 million documents on physical sciences and energy-related research. The documents came from over 1,400 scientific publications. A number of private firms existed that gave researchers access to abstracts, and then sold then full-text documents on request. As the US government, in its many forms, is forbidden to interfere in the market or compete with the private sector in business, the private sector had always lobbied for the closure of the government web site, saying Pubscience was effectively duplicating private sector offerings. Much of the research available on Pubscience was free, as the US govt subsidizes 80-90% of scientific research and development in the public sector to the tune of billions of taxpayer dollars. Despite the research community's opinion that Pubscience was more comprehensive than private offerings, the Department of Energy closed the web site at the end of 2002. Users interested in the fruits of the publicly funded research will now have to deal with privately owned commercial interests to access it (Olsen, 2002).

A US public database detailing the awarding of federal contacts was also recently outsourced to a private contractor meaning the US public will have to pay to find out which private companies their taxpayer dollars are going to (Scherer, 2004). The Bush administration privatised not only the collection and distribution of the data, but also the database itself, meaning the information is not directly available to the public or subject to the US FOI Act. As online information provision becomes more profitable it is likely that many governments will be considering whether the public or private sector should provide government data online. As government data forms an important part of the information commons this is a crucial decision for the future of public domain information on the Internet. In the US both the National Weather Service and the National Oceanic and Atmospheric Association web sites have been asked by private companies to take information down, and Pubmed Central, a health-related research site, has been also targeted by trade groups (Olsen, 2002). Quoted in the New York Times, Paul Uhlir, Director of International Scientific and Technical Information Programmes at the National Academies of Sciences asked "Since the information was all publicly funded in the first place, the question from a public policy standpoint is, was this in the public interest?" (Ibid). This is an important question to ask, and is relevant to more countries than the US. Freedom of information, as discussed in Chapter Three, is commonly associated with a right of access by the public to official information. The UK the Freedom of Information Act is due to come into force in January 2005 but it has recently been held up by treasury plans to introduce charges for accessing information some 686 to 958% higher than indicated in the 2000 proposal (Henke, 2004). Online applications for accessing information will seem less appetising as a result and critics have questioned the UK government's commitment to facilitating citizen access to information.

A commodified online environment

It is interesting that cyberspace, once thought of as everywhere and nowhere, is becoming so connected with the physical world – be it through any of the processes described above. The result of these phenomenona such as targeted advertising, user registration or geolocation technology, for example, is that access that is more dependent on the sharing of personal information or users' physical location in the world. The online environment is beginning to resemble the markets of the physical world, where the commodification of information has reached library services in all sorts of ways (Schiller, 1996). Information vendors wish to capture all the downstream value of their information, raising the costs of becoming a user and further commodifying the environment for future information production. Users become consumers in many more ways, and if they do manage to produce information it is more likely to be information relating to their surfing habits rather than personal web sites. If personal information is commodified and traded for access to information resources then users' are receiving little or no privacy protection during information seeking activities. Providing false details can fool registration processes but as geolocation technology becomes more advanced, and new Internet protocols such as IPV6 are introduced, it will become easier to tell if registrants are telling the truth (Raiden.net, No Date). Spyware and commercial monitoring of Internet use, on the other hand, requires even more action on behalf of the user if surfing preferences are not to be given away to companies keen to sell on the information to marketers. This type of information is also of great interest to government security agencies. The war against terror has led to databases such as the MATRIX, discussed in Chapter Six, where public information on individuals is being combined with private data provided by data aggregators (Zetter, 2004b). Because laws that restrict government data collection often do not apply to private industry, governments are able to bypass restrictions on domestic surveillance. In an email interview, Jonathan Peizer cites the close relationship between private companies and government in the US in developing surveillance software for the war against terror (Email from Peizer, 2004a). This private/public combination and the commodification of personal information is a serious threat to user privacy and therefore a direct threat to freedom of expression online.

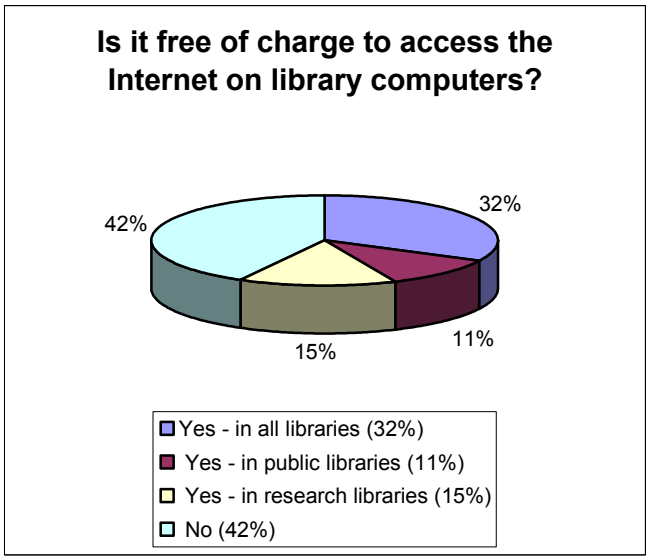
This situation, and the increasing involvement of corporations online typified by the actions of large media companies seeking to amend copyright legislation, enforce patents and employ DRM measures, will undoubtedly influence the future architecture of the Internet. Registration in exchange for web site access, and then the commodification of that information to facilitate more targeted advertising is increasing. The need of companies to gain a return on their online investments is the force behind this. This creates an environment where the information circulating online becomes commodified, with special value being attached to information about users' preferences. The increases in advertising relating to search results has particular consequences for information access, especially if information seekers are unaware that the information presented to them may be the result of paid inclusion. All of these actions combine to create a more commodified environment for information seeking activities to take place in. Such an environment is an indirect block on accessing information resources on the Internet, in that freedom of expression is curtailed by the lack of privacy, commercial interference and an indirect pressure to become a consumer, rather than a user, of information.

Financial barriers to Internet use in libraries

Much of the previous discussion has mentioned libraries as information providers only in passing. As discussed in Chapter Four, libraries exist to provide information resources to users, and must offer as wide an access to these, in any format, if freedom of access to information is to be as equal as possible. The commodified information environment creates another obstacle for libraries to overcome as definite financial hurdles begin to appear to information access. Subscriptions to scholarly journals take up large parts of academic library budgets but public libraries will often have to pay for access to online databases too. The extent to which online subscriptions are a problem obviously depends on the financial state of a country's public library service and how budgets are allocated in any individual country. It depends on funding levels, how secure they are and whether or not libraries are required to generate income for themselves. The real issue to consider is the extent to which the cost of accessing Internet resources is passed on to the user. If university libraries such as the University of Belgrade are charging users for basic Internet access then some students may not gain full access to the university's academic resources[43]. If public library users are charged to access the Internet in order to contribute towards the costs of hardware, connection or subscriptions to resources then there will not be equality of access for all members of the community. Some users will be better placed to benefit than others. On the other hand, if these costs can be covered by public money then the chances of equal access, at least to the Internet itself, are increased. On a global scale it is extremely difficult to estimate the amounts public libraries spend on online resources and whether or not these levels are increasing but, as illustrated by the interviews cited above, anecdotal evidence would suggest online subscriptions constitute increasing parts of libraries' spending. The empirical investigation into financial barriers to accessing information on the Internet therefore concentrated on assessing the extent to which libraries around the world do have to charge for basic Internet access. Question 4 of the survey of IFLA member countries carried out in 2003 examined whether or not countries made a specific charge simply to access the Internet - a charge for time on library terminals.

74 countries replied to this question, which asked whether it was free of charge to access the Internet on library computers. The question gave the respondents a chance to differentiate between public and research libraries if one charged for access and the other did not, or to indicate if access was free in all libraries. The results are indicated in Figure 24 overleaf.

[43] As revealed in an interview with Dejan Ajdacic, Director of Belgrade University Library



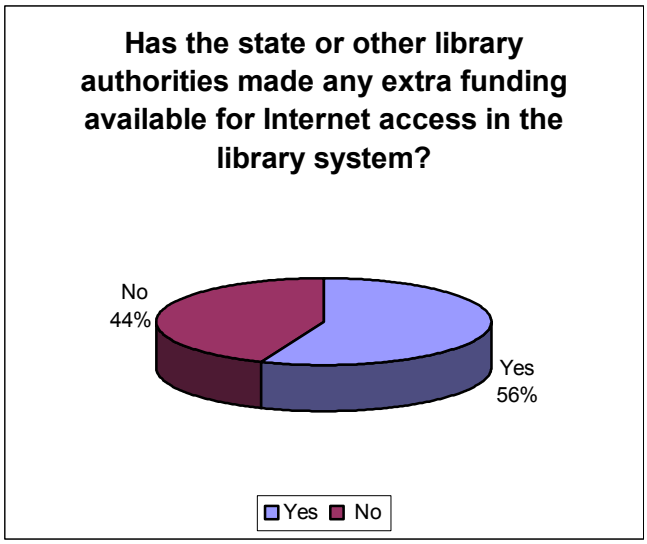
Global results - 74 countries*

*No answer from Mongolia, New Zealand, Swaziland and Vatican City. The following countries - Canada, Egypt, France, Hong Kong, Italy, Malta, Moldova, Russia, Sweden, Trinidad and Tobago and Uruguay - ticked two boxes (e.g. one tick each for 'Yes, in public libraries' and 'Yes, in research libraries') and are not included in this chart because of ambiguity about what they meant by this.

Figure 24: Is Internet access free of charge in libraries?

Nearly a third of all respondents were able to provide free Internet access in all of their libraries. However, 42% of respondents stated that using the Internet was not free of charge in their country's libraries and consequently it cannot be said that there is a free and equal access situation in these countries. Ideally, according to the IFLA/FAIFE *Internet Manifesto* (2002b), basic access to the Internet is considered a core library service and should be free of charge to users but this is not happening in many parts of the International library community. Africa especially is unable to provide free access, with 10 out 14 respondents indicating that services are charged for. 50% of respondents from Latin America and the Caribbean also reported charging for access. In other regions the results are more mixed, with a fairly even split between charged and free in Oceania. Europe has the largest proportion of countries that offer free access in all libraries, 27 out of 34, but countries such as Andorra, Bosnia and Herzegovina, Bulgaria, Latvia, the Netherlands, Poland, Slovakia are unable to offer a free Internet access service.

The second part of Question 4 asked whether or not the state or other library authorities had made any extra funding available for Internet access in the library system. The idea was to find out whether libraries were being adequately supported in moving into the new era of the information society. Many countries have had specific initiatives to bring libraries online, but others have had to adapt to new times using old budgets. The results of Question 4b are shown overleaf:



Global results - 89 countries

Figure 25: Has extra funding been made available for Internet access in the library system?

Just over half the respondents indicated that they had benefited from extra funds to increase Internet access in the library system. The results of this question are encouraging when looked at in this way, for it would seem that some governments have made the link between libraries and provision of Internet access and have been prepared to back it up with financial resources. The data is more interesting when looked at regionally however, where it is possible to see that in Africa 8 out of 13 respondents had not received extra funds. In Latin America and the Caribbean there was an even split of 7 who had and 7 who had not, while in Oceania 2 countries received funds to 3 who did not. In Europe 21 countries did receive funding which was almost two thirds of European respondents.

The consequences for libraries of this environmental change

It is apparent, as will also be shown further in the conclusion, that financial problems are creating direct obstacles to accessing information resources on the Internet. These problems are more pronounced in countries with developing Internet infrastructure but they exist on a wider scale as well. What is difficult to examine, at this point, is exactly how library users will be affected by the ongoing assault on the information commons. What appears certain is that the Internet is changing, and the quality of information in the public domain is under threat. The emergence of a legal infrastructure designed to protect the rights of large businesses and underpinned by technological measures is shrinking the amount of Internet-accessible information resources available at low cost to library users. The architecture of the Internet itself is being altered to ensure that more control is possible at each of Benkler's three layers.

At the physical layer, which has always been generally controlled, computers are private property and networks have been built with private money. No one has the right to use the wires of an ISP without paying. If access were free for everybody then those who lay the wires and buy the machines would lose incentive to do so. For the Internet to reach its potential and for information to flow freely across the network, the physical layer has to be a competitive environment for the user to exploit. Consequently, a neutral approach to this layer would be appropriate. If not, the power of monopoly

physical providers (cable companies, ISPs) can be abused. Alternatively, to briefly revisit Chapter Five, a similar situation is created by nation states controlling Internet backbones such as China or Saudi Arabia, or the variety of countries with one ISP like Vietnam, Ethiopia, or Burma.

The code layer of the Internet has been the layer that has been most free from the beginning, and is the place where most innovation was possible. Access to a neutral network similar to that used in Europe and the US is in the past now, however, and, ignoring the problem of the digital divide momentarily, broadband access is moving in to replace slow 56K link ups. Should it come to pass that the broadband Internet of the near future will suffer a lack of competition in terms of ISPs, private parties such as telecommunications corporations will be able to dictate the way the network develops. By layering new technologies onto the code layer greater discrimination is facilitated, including the type of protocols and applications that are allowed to run on the network such as firewalls, DRM-friendly protocols or the installation of filtering/blocking software. The possibility of 'walled gardens' on the Internet, controlled by private interests and operating under the logic of market forces, could become a reality.

Finally there is the content layer. The code layer inevitably impacts on content by discriminating as to who gets access to it, but there are further problems on this top layer also. Control of copyright through DRM is impacting on the content layer and the amount of individuals' freedom to express themselves online is being curtailed at the same time as the amount of content in the information commons decreases. This situation, coupled with the commodified environment described in the previous section provides obstacles to freedom of access to information.

Conclusion

The International Institute for Democracy and Electoral Assistance (International IDEA) pointed out in a report for the 2001 Democracy Forum that the Internet, in its role as a public sphere, could be made or broken by the quality of information available in this new 'commons' (IDEA, 2001). The information commons on the Internet is coming under attack from all sides by the forces of commodification. Benkler states: "We are making choices at all layers of the information environment – the physical infrastructure, logical infrastructure, and content layers – that threaten to concentrate the digital environment as it becomes more central to our social conversation" (Benkler, 2000, p568). Intellectual property law, digital rights management and regulation of Internet infrastructure are the areas in which these choices are being made. The effects of the choices are currently leading Internet users towards more information resources that need to be paid for, at the same time as commodifying their information seeking choices and feeding a reflexive advertising loop that starts the whole process again. Libraries will offer Internet access to users in these conditions, and will feel the effects of copyright legislation quite explicitly. Even before the Internet libraries and copyright holders sustained a close relationship, now, in the age of DRM, copyright holders are able to dictate access conditions more than ever before. How library users will fare as a result of this situation is currently undecided, but should the costs of accessing copyrighted material online continue to increase they may have to be passed onto users at some point. While the results of Question 4 are generally encouraging for developed countries there is a concern over whether basic access to the Internet can remain free in circumstances such as those described in this chapter. This means an even greater

headache in countries with low levels of Internet access, for development of the Internet in these places will be occurring at the same time as the Internet becomes more commodified. How it is possible to provide free access to Internet accessible information resources in such conditions is unclear.

Conclusion

Introduction

Three years of studying the Internet on a global scale has revealed a technology that is becoming ever more accepted into society. This is as true of developing countries as it is of those in the vanguard of Internet adoption. The number of Internet users worldwide is rising fast – growing unevenly around the world but growing fast. During research trips in Europe, North and South America and to Africa, I have seen evidence that access to the Internet is becoming part of daily life for many people, even if there are still very real limits to the extent that whole populations can go online.

In the past three years the Internet environment has been undergoing great changes, as well as great strides in diffusion. The amount of web pages continues to grow, along with the amount of good quality and poor quality information. New Internet technologies such as Voice over Internet Protocol or the dynamic systems behind the phenomenon of blogging have become popular – even in supposedly restrictive countries such as Iran (BBC, 2003d). New initiatives have begun to create Internet infrastructures for libraries in countries such as Chile and Colombia. As new Internet technologies diffuse however, the environment into which they seep is also changing. The businesses that survived the burst of the dotcom bubble have begun to turn a profit, illustrating that the Internet can be a pace where successful business can take place (Frey and Cook, 2004). Consequently, major business initiatives have been launched online in the last three years, cementing the Internet's position as a facilitator of global trade. The growth and rapid take-up of online music stores such as Apple's iTunes is one such example (Smith, 2004). The online environment has not just been touched by business however, and the period 2001-2004 has also been defined by the fallout from the terrorist attacks on the World Trade Centre in New York. Since the end of 2001, security issues have affected the flow of information on the Internet as much as any business concerns. Indeed, for the first time security and technology have been able to be combined on a massive scale without any fear on the part of governments that civil liberties concerns would impair implementation of surveillance systems. Since September 11th 2001 the United States and its allies have been in a state of war, an unconventional war perhaps but a war nonetheless. As Giddens (1989) would point out, in wartime there are different requirements on both nation states and citizens. This period is no exception.

This PhD project has been looking at the extent to which libraries can ensure access to Internet-accessible information resources remains free, equal and unhampered, on a global scale. The overall aim of the research has been to identify barriers to accessing information on the Internet and enable an understanding of the forces that create them. Consequently hypotheses regarding how to overcome barriers may be generated. It has been a unique project in that the research has been carried out between the two poles of theory and practice. The twin sponsors of the research, the Royal School of Library and Information Science (RSLIS) and IFLA's FAIFE office have had different requirements to satisfy during the period of study. The impact of this is that academic focus has, at different points during the three years, swung between the two poles, and between two similar but different goals and expectations. The work produced has often been more useful to one sponsor than the other. The IFLA/FAIFE World Report 2003 (IFLA/FAIFE, 2003a), for example, has founded a knowledge base regarding freedom

of access to information and the Internet in libraries. The practical role of such a document and its use for supporters of FAIFE differs from the more scientific articles that have been produced for academic journals (Hamilton, 2003; Hamilton and Pors, 2003). Likewise, RSLIS has required attendance at PhD courses dealing with theoretical aspects of LIS; involvement with FAIFE has involved attendance at library conferences of varying topics. Obligations to both sponsors have affected research priorities and often tight timescales and deadlines have been imposed, along with a heavy workload. The production of the IFLA/FAIFE World Report Series every spring is a case in point. Three years have passed where I have needed to be both a staff member of FAIFE *and* its PhD student.

However, as mentioned in the introduction, this situation also has advantages, for the resources and connections of the international library community via IFLA have never been far away. The support and resources available over three years have meant that research on a global scale has been able to be carried out, even if there are elements that could have been handled differently. The problem has been to approach the issue of access to Internet-accessible information resources in such a way as to satisfy the requirements of both sponsors. For FAIFE, the area of research was the identification of barriers to accessing information resources on the Internet, on a global scale, and proposing ways in which the international library community can overcome them. For RSLIS it was the same, but with the research grounded in a theoretical framework appropriate for global level research. Solving the problem would therefore have to take into account three factors:

- The scale of the research
- The cultural diversity of the global library community, and differing attitudes to information as a result of this
- The requirements of both FAIFE and RSLIS

While the scale of the research was novel for a PhD, it was perhaps too big an area to 'solve' the problem. Consequently, the problem was redrafted to concentrate on identifying access barriers, with solutions being provided only when possible. The research had to be more focused too, and, while not ignoring academic and special libraries, more of a focus has been placed on public libraries. The cultural differences between countries have been difficult to ignore but also difficult to adequately investigate, and the research has been limited, if that can be said, to attempting to use as wide a range of resources and contacts as possible, and to carry out, as best as possible, a global survey of attitudes towards accessing information on the Internet.

As discussed above, satisfying the FAIFE and RSLIS obligations has meant that the research has fallen somewhere between the two camps, marking the thesis as unique. Despite this, the problem was able to be sorted in a traditional way into critical questions that constructed a framework for the research to take place within. This framework has enabled identification of barriers that exist to accessing information on the Internet, the consequences for online freedom of access to information and freedom of expression and the role of libraries as Internet access providers in this environment. This dissertation has concentrated on answering the four critical questions outlined in the introduction, and the sub-questions that accompany each one. The following is a summary of the critical questions asked, and their answers. After this summary is a discussion on the major findings of the research relating to the theoretical framework

used. These findings are then combined with the results from the empirical investigations described in Chapters Three to Seven to construct a model of Internet development and access barriers. This section incorporates further empirical findings which contribute to the following section describing what libraries can do to tackle access barriers. Finally, some overall perspectives on the research are offered, along with the identification of areas for future research. The format of this conclusion is therefore as follows:

1. Summary of critical questions and their answers
2. Major research findings in light of the theoretical framework
3. A model of Internet development and access barriers
4. How libraries could overcome barriers to Internet-accessible information resources
5. Perspectives on the research
6. Future areas for study

1. Summary of critical questions and their answers

Chapters One, Two, Three and Four addressed the first critical question and two sub-questions:

1. What is the nature of the Internet?
1a. What is the extent of Internet use around the world?
1b. What is the extent of Internet provision in libraries?

These questions were asked in order to identify the role of the Internet in global society, as well as to assess the extent of the technology's reach, particularly in libraries. Through the use of statistical resources, empirical research and LIS literature on the Internet and libraries, answers were given that created context for the rest of the research's findings:

- The nature of the Internet is that of a global information resource, accessible by anyone with an Internet-connected computer who possesses the skills to retrieve and use information. Internet technology underpins the 'Network Society' of (Castells, 1997; 2000a; 2000b), where the nation state, the globalised economy and the individual are the key actors
- The Internet facilitates nation state information gathering and global capitalism, and enables individuals to become 'interacted' or 'interacting', a condition that is very much dependent on the type of Internet experience they are offered
- Internet use around the world is currently small (at just over 10% of global population); uneven (between developed and developing countries) but rapidly growing (again, unevenly)
- Internet access in public libraries is less widespread than in academic libraries, with global use inequality reflected across international library community. The role of the Internet in the library is as an information provider and communications tool for all users of library – it exists to provide access to wide variety of information resources

Chapters Three and Four looked at the second critical question and its sub-questions:

2. Do people have a basic right to freedom of access to information via the Internet?
2a. What is freedom of expression?
2b. What does freedom of access to information mean?
2c. How do these concepts translate to the Internet?
2d. How do attitudes to information access differ around the world?
2e. What factors contribute to this?

These questions combined technology and human rights and enabled consideration of cultural differences that affect access. The same sources were used as in the first critical question and the answers allow assessment of the expectations global society has regarding Internet technology:

- As per Article 19 of the Universal Declaration of Human Rights, from a human rights perspective people have a right to access information through any medium, regardless of frontiers
- Freedom of expression is the freedom of the individual to express his or her thoughts and opinions through whatever medium they see fit
- Freedom of access to information is the right of citizens to not only express any views, but also to have access to the fullest range of views expressed
- When translated to the Internet these concepts mean that users should be able to communicate and post information without fear of retribution; and that any Internet user should have access to the information resouces of their choice without barriers being placed in their way
- Theoretically, freedom of access to information and freedom of expression are limited only by the demands of a country's laws, especially laws related to privacy. In practice they might be limited by information control methods such as censorship.
- Both theory and practice are affected by the developmental, cultural, political and economic characteristics of a given country – while it might be true in theory to say that human rights are no longer domestic policy, it is not necessarily true in practice
- Access to information on the Internet is therefore limited by the practical realities of access in any given country as defined by the characteristics outlined above

Chapter Four sheds some light on what these practical realities are by asking:

3. What constitutes access to the Internet?
3a. What is meant by "access to Internet-accessible information resources?"
3b. What exactly are the information resources being discussed?

These questions focused on what factors contribute to access, what conditions have to be in place for the offering of free, equal and unhampered access in libraries, and what users should be entitled to access. Through use of the same sources as questions one and two, the findings here were that:

- Access to the Internet is many faceted, comprising of mental barriers, material access, digital skills and (differential) usage access (Van Dijk and Hacker, 2003). While these four categories can be broken down further to allow more focused investigation, they provide an adequate framework for the investigation of access to the Internet in libraries
- Computers, plus an Internet connection, give access to the Internet but digital skills are needed to gain access to Internet-accessible information resources
- A definition of 'information resources' is likely to be remarkably broad, more so if the 'Internet-accessible' is added as a qualifier before the term. For the purposes of this research, information resources are defined as collections of knowledge which are accessible to the learner, such as books, magazines, newspapers, film, audio and video recordings or data stored in computer memory, on magnetic tape, on fixed, moveable or compact disks.
- Internet-accessible information resources, therefore, are such collections that can be remotely accessed via the Internet – the information having been digitised and stored at a remote location ready for retrieval by the user. This information should be able to be retrieved via the World Wide Web, or through remote databases that are provided by e.g. libraries.
- Furthermore, because individuals are also repositories of information, email, discussion groups, relevant chatrooms and mailing lists should all be accessible through library Internet access. Users should not just be passive receivers of information – the interacted – they should be information providers – interacting – too

The fourth and final critical question was the most important, for it concentrated on the main objective of the research – identifying barriers to accessing information on the Internet. The theoretical framework that resulted from answering the first critical questions moved the research to focus on the nation state and the globalised economy as the motivating forces behind the creation of access barriers. The following questions were answered in Chapters Four to Seven, using the same sources as before:

4. What barriers exist to accessing Internet-accessible information resources and why?
4a. To what extent are the barriers the result of the actions of nation states?
4b. To what extent can the effects of a globalised economy be held responsible for the creation of barriers?

These questions sought to identify factors that interfere with individuals' *rights* to access to information on the Internet (as defined in critical question two) and barriers that stand in the way of *access* (as defined in critical question three). The sub-questions looked at the motivation behind the creation of these factors and barriers, while seeking to identify seeks solutions to overcoming the barriers within the library community. The barriers identified were:

- The digital divide
- The filtering/blocking of Internet-accessible information
- The surveillance of Internet use and the retention of Internet user data;
- The commodification of Internet-accessible information
- The increasing corporatism of the Internet

The motivation behind the creation of these obstacles is the following:

- The nation state's imperative to survey, along within changes in the global security environment since 2001 (motivation) contribute greatly to the manipulation of information flow on the Internet. The effects of online censorship and surveillance create direct obstacles to freedom of access to information and freedom of expression
- The ability of the Internet to facilitate new forms of commerce has increased online economic activity and transferred some of the inequalities of the offline marketplace in cyberspace
- At the same time, new online business practices threaten old, meaning established businesses seek to exclude competitors, maintain business models and consolidate power (motivation) – this means the enacting of legislation that gives increased intellectual property protection while decreasing innovation and reducing the information commons
- Both nation states and market forces therefore throw up barriers to access, but the digital divide is a fundamental barrier that reflects global inequality of wealth – it can be found on individual, national and international levels all over the world
- The digital divide is a wide-ranging concept that is narrowly translated as the gap between those who have Internet access and know how to use it and those who do not. In reality, the digital divide is multi-faceted, and includes differences in users' access to appropriate computers and connectivity, skill level, access to relevant content, connection speed and types of use
- If the digital divide can be said to have a motivating factor, it is that the richest and poorest ends of global society continue to move further apart – inequality between people/countries/regions is inevitable as a result (UNDP, 2003). In 2002, 72% of all Internet users lived in high-income OECD countries, with just 14% of the world's population (UNDP, 2002)

2. Major research findings in light of the theoretical framework

The critical questions provided a logical progression towards identifying the main obstacles towards accessing information on the Internet. As part of the process the questions were also able to construct a framework appropriate for analysing the Internet on a global scale. Castells' network society provides a conception of the Internet as a global organising technology that is able to facilitate communications and interaction on an unprecedented scale. This scale is represented by a conception of globalisation that identifies nation states and the actors in the globalised economy as being of equal importance, albeit with specific areas of influence. The theoretical framework views the Internet as a facilitator of relations between individuals and these actors, and the research was able to concentrate on the way the nation states and transnational corporations are able to affect the development of the Internet and, consequently, the way individuals experience their use of the technology.

The effects of the digital divide, censorship, surveillance and corporate interference on the Internet environment have been detailed with examples in Chapters Four to Seven. The major research findings of this dissertation include some of these examples, and contribute to a tentative model of Internet development that allows for contextual

differences between countries and regions. This is discussed further below. At the same time, however, placing the findings in the context of the theoretical framework allows a valuable discussion on how the results of the research can contribute to an understanding of Internet access on a more academic level.

- **On the network society and the digital divide**

The centrality of the Internet to the 'network society' proposed by Castells can be seen in its role as a global information provider, enabling users to access information from any point, at any time. The Internet is an 'expert system' as proposed by Giddens – disembedded and reliant on trust, allowing the separation of time and space and enabling the connection of the local, regional and global. Through interviews and discussion sessions in Berlin and Kampala, it was clear that the Internet was seen in these contexts, as interviewees testified to the advantages of the medium as an information-seeking tool in libraries and as a facilitator of information sharing networks across institutions and borders. The centrality of the technology to global society is also seen in the continuing rise in user numbers as the technology diffuses throughout the world, as well as the keen embrace by less democratic but capitalistically minded countries such as China, who fear being left behind should the technology not be taken advantage of. It is the facilitator of Castells' 'informational economy', in that business all over the world has embraced the potential of the Internet to sell information.

Castells' concept of the interacted and interacting is closely related to some of the problems and access differentials seen in a broad conception of the digital divide. This can be seen in varying digital skills, usage differences, as well as in those who can afford to access certain services and those who cannot. The concept therefore fits into the frameworks constructed for the discussion of the digital divide provided by Norris (2001), Van Dijk and Hacker (2003), or DiMaggio and Hargittai (2001).

- **On the nation state**

Skill levels aside, the extent to which an individual is allowed to use Internet technology will also undoubtedly have an effect on the extent to which they are able to become one of Castells' interacting. Technologies that can aid democracy and empower the information poor can also be used to cement existing power structures and manipulate information. Technology is a tool, its benefits depend how it is used and, as Castells points out, the state can suffocate technologies or master them to accelerate technological modernisation. Examples can be seen in the way Cuba has tried to influence diffusion of Internet technologies by restricting physical access, or in the way China has tried to master it for economic advantage while at the same time controlling unwanted information flow. The existence of national intranets creates the same situation, for users in countries like Myanmar, North Korea, and now possibly Iran are unable to access more than a state-controlled limited set of services, limiting the possibility of interaction and increasing the extent of passive information receipt. Membership of the network brings growing benefits but not being in brings growing costs.

Suffocating technologies, or physically limiting their availability is one thing, but subtle manipulation of information is another. The nation state's desire to control information flow, propagate ideology and maintain control of authoritative and allocative resources

suggested by Taubman (2002), and also Giddens (1989), can be seen in both authoritarian/totalitarian/non-democratic regimes or democratic governments on the Internet. Examples like China's Great Firewall, Saudi Arabia's Internet Services Unit or the US government's removal of information from the Internet show that efforts can and are being made online to restrict access to certain types of information. Literature suggests that the way certain nation states approach online information access is motivated by considerations of power (Boas and Kalathil, 2003) but empirical findings from Chapter Five indicate that differing cultural attitudes to freedom of access to information and freedom of expression do affect the policies adopted towards e.g. filtering/blocking of Internet information in libraries. This suggests that Hofstede's contentions regarding cultural relativism are valid, even in the face of an 'open' network such as the global Internet. The situation that is seen in countries such as Iran and Saudi Arabia, for example, echoes the resistance of the globalisation process described by Holton (1998) or, more popularly, by Barber (1996). It also means that the lack of conflicting opinions online prevents the Internet being a full marketplace of ideas (a la Mill) in these countries. The brave can generate, disseminate and access dissenting opinions – but the normal citizen's freedom of access to information/freedom of expression is restricted. As mentioned in Chapter Three, societies committed to freedom of expression will create an environment for freedom of information but cultural and political differences in this area will obviously play a part in attitudes towards Internet access. If democratic governance is not advanced, for example, libraries will be unable to contribute fully to the advance of democracy.

As seen in Chapter Five, limiting access to information on the Internet is one option a nation state has if it wishes to retain a degree of control over its citizens' activities on the Internet. Chapter Six, on the other hand, demonstrated nation states' attempts to survey its citizens in the name of organisation and security. This imperative to survey, as suggested by Giddens (1989), can be seen in the actions of governments following September 11th 2001 with security and border control used as justification. Control of borders is mentioned by Giddens as a pre-requisite for a nation state, and, if direct invasion is, at least until recently, reassuringly rare, the advent of the Internet has given governments around the world a new set of virtual borders to secure. Combine a fear of the unknown – the online environment – with the war against terrorism and, as Chapter Six shows, governments around the world can be seen enacting measures that will enable them to monitor the use of the Internet in their countries for acts deemed criminal. The ensuing situation has become a question of human rights (civil liberties) versus security – in some ways the precise citizen-nation state trade-off/contract that Giddens outlines in *The Nation State and Violence* (1989). The effects on individual privacy in a library context can most clearly be seen in the effects of the PATRIOT Act in the US but, anti-terror legislation aside, cultural attitudes towards citizen privacy will affect the framework for libraries to offer freedom of access to information in other countries. Whatever the impetus, the imperative to survey/retain data creates an environmental block on users' freedom of expression by affecting the amount of informational privacy that individuals enjoy. This link is recognised by the international library community in Question 3b of the global survey detailed in Chapter Six.

- **On business**

Chapter Seven looked at the effects of the globalised economy on the development of the Internet. The rapid expansion of online business activity in the last ten years goes

some way to corroborating Schiller's thinking that the Internet will follow previous new technologies and become an extension of the high street. For a start, business is increasingly able to affect the infrastructure of the Internet at the three layers described by Benkler (2001), going against Castells' (early) predictions of the architecture of the Internet remaining open and showing once again that technology can be manipulated to restrict rather than facilitate. Furthermore, the examples detailed in Chapter Seven show that the logic of the market is increasingly shaping provision of online services, while at the same time showing how the same forces that tainted Habermas' public sphere in the 'real' world are present online. Some explanation for these developments can be found in Giddens *The Consequences of Modernity* (1990), where the author points out that technological innovation is constant and pervasive in search of surplus – something that can be seen in the business community's quest for locked-down digital rights management for online information. Digital lock-in enables more surplus be achieved and an increasingly commodified Internet, one that might be seen in the form of increased journal subscription prices, for example, will mean costs are passed on to library users unless institutions are wealthy enough to pay up. This could mean users might have to pay for basic Internet access, regardless of what any ideals the international library community might hold regarding free access. Empirical findings from Question 5 (discussed below) suggest that financial barriers resulting from business involvement on the Internet are the most dangerous of all to libraries providing Internet access and the surrounding literature (and the work of IFLA's Copyright and other Legal Matters Committee) suggests that libraries must pay close attention to future changes to intellectual property online.

To return once more to the framework of the research and the conception of globalisation, the continuing power of both nation states and the business sector can be seen in the way the Internet is developing, suggesting that reports of the nation state's decline in influence are premature. Indeed, private/public collaboration in areas such as Internet surveillance, suggests that the nation state/corporate relationship may be more symbiotic than suggested in certain literature on globalisation. As Peizer (Email from Peizer, 2004a) states:

"*The greatest threat to accessing information on the Internet occurred post 9/11 when [there was a] combination of recession and government interest that allowed technology corporations to turn their attention away from satisfying the lagging consumer market and instead developing security and surveillance applications for the Government's virtual war on terrorism. How many Silicon Valley firms now have homeland security departments*?"

Giddens' institutional dimensions of modernity are also relevant here, for the state/military/industrial relationship can be seen in the development and implementation of Internet surveillance and anti-terror technologies since September 11th 2001. Military needs drive the growth of information technology, something that is illustrated in the ARPANET and the very birth of the Internet itself. The 'War on terror' is shaping the future of the Internet – Peizer stated in an interview this is happening as a result of "*the continued standardisation of telecomm policy around the world to combat terrorism through draconian laws that allow for easier surveillance and filtering (to the extent of assaulting freedom of access to information even in democracies)"* (email from Peizer, 2004a).

Therefore, a combination of the effects of nation state and business involvement on the Internet – that is seen in both the literature and the empirical findings – suggests that certain dystopian predictions of Shapiro (2000) and Sunstein (2002) detailed in Chapters Two and Three may carry some weight. The inability of the user to access certain resources, coupled with a lack of choice in certain areas of information provision, means that the creation of walled gardens on the Internet, and exposure to only similar opinions to one's own is entirely plausible. It also suggests that the same forces that work to limit the public sphere - information management on behalf of governments and corporate players - have begun to work online.

3. A model of Internet development and access barriers

The research findings can thus be placed within the theoretical context and discussed. There is also a more practical side to the outcome of this PhD project however, where the information gained during the past three years can be used to build up a narrative surrounding Internet access issues in libraries. It is important to do this from the point of view of IFLA/FAIFE, for the findings can be used to identify areas that libraries should focus on to make a difference. The following section presents the findings of the research in such a way as to contribute to a general model of Internet development and access barriers. After this, key areas for libraries to concentrate on are outlined, along with possible actions that can be considered in order to overcome some of the identified barriers.

- **Material access in libraries is the most fundamental barrier**

As Internet use around the world continues to increase, the most basic barrier to access is the deficiencies in material access that form part of the digital divide. This is shown in the responses for Question 1b, which asked respondents to identify what would make searching for information on the Internet easier in libraries. Four options were given: more computers with Internet access; more resources in the country's native language; more training for library users and an option allowing the respondent to indicate 'Other', along with space for an explanation. The vast majority of respondents indicated that access would be made easier if more computers with Internet access were provided for users, with more training for Internet users in second place. Figure 26 overleaf illustrates the responses:

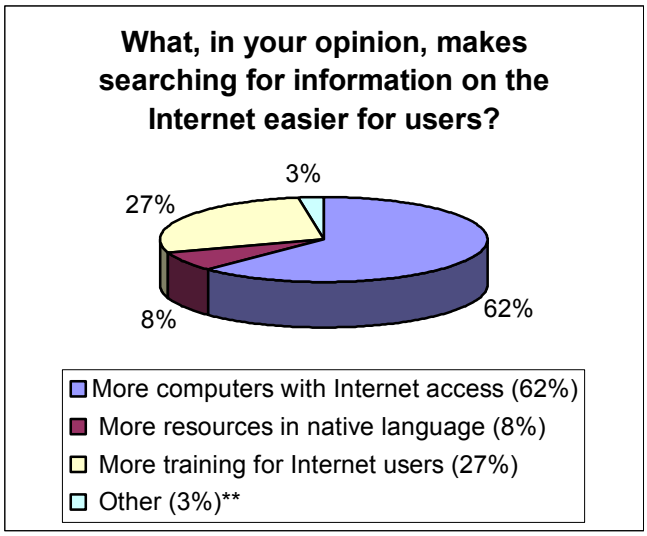


Figure 26: What makes searching for information on the Internet easier for users?

Across the regions this distribution of results was repeated, although in Africa 11 out of 16 respondents indicated that more computers with Internet access are needed to improve the service for users. The need for more computers with an Internet connection shows that for countries with low levels of Internet access there is a strong need for hardware to begin providing a better service for users. Even in countries with high levels of access it appears that more computers are always going to be needed to satisfy user demand and make information searching easier.

Training programmes for users were selected by just under a quarter of respondents overall but in Europe and Asia approximately one third of respondents indicated that more Internet training for users would be useful. Analysis of the results revealed an interesting trend – in many countries where 81-100% of public or research libraries were providing access respondents were more likely to point out that an alternative was needed to more computers. Countries such as Chile, Iceland, Ireland, the Netherlands, New Zealand, Singapore, and Sweden conformed to this pattern by indicating more training for library users. This leads to speculation that once Internet access in library services reaches acceptable levels then attention is turned to improving user skills.

The Flemish speaking part of Belgium was another country with high levels of access which indicated something other than more computers. Very few countries indicated that providing more resources in a country's native language was the best way to make information searching easier for users. The six respondents who did indicate this were the Flemish part of Belgium, Botswana, Cape Verde, Moldova, Panama and Thailand. It should not be thought that more countries did not want more native language resources but with only one tick asked for it was perhaps felt by most to be a lower priority than more computers with Internet access. Alternatively, it may be that respondents are used to the domination of English on the Internet and users are capable of working with it, or that resources in native languages are more available than perhaps previously suspected. However, to conclude this on the basis of these results is unwise. Whatever the reason the clearest indication is that libraries all around the world, regardless of levels of access currently offered, want more computers with Internet access.

Phil Archer of the Internet Content Rating Association, stated in an interview the problems of the digital divide were the most significant barrier to Internet access on global scale. The feelings of the roundtable participants in Berlin backed this up – representatives from developing countries failed to recognise barriers such as the increasing commodification of information and instead wanted to concentrate discussion on the problems of material access. Other roundtable participants saw training (digital skills) as a higher priority – but many of these participants came from countries that have some of the highest levels of access in their libraries. Taking the findings of Question 1b and the discussion group together, it can be suggested that while material access is the most basic obstacle to accessing information on the Internet in libraries, once this problem becomes less pressing the issue of training and digital skills becomes more relevant. This would correspond to the framework drawn up by Van Dijk and Hacker (2003) and explored in Chapter Four.

- **The digital divide affects the entire library community**

The digital divide appears to reflect the inequality in global society that is seen in disparities in income, food and shelter, or healthcare. Very generally, this can be seen in the distribution of Internet users around the world outlined in Chapter Four, and the fact that questionnaire respondents' indications of Internet access in libraries around the world corresponded with this spread. Material access in Africa is very weak, for example, and this is reflected in provision of the Internet in libraries. The digital divide appears to operate on a number of levels – individual (skills, usage differential), national (differences between rich and poor, urban and rural) and international (differences between developed and developing countries). This roughly corresponds with Norris' conception of democratic, social and global divides. Findings from the research back this up to an extent – Question 1a, in its tackling of differentials between research and public libraries, shows that in countries with lower Internet access it is often research libraries that are the first to offer Internet access to users. This, in theory, marginalises those not in education, or those in rural areas without educational establishments. Further information on the exact make-up of each country's research and public library systems would shed more light on this – but this is a task that has been unable to be carried out during the period of research.

Internet access in libraries therefore generally seems to be more advanced in the libraries of research establishments than public libraries. This is a broad conclusion, but is supported on a global and regional level by the findings of the questionnaire. As mentioned, Internet access levels in libraries generally correspond to levels of Internet development suggested by global Internet user figures but even in developed regions such as Europe, pockets of lower Internet access exist, illustrating the digital divide on a regional level – e.g. Northern Europe (high access levels) versus Southern Europe (low). This is reflected in other regions too where some countries have very high levels of access, and some countries have very low. Distribution of access is uneven. Of course, library systems and networks in each country are different, serving different populations with different geography and infrastructure, meaning comparisons are more complex in real life. Nevertheless, the digital divide places a direct obstacle in the way of freedom of access to information and freedom of expression on the Internet – with no access, there is no way that these rights can be exercised. This is a truly global phenomenon, present in all countries. No country has 100% of its population using the

Internet, and the concept of Internet want-nots outlined in Chapter Four ensures that this situation is likely to continue.

- **Libraries have to pay specific attention to the problems of the digital divide**

While the digital divide is present in every country, it is also an area in which libraries can make efforts to ensure access is free, equal and unhampered. The routemap outlined at the end of Chapter Four sets out the problems of access to be overcome:

- Provision of Electricity and communications infrastructure
- Provision of suitable premises
- Provision of appropriate computers and connectivity
- Provision of training and user skills
- Provision of adequate content
- Awareness of access inequalities

The ways in which these areas can be tackled are described further below in section 4.

- **There exist further obstacles that exacerbate the problems of the digital divide**

The findings of the research suggest that the problems of basic access have to be solved before anything else. If the steps above are followed, once access to relevant content is facilitated and users know how to navigate the Internet and get the best out of it, further barriers to access come into play. While the findings of the questionnaire do not explicitly support this - despite some of the answers to Question 1b[44] - feedback from roundtable discussion sessions and email interviews did indicate that certain other barriers came into play at certain stages of development. One on one interviews also indicated that interviewees were aware of further restrictions to accessing information, even once material problems were solved. Using the human rights framework outlined in Chapter Three, it is possible to see that further barriers to accessing information on the Internet are created by mechanisms that impair freedom of access to information and freedom of expression. Within the library community, acknowledgment of some of these barriers can be seen in responses to Question 3b, where a large majority of respondents acknowledged that keeping users' Internet records, for example, infringes users' freedom of expression.

Following the theoretical work of Giddens and Schiller, and supported by information from three years of monitoring mailing lists, news sources and academic research, motivating forces behind a further set of barriers were identified: the actions of nation states attempting to control of information on the Internet; and the actions of economic actors in the globalised economy attempting to impose market forces on the Internet and maintain power online. These actors create direct blocks on access to information, and they also create indirect blocks by altering the Internet environment to make it less open for users to navigate. Their decisions affect both information seeking and information posting on the Internet or, alternatively, users' freedom of access to information and freedom of expression online.

[44] Some of the answers to Question 1b indicated librarians in countries with developed Internet infrastructures believed training needs become more important once material access problems are solved.

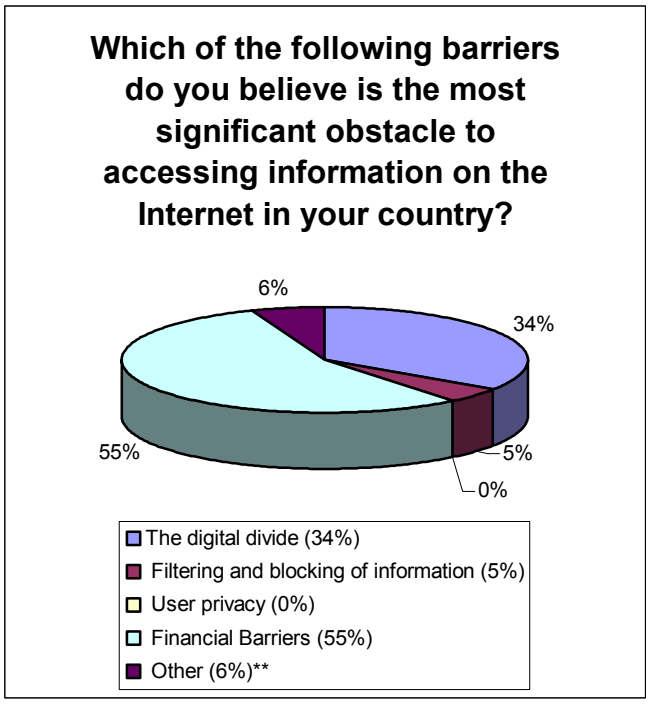
The first of the barriers created by nation states is the direct block on access to Internet-accessible information resources that is caused by the filtering and blocking of online information. While an interview with Phil Archer of the Internet Content Rating Association showed that Internet content rating is not so widespread on a global scale, the filtering of information via the other methods described in Chapter Five can cause problems for libraries. The wide variety of examples in Chapter Five show filtering to be a problem present in many areas of the world, even if responses from the questionnaire show that libraries are not yet affected by it on any great scale. Saying this, there could be a lack of familiarity with the problem on the part of librarians - filtering decisions could be the responsibility of parent organisations such as local councils for example, and librarians may have little input into the situation. The Iranian response to the questionnaire illustrates this to an extent, in that government filtering of the Internet in the country is a widely reported phenomenon (Arabic Human Rights, 2004) and yet the respondent indicated Internet access in libraries was unfiltered. A large percentage of respondents were also in favour to a filtering to a certain extent, suggesting that the use of blunt instruments would be considered to solve a problem. However, what this suggests the most is that there *is* an issue on the agenda, most likely that of protecting children – this especially came out in the workshop in Uganda. The difficulty of squaring the ideals of freedom of access to information and the 'duty of care' to minors is likely to be an issue that will not be solved on a global scale in the near future.

The second barrier created by nation states is the indirect block on freedom of expression caused by the surveillance of Internet use and retention of user data. The increase in Internet surveillance and retention of Internet user data has unquestionably become more of a problem since September 11th 2001 – as Chapter Six illustrates. This is important to libraries in an environmental sense as future use of the Internet is shaped by it. However, it has not been easy to estimate the extent to which libraries are aware of the issues raised by this change in the Internet environment, especially outside of the US. Retention of users' Internet records is not widespread according to empirical findings, but it could be that respondents interpreted the question as referring only to record keeping within the four walls of the library. Certainly upstream retention has to be considered and again, it might be that libraries are unaware of the actions their ISPs are taking at behest of nation governments. The responses from Belgium or China, for example, indicate no retention of Internet user records takes place, and yet reports indicate that this activity occurs in these countries (Privacy International, 2003a). Due to the current global political environment, with its emphasis on security, it is unlikely that nation state attitudes to Internet surveillance and data retention will change soon, and libraries may therefore be unable to affect the situation to any great extent.

Chapter Seven described how economic actors' involvement on the Internet has created two obstacles to accessing information online. The first obstacle is the direct block caused by the commodification of online information resources – such as payment to access information, or strict licensing restrictions on access to scholarly research. The second obstacle is the indirect block caused by the increasing corporatism of the Internet – such as increased protection for intellectual property (inc. digital rights management), alterations to Internet infrastructure or the increasing role of big media online. The importance of activities in the financial sphere of the Internet to libraries was explored in Question 5 of the questionnaire. This question offered respondents a

chance to indicate which of the barriers described in this dissertation presented the most significant obstacle to accessing information on the Internet in their country.

The results are shown in figure 27 below:



Global results - 87 countries*

* Two ticks from Belize and three from the Philippines.

** Other reasons were: Not knowing how to use the Internet (Aruba); Lack of information on where to access the Internet (Austria); Lack of networked equipment (Columbia); Hurdle for certain parts of the population (e.g. certain socio-economic groups and age groups) to start using computers (Malta); Lack of Space (Vatican City)

Figure 27: What is the most significant obstacle to accessing information on the Internet?

Financial barriers were considered to be the most significant obstacle by the majority of respondents. There is an issue in the results of this question, however, in that 'Financial barriers' and the 'Digital Divide', when presented without further clarification, have some areas of overlap – the provision of funds for new computers for example. Question 4 addressed financial barriers in the form of charging for Internet access but it is unclear if respondents were thinking of the commodification of information as defined in Chapter Seven when indicating their choice in Question 5. This is why the digital divide, with its need for monetary solutions in many areas, not least material access, must still be considered as the most fundamental barrier facing libraries.

The digital divide was indicated as the second most pressing issue, while the other barriers received very little support. The large amounts of respondents nominating financial barriers as the main obstacle are making a point that more resources are needed to increase access to information via the Internet. Taken together with the results of Question 1a, where a large majority pointed out that more computers with Internet access were needed to make information searching easier for users, and Question 4, where countries indicated if they had received extra funding for Internet access, the results of Question 5 suggest that whether funding has been made available or not, more financial resources are needed to provide access to information on the Internet.

Therefore it appears the very real presence of financial complications and restricted budgets and resources haunts most library associations around the world when

considering provision of Internet access. The financial obstacles to providing Internet access were highlighted by interviewees and the Internet manifesto workshop in Kampala provided comments from librarians who were concerned that online journal subscription prices were increasing year on year. Interviewees also mentioned digital copyright legislation as an area that is changing quickly. The large number of examples in Chapter Seven appears to confirm this situation exists, alongside other consequences of a commodified information environment such as the online sale of information already paid for by taxpayers. Changes such as this could be said to be a logical consequence of Schiller's 'advanced capitalism' or even Castells' informational economy, for if the Internet facilitates commerce it will be affected by it too. The general intrusion of market forces on the Internet illustrated in Chapter Seven suggests that the quality and neutrality of the information available in the online public sphere is beginning to be compromised, although this may only apply to provision of information by larger corporate entities. It is difficult to generalise regarding the future of all information on the Internet, but the increasing involvement of larger media companies detailed in Chapter Seven could have effects on the Internet's infrastructure itself, leaving the future development of the technology in the hands of the same corporations who currently compromise 'big media' (McChesney, 2000)

- **These obstacles appear over the period of a country's Internet development**

As indicated by the findings of the first research question, development of Internet infrastructure is unequal around the world. Barriers to Internet access, however, can occur at all stages of Internet development – in the most developed countries and the least. Libraries have indicated that financial barriers, coupled with a lack of computers, are the greatest obstacle they face but as Internet development increases, and Internet infrastructure becomes more embedded in society's norms and values (as seen in legal and economic frameworks within a given country), the further barriers mentioned above reveal themselves to have an effect on information access on the Internet. If all the sources for this research are taken altogether, it might be suggested that as a country's Internet infrastructure develops, the number of barriers to be aware of increases. Figure 28 illustrates how this situation might look:

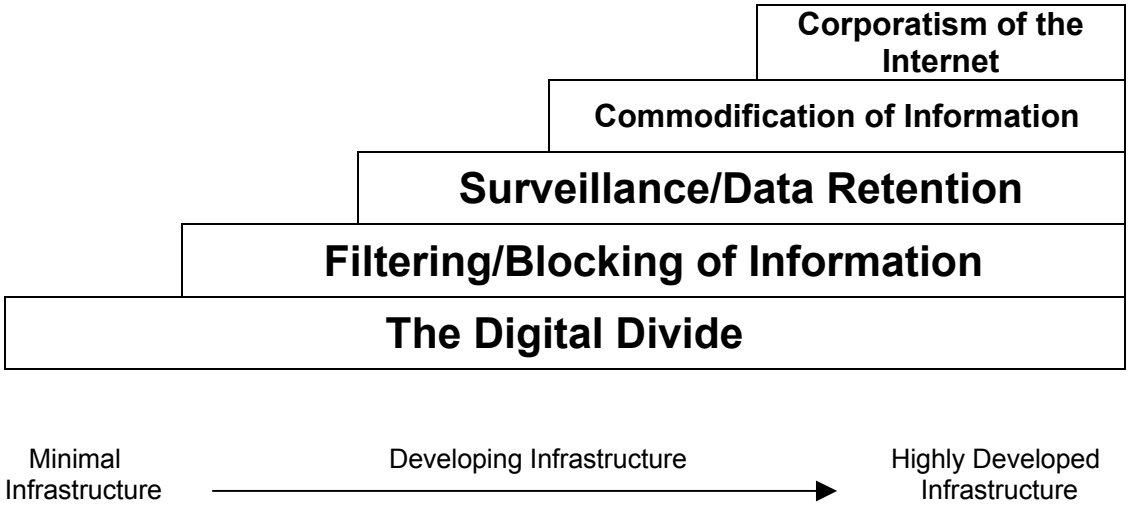


Figure 28: Barriers to access and Internet development over time

As development increases, priorities change. In light of this, a case might be made therefore for libraries to only start noticing/worrying/dealing with the other identified barriers once Internet development in a country advances. In the beginning for example, the issues of infrastructure, access points, relevant resources and user training (the digital divide) are of most consequence to a library trying to provide Internet access. All countries seeking to provide Internet access in their libraries will have to consider these issues. As time goes on, and Internet technology begins to diffuse throughout society other issues come to the fore. For example, the issues of corporate control of Internet infrastructure are only really being discussed in the United States at the moment, likely the most advanced Internet nation on the planet (it is being discussed in Europe, but not as much as in the US). Corporate control of the Internet simply does not appear to be an issue in developing countries.

This theory was tested with senior information professionals Jonathan Peizer (US) and J.K. Vijakumar (India) in email correspondence during Winter 2004 (Email from Peizer, 2004a; 2004b; Email from Vijaykumar, 2004)[45]. Peizer thought the thinking was correct and intuitive, but suggested that care needed to be taken assessing each country's context and stage of Internet development. For example, countries may develop along similar lines depending on factors of geography (are populations dispersed among rural areas or concentrated in urban?); political situation (to what extent does democracy exist?); economic situation (is the country more socialist than capitalist?); existing intellectual property frameworks; and strength of rule of law. These comments ring true, for corporate control of Internet infrastructure has little chance of occurring in countries like e.g. Azerbaijan where government monopolies control the telecommunications sector. However, access to information in areas where corporate control can be established, or at least advanced does have the potential to be an issue for developing countries. Vijaykumar strongly agreed with the thinking, although he stressed that the so-called 'Global Knowledge Society' is not a global phenomenon at this point in time – to an extent agreeing with some of Peizer's concerns.

Therefore, while it is impossible to use one country's experience and generalise predictions for others (due to cultural differences that persist, regardless of perceived cultural globalisation), it might be possible to identify trends that are present over a period of Internet development. Developed countries are shaping the future of the Internet for developing countries to follow. For example, digital copyright frameworks developed in the US have been exported, in only slightly different formats, to the EU and Australia, or anti-terror legislation developed in the US has been used as a template in Europe, Asia and Africa. Peizer (Email from Peizer, 2004a) adds, however, that this chain of development would not have been possible if the terrorist attacks of September 11th 2001 had not happened:

"*The Internet thrived in the 90's because it was a surety that countries would never get together and standardize their laws with other countries related to the Internet. It was just too complicated a process and there wasn't any global impetus to do it. Then came 9/11 and the war on terrorism which provided it*"

[45] Jonathan Peizer is Chief Technology Office of the Information Program at the Open Society Institute in New York, and J.K. Vijaykumar is the library Scientific and Technical Officer at the Gujarat University in Ahmedabad, India

As Schiller (1996) posited, it is the US template that leads the way with new ICTs – his prediction was that once corporate forces gain an upper hand on the net creation and utilisation of cultural space in the American mode can take place.

4. How can libraries overcome barriers to Internet-accessible information resources?

It is worth noting that many of these barriers can be circumvented by users who know what they are doing, through such mechanisms as proxy servers, or software that dismantles digital rights management structures. The majority of such approaches are of dubious legality however, and can endanger the safety of those using them (in some countries especially so) - this does not help libraries. Libraries have to be aware that these things exist however, for they will be shaping the attitudes of future users. An example of this might be younger Internet users taking for granted the availability of copyrighted material over peer-to-peer networks, making them reluctant to pay for such material. Also, younger people's technical skills are often far superior to adults (and librarians) and using a public access point where there are restrictions on certain services as opposed to a home computer, will not be attractive. This is not advocating making peer-to-peer services available in libraries, but instead is simply pointing out that the tastes and online experiences of future users will be different. The worse case scenario could be that libraries lose their reputation as neutral information providers, and the next generation of users stay away knowing they are far likelier to get the information they want from terminals at home, or at another point of access.

Libraries must operate within legal frameworks – and the extent to which libraries can e.g. secure a legal opt-out of something like national data retention on the grounds of user privacy is unsure. Solutions *do* exist for libraries, however, but some are more easily achievable than others. The international library community has to work on different levels to effectively tackle obstacles to accessing online information – from involvement in international politics to provision of extra services in library buildings. It is difficult to outline a simple step-by-step plan to overcome the barriers described in this thesis. To do so would ignore contextual and cultural differences among nations and regions around the world. Instead, it is possible to suggest issues for examination and future investigation, and a few specific areas where libraries will be able to make some sort of difference. It might be that libraries are best able to make a difference on a micro-level, by transferring traditional library and information science skills from the print environment to the digital age. Teaching users how to find information online might be one example of this, or digital preservation of online materials might be another. Before steps like this can be taken, however, libraries must be aware that that they will have to get involved on a macro-level if the conditions they desire to make a difference are to be put in place.

This means that libraries must have a comprehensive role in national information policy. The research revealed that inadequate information policy is a major stumbling block in 'transitional countries'. Serbian interviewees, for example, spoke about how the EU has highlighted the role of libraries as information providers but that this advocacy has not come down to a national level in Serbia. It was thought that libraries were simply not visible enough on the political horizon to warrant any support from the government. Chapter Three suggested that the right to information - or the right of access to sources of information - is related to an educational aim which is situated in

the perspective of general education and human development. It has been recommended that the percentage of GNP spent on education must therefore be increased in developing countries before the right to information becomes an achievable policy goal. If this is to happen, libraries need to be part of and help form national information policy. To achieve this, steps can be taken to partner with educational authorities but also to lobby at political levels, as outlined in the Costa Rican contribution to the IFLA/FAIFE Summary Report 2004 (IFLA/FAIFE, 2004d). Another example is the Serbian librarians who have sought to form a well-organised national library association that is able to increase lobbying of relevant government departments. This approach was backed up by comments in Ugandan workshop discussing Internet access, and here it was suggested that in developing countries provision of online resources is not as high a priority as simply getting the library community organised.

An organised approach with clear objectives, and messages, and a common position on such issues as freedom of access to information, is therefore a start to securing help in providing Internet access in libraries. Stronger representation for libraries at a national, regional and international level is what is needed if the specific barriers outlined in this thesis are to be tackled. IFLA's involvement at the WSIS is good example of a start to this process. However, it is simple to write that libraries around the world must do all they can to secure more sources of funding and support, for it must be hoped that this is already being done. Nevertheless, libraries cannot provide online information resources without such backing, and it is stupid to outline a set of possible solutions to developing countries that all involve having some degree of access to the Internet. In countries where less than 20% of public or academic libraries can even meet basic material access requirements, the actions that need to be taken to ensure big companies cannot further exploit online copyrights are not pressing. As indicated in the answer to Question 1b of the global questionnaire, more computers are seen as the key thing that would make searching for online information easier for library users. Internet-connected computers require investment that covers basic costs, as well as ongoing costs for software and technical support. As ever, therefore, money is at the root of the problems surrounding the provision of Internet access in the majority of IFLA member countries, as is shown in the findings of Question 5. If the problems of access – especially material access - outlined in Chapter Four are to be tackled there will need to be willing sponsors and sources of funding. This can only be brought about if libraries make their case clearly and loudly at all the right tables. If, and it is a fairly big if, libraries can gain the resources needed to take action against the barriers outlined in this thesis, then practical steps can be taken to improve access to online information. The following areas are where libraries may be able to make a difference:

- **The Digital Divide**

Libraries can take practical steps to tackle digital divide problems – as outlined in the route to access. The following areas to concentrate on were also revealed through interviews with information professionals:

- Relevant Content Creation - Local information is the key to getting new Internet users interested in the benefits of the technology. Encouragement of relevant content creation in developing countries is essential, sentiments particularly felt by Vijaykumar in an email interview: "*Developing countries like India, with huge amount of cultural and traditional knowledge, are facing problems in*

content creation. 90 percent of information available on the Internet is produced by developed countries, to which the interest from other parts of the world may be quite low…social and political reformers and governors [should have] *more awareness* [of this]" (Vijaykumar)

- Technical Support - The need for qualified information professionals to be able to fix malfunctioning technology in developing countries was pointed out during discussion in Berlin and Kampala. Roundtable participants revealed that in Ghana, Danish aid programmes found computers could be unavailable for as much as six months due to a lack of technical support, alienating local users from the technology and seriously affecting the success of projects designed to help bridge the digital divide. IT professionals in developing countries can earn much more in the private sector, leaving public libraries unable to utilise equipment. If possible, library staff should be trained not only in information retrieval skills, but also in IT maintenance

- **Filtering**

As described in depth in Chapter Five, Internet filtering technologies are less than perfect. Despite the implications of this for freedom of access to information, libraries can end up in a position of having to filter Internet access in order to protect the welfare of minors – or a number of other factors. There are some practical things for librarians to keep in mind in light of this:

- A firm position - Decisions regarding the installation of filtering software on library terminals may sometimes be out of librarians' hands (the CIPA being a case in point) but libraries must ensure that the point of view of the profession is heard during any debate at a political level. Any approach to the problem of filtering will be therefore helped by a firm position on the part of a national library association which can be used for referral

- Awareness - Librarians must remain up to date with issues of differing filter quality and capability. If forced to filter, librarians should be aware of the technical capabilities of the software and choose wisely

- Partnership - Libraries, if absolutely necessary, should try to engage, like the American and Belgian library associations, with makers of filtering software in order to assess what information is being filtered and why

- Software development - Libraries could consider developing open source filtering software that remains transparent and non-proprietary

- Promotion of alternative methods - The content rating and filtering sector is constantly advancing and more flexible technology is being made available. For example, Archer also detailed a project in Greece, funded by the European Union's Safer Internet Project called Smart Card Online for Filtering Internet (SCOFI) (SCOFI, 2002). He stated the purpose of the project thus: "*Filtering parameters are encoded on a smart card and the user goes into a library and sticks their smart card and that, among other things, has their filtering parameters. So the child would have a card that they plug in and that's their*

login information and everything else and they sit down in the library or the school and preferably have the same card and plug it in. Now this has been looked at, some colleagues of ours are looking at that in Europe, I know we did have a lot of contact briefly in America with a company called Library Guardian who were doing a lot of the same thing. And that was the idea to have a personal profile encoded in that way"

- **Copyright and the commodification of information**

As previously mentioned, the problems that come with an increasingly commodified online environment are perhaps not as pressing to librarians in developing countries who are still waiting for the problems of material access to be solved. However, it is more than a developed world issue and awareness of dangers outlined in Chapter Seven is growing – copyright and its enforcement through digital rights management was an issue for librarians from Israel, Uganda, and Kenya present at discussion group sessions and at the Internet Manifesto Workshop in Kampala. While financial obstacles can be overcome with the introduction of more funding into Internet access programmes, there are also other options for the library community to explore. This is because the Internet brings with it new ways of providing information, and new business methods are available to replace old. The following are some examples that can bring new ways of access:

Alternative models of scholarly publishing

- While IFLA has already endorsed Open Access models in its *Statement on Open Access to Scholarly Literature and Research Documentation* (IFLA, 2004), academic libraries should continue to explore the possibilities raised by Open Access Scholarly Publishing and Open Source Software as a way to take back some control of the distribution of scholarly information. Advantages gained from such projects should be passed on to public libraries where possible

- If it is accepted that current copyright rules are not helping the dissemination of scientific knowledge in the age of computer networks then an alternative model is called for. Stallman (2001) calls for digital articles to be distributed in non-proprietary formats with open access for all. The current situation regarding access to online scholarly journals is that access is restricted to those who can and will pay for articles. This is because publishers claim online access requires expansive high-powered servers. This can be countered by arguing that if everyone had the right to mirror, including, and especially, libraries, cost problems would be solved. Access speeds would increase and the scholarly record could be better preserved against accidental loss. Editing costs could be recovered through page charges to the authors, who pass them on to their research sponsors which are usually universities or other institutions. If the sponsors already pay fees through the library to subscribe to the journal then all that changes is the economic model. The occasional author who is non-affiliated (no sponsor) could be exempted

- Different methods/models of scholarly publishing can be explored to cut costs of distribution and information retrieval. Atkinson (2003) gives examples of different ways to distribute faculty research such as JSTOR, a digital archive of over 300 journals from different disciplines, or Stanford University's similar

Highwire archive. Universities could encourage their faculty members to manage their own IP and copyright, and should encourage scholars who want to seek non-exclusive rights to disseminate their work electronically. Using the open access form of publishing put forward by Stallman, scholarly information could be accessed without price or permission barriers. Such a system, like the Public Library of Science PloS initiative, removes many copyright and licensing restrictions and has led to the scholars involved being more frequently cited, especially beyond North America (Lawrence, 2001)

- Sheila Corrall from Southampton University is one of many proponents of Open Access (as summed up in the Budapest Initiative[46]), or university-based research depositories. She stated in interview: "*There have been a number of incidences in the last couple of years where the editorial boards of some of these commercial journals have resigned in protest at the price rise that their publishers are imposing and have set up a alternative journal at cost price, at a very low price in competition. And that has had a significant impact on the commercial journal market*. [Publishers] *used to be quite strict, and some of them would try to prevent academics depositing their material in these archives but now they seem to accept this as a parallel activity and are working with it rather than against it*"

- The possibility of national access licenses to scholarly journals for developing countries should also be investigated, as a way to ensure that all research libraries in a country can have access to information, not just the richest

Partnerships

- Libraries at all levels must explore the possibility of partnerships to open up access – with other libraries, with suppliers, with all relevant groups. As Sheila Corrall pointed out, such partnerships are effective at convincing universities and academic libraries to find ways of opening up collections to e.g. non-university members, or members of the public

- Partnerships with private initiatives should be considered – this approach has helped libraries in Serbia, Chile and Colombia. There are also industry groups to consider, such as regional groups looking at forms of Internet governance like eSafe[47]

[46] The Budapest Open Access Initiative was the result of a conference on open access publishing models organised by the Open Society Institute in December 2001. 'Open Access' in this context means open access for the scientific and scholarly research texts that authors give to publishers and readers without asking for any kind of royalty or payment. These texts should have "free availability on the public internet, permitting any users to read, download, copy, distribute, print, search, or link to the full texts of these articles, crawl them for indexing, pass them as data to software, or use them for any other lawful purpose, without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself. The only constraint on reproduction and distribution, and the only role for copyright in this domain, should be to give authors control over the integrity of their work and the right to be properly acknowledged and cited." (Budapest Open Access Initiative, 2004).

[47] eSafe is a European Union initiative looking at ways of making Internet use safer for children. In November 2002 I attended an eSafe meeting in Luxembourg where members of industry groups such as Internet Service Providers or eLearning providers expressed a great desire to work with IFLA.

- Partnerships within the library sector are also essential – attempts can be made to solve the problem of expensive online resources through co-operation with other libraries in similar situations. Both Sheila Corrall from Southampton University and Vanessa Hayward from Middle Temple Law Library (both in the UK) remarked that national buying deals and negotiations with providers are the only way to tackle the increasing costs of resources

- Libraries can look at partnerships with educational establishments at local, national and international levels. At a local (university) level, there needs to be more co-operation between the academic schools and the library to encourage skills uptake. Sheila Corrall stated: "*We've already seem the kind of blurring of the role of the library staff and the academic staff as they become more engaged in direct teaching of students and how to use information. So we can see library staff moving into more of a partnership role with academic staff rather than just a support function…"*

- International co-operation is highly useful – The University of Belgrade has recently teamed up with the University of Vienna, the University of Middlesex and the Humboldt University in Berlin to collaborate on matters of librarian education and also the implementation of the project 'Building a Co-operative Academic Library Network in Serbia' (Tempus, 2004). The idea of this project is that the university libraries will be connected through Internet, the software used will be standardized and cooperative databases will be established between all partners. Interviewees described this as the future of the Serbian academic library network

New forms of information commons

- New forms of information dissemination and storage lead to the creation of new information commons on the Internet. As mentioned in Chapter Seven, the Internet as a whole lacks the self-governance needed to be a true commons, but it is able to facilitate the development of an almost unlimited amount of subject-specific commons. The open access movement argue that permission culture, where products are licensed rather than owned will lead to a reduction in the common knowledge available to mankind to build and innovation. Micropayments will become common for small pieces of information, as currently seen in the purchasing of individual MP3 files from online music vendors such as Apple's iTunes store. Once this trend reaches a tipping point on its curve of diffusion there will be nothing to stop information vendors charging tiny amounts of money for small amounts of information. As Miriam Nisbet, legislative counsel for the ALA has said, "Sooner or later, you'll get to the point where you say 'well, I guess that 25 cents isn't too much for this sentence' and then there's no hope and no going back" (Boyton, 2004)

- In light of this, libraries should consider creating virtual spaces where members of colleges and universities can deposit and share useful content such as research outputs. This means working with materials already possessed and freeing them up – a good way of increasing access exemplified by the Focus on Access to Institutional Resources (FAIR) program organised by the Joint Information Systems Committee (JISC) in the UK (JISC, 2004)

- Shared online repositories can also be built based on the Massachusetts Institute Technology (MIT) model – materials from nearly all MIT courses were made available free over the Web for non-commercial use in 2001in an attempt to reinforce the position that ideas are humankind's property and not proprietary products for profit. As of 2004, the MIT OpenCourseWare Project includes course outlines, lecture notes, readings, problems and solutions from over 700 courses (MIT, 2004)

- Sheila Corrall stated that she believes the future will see a blurring between published and institutional material and that "*The library may have a role in organizing access, not just to the externally published information but also the institutionally generated information, which would include access to learning materials – which is the MIT example*"

- Furthermore, there is a growing movement amongst scholars to self-archive by posting papers on their web sites or in independent repositories. Scholars are retaining archival copyrights, and 55% of scholarly journals now authorise self-archiving with many others agreeing on request (Harnad, 2003). Libraries should help in any way possible to facilitate this process

Digitisation and Digital Preservation

- A final area for libraries to consider was not explicitly studied during the research but it did come up in interviews carried out during in the past two years. UNESCO has noted that a well-organised legal deposit scheme is considered as an essential element of any national public policy of freedom of expression and access to information – and that this should extend to the digital age (Lavriere, 2000). The preservation of digital information is an area that requires further investigation as a method of ensuring freedom of access to online information sources but unfortunately it can only be mentioned in passing here. However, interviewees felt that digitisation programs and digital preservation will be important ways to increase access to online resources. More and more information is being transferred to the Internet in an online-only format. This creates a further issue for librarians to consider, for many resources that need to be paid for cannot be archived by librarians – a digital preservation problem meeting a copyright problem

- Geoff Smith at the British Library believes the current situation has great implications for national deposit libraries that wish to preserve as much information as possible – he considered the issue of perpetual access to electronic resources to be a major stumbling block for national libraries. The issue of preservation has therefore been a higher profile in recent years, with the British Library, for example, lobbying parliament to pass legislation enabling digital preservation of English online resources (Macleod, 2003). There is however, some opposition from the commercial sector (e.g. newspapers) regarding who is in charge of digitally preserved materials and the conditions of access, so it is apparent that work in this area will not be straightforward

While digital preservation will undoubtedly be important in the near future, this research has concentrated on the identified access barriers outlined in Chapters Four to Seven. In concluding discussion of the major research findings, it can be said that while

the need for extra funding extends to all sectors of the international library community and will likely continue to do so into the future, there are ways for libraries to begin to tackle some of the obstacles that do not necessarily require large injections of money. There are some practical steps to take in the areas of digital divide, filtering and the commodification of information. However, the backdrop to the period of research has been the fallout from the events of September 11th 2001. The Internet, and especially the legal infrastructure surrounding it, has been, and continues to be, affected by the political reaction to the terrorist attacks. When considering the obstacles imposed by the post 9-11 environment, namely the restrictive anti-terror legislation that hampers freedom of access to information on the Internet, libraries may have to play a longer game. Influencing governments and lobbying for the role of libraries requires political involvement, commitment to the fundamental ideals of the library profession and a willingness to push arguments that may seem marginal at a time when security is an overriding global concern. While freedom of access to information and freedom of expression may not be as much of a priority to governments keen to secure borders and prevent future terrorist attacks, they are valuable human rights and as such are worth fighting for in any way possible.

5. Perspectives on the research

Overall, the global scale of the research has made it difficult to draw definite conclusions regarding the extent to which libraries can ensure that access to Internet-accessible information resources remains free, equal and unhampered. Instead, the dissertation is a trend analysis, one that features a detailed investigation of all the phenomena examined, but nonetheless a wide-angled snapshot of the Internet's development in libraries around the world between 2001 and 2004. Areas of interest have been examined and their boundaries defined, leaving future research to apply more detailed methods of analysis to them. For example, the facets of access have been detailed in some length, based on existing literature sources. While this approach has been less able to estimate the extent to which e.g. users' digital skills are lacking in any given country, it has been able to illustrate problems and indicate that this is an area that libraries should concentrate on.

As shown in Chapters One and Two, any attempt to construct a theoretical framework wide enough to encapsulate the whole world is a difficult and lengthy process. In effect, trying to cover all the angles involved in a global examination of a problem at PhD level research is akin to trying to construct a theory of everything - or at least a significant part of a theory of everything. It is difficult to ensure that everything is covered. The domain studied was the global library community, and this implies a relativist position to the research on the grounds of difference between countries and regions. The theoretical lens chosen was a pluralist lens, for this seems appropriate when dealing with cultural variety. The recognition of cultural differences is essential in any efforts to tackle the issues raised in the research and, consequently, a general rejection of ethnocentrism and an acceptance of cultural relativity has been key to approaching the problem of Internet access in the international library community. Any solutions should bear this in mind although it is worth noting that a project with more time and resources available might be able to take more of a functional/positivist position towards certain aspects of the research e.g. looking at the percentage of libraries offering Internet access in any given country.

When looking at the parts of the research that 'worked', it has to be noted that the data collection process was a fairly smooth affair, regardless of questions over the opinion-led format of the questionnaire. Email distribution generally worked, even to countries with a less developed Internet infrastructure, and few queries were received from respondents regarding wording of the questions, implying both the format, and the issues discussed were not too difficult to understand or alien to the respondent. The response rate itself - nearly 60% - was very acceptable, and a good base to build future reports on the state of Internet access in libraries. From the point of view of FAIFE, many contacts were made in member countries that can be used in the future.

Despite this, it must be mentioned that there are issues with the way respondents approached the questionnaire. By choosing to ask for the opinions of those best qualified the research received subjective opinions on e.g. the extent of Internet access. The need for a quick period of data collection meant that the information received from the questionnaire depended on how the respondent chose to interpret the question. There were grey areas, such as how respondents interpreted what filtering of Internet-accessible information was, or the use of the phrase 'to a certain degree' in Question 2a to indicate some use of filtering software. It also cannot be discounted that some respondents, especially from developing countries, may have inflated the percentages of libraries offering Internet access – when results have been presented at conferences there have been some queries regarding e.g. whether or not a country like Ghana was really able to offer such high levels of Internet access in its libraries. Furthermore, choosing to concentrate on percentages of libraries does not really let readers know about the number of libraries in a country – there is no link up to the factual existence of physical library buildings/networks. With more time and resources, this could be something to investigate in future.

There are some areas that the research has not really been able to empirically investigate. Despite the importance of the ideas of Shapiro and Sunstein regarding the balkanisation of the Internet, it has not really been possible during the research to assess the extent that individuals are retreating to voices similar to their own. It is possible to see signs of this phenomenon in passing - such as the highly partisan web sites and forums that have sprung up during the US Presidential Election 2004 (Clickz.com, 2004) - but such areas require detailed investigation into how users access, evaluate and use information and not over-reliance on previous studies and existing literature. It is very difficult to cover all the ways in which individual users are taking advantage of or shaping the Internet on a global scale for there are simply too many things to keep track of. The Internet is changing at an incredible pace and time and resources meant the research chose to concentrate on the actions of nation states and corporate actors. The result of this is that the extent to which libraries are able to offer Internet access around the world can now be estimated, but information is lacking on how users are using the resource. The ability of individuals to influence the network is therefore an area for future study along with how individuals' differing cultural attitudes to the accessing of information. This has been unable to be investigated in any depth, certainly not the level of a comparison with Hofstede's work. It might be interesting to use Hofstede's framework for analysis, rather than using his experiences as a guide.

Therefore there are some areas where the research may have been conducted differently. It is possible that there has been too much concentration on the dystopian side of the Internet, leaving aside the positive events of the past three years. A participant in the

Ugandan Internet Manifesto workshop asked: Equal access is one thing, and free access too, but are libraries benefiting from access? (see Appendix 4).In developed countries libraries might be able to benefit because complementing infrastructure – education, telecommunications etc. – makes it so. In Africa, the same conditions do not exist on a comparable scale and benefits are correspondingly low. Not all sources for the research saw the situation in such terms however, and participants in the Berlin roundtable were keen to see an approach which stressed the benefits of Internet access. The Internet remains full of beneficial externalities for users and this should not be forgotten. However, the terms of reference required that barriers to access be identified and this inevitably led to a focus on the obstacles present online, while the online environment since September 11th 2001 simply cannot be ignored in any discussion on a global scale[48].

6. Research implications and future investigation

The PhD project contributes in a unique way to global scale investigation of the Internet in libraries. IFLA/FAIFE now has a report on the period 2001-2004 that shows differences in total user figures for the Internet *and* the extent of Internet access in libraries. With 89 countries involved out of 143 IFLA members the coverage of the research has laid down good foundations for future reports. This was the first time a global survey has been carried out into this subject and it constructs a knowledge base and a directory of contacts to be built upon and improved.

Several useful elements exist in the research including a framework for future analysis based on the identified access barriers. The pyramidal tables of a country's Internet access proposed in Chapter Four can be used to give a visual representation of nation access levels and enable comparison of differences between countries. As outlined in the Introduction, the research chose to concentrate on the identification of access barriers over concrete solutions. This is because the international library community has until now lacked a clear global look at the situation regarding Internet access in libraries. This does mean, however, that there is nothing incredibly radical in the solutions proposed in this conclusion – the research reiterates what professionals in the field have been discussing/proposing in previous years. What the research does do is bring together global level problems in one document, so that readers who may be aware of one issue find they are suddenly exposed to another. Explicit solutions to these problems will likely come from further investigation into these areas.

As an example a framework to do this was put forward by Jonathan Peizer (Email from Peizer, 2004a; 2004b). He suggested that the identified barriers have salience primarily in Western democratic countries, and suggested that Figure 28 is perhaps better suited to regional blocks of countries, allowing more subtlety and allowance for context in different regions. It might be possible, therefore, to use the general lessons learned in the three years and apply them to specific regions around the world to compare and contrast states of Internet development. This would enable senior librarians in the

[48] It is worth noting, as a late inclusion to this conclusion, that I attended a conference entitled 'Will the Internet survive?' organised by the Oxford Internet Institute (OII) and held in London in October 2004 (OII, 2004). At this one day event senior academics and policy makers discussed the main barriers outlined in this thesis and there was an agreement on behalf of the participants that the future of the Internet is far from assured. Dystopian views of the Internet's future are far from uncommon amongst academics in the field of Internet studies and the international library community must take notice of this.

regions concerned to take a close look at the wider region they are operating in, and identify areas to be prioritised, or areas to consider in future years, as a result. This might be a more focused way to proceed, for if the research has demonstrated one thing, it is that working on a global scale is an incredibly difficult task for a single PhD student to undertake.

In terms of other future research, the criteria of access set out by Bridges.org and Van Dijk and Hacker in Chapter Four might provide a useful framework for a country by country analysis of the problems of accessing information on the Internet. This could be a useful tool for plotting national information policy, along with being a resource for libraries to gauge which areas they may best make a difference in. As mentioned in Chapter Four, it might also be interesting to speculate on a total Internet user threshold that needs to be crossed before access in libraries becomes a priority for national information policy, simply so that libraries have a context to operate in. Other areas for future consideration are the problems of geolocation and technology convergence. Geolocation is an interesting area for study from an ideological access-for-all perspective due the potentially information-divisive reasons mentioned in Chapter Five. Convergence of technology was mentioned in interviews as an area for future consideration, where data is able to be exchanged across a wide range of appliances and applications. Such a situation will create new issues for libraries to consider, with all the accompanying benefits and problems.

It is fitting at the end of this research to return to the concept of the information commons. All of the obstacles outlined in this research have the potential to impact upon the shared store of knowledge that is at the disposal of mankind through the medium of the Internet. It is difficult to guess the extent to which library users, or even library professionals, are aware that this situation exists. In truth, it is even possible to say that the concept has not found its way into global society's common parlance at this point in time. This is important to recognise, for the concept of the information commons is a good way of illustrating how a technology that has been so feted as a benefit to mankind is slowly being turned away from some of the hopes and ideals it was supposed to bring to its users. The concept, which is currently being debated in the US more than anywhere else, needs to be brought into mainstream library terminology, so that threats and benefits to the commons can be identified and tackled. It is difficult to estimate how library users will be affected by the attacks on the information commons because the process is very current and ongoing – this ever-changing situation has been a feature of this PhD project since its very beginning. What this means, however, is that raising professional and user awareness regarding public knowledge is quickly needed. Further global level research into this area, backed up with specific studies into the identified access barriers on a national scale, will contribute greatly to any efforts to make the library community aware of the challenges they face in keeping access to Internet-accessible information resources as free, equal and unhampered as possible.

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Appendix 1 – Questionnaire for Global Survey

Instructions:

Please fill out your country below and answer the following questions. Click the left mouse button in the appropriate box each time you are asked to make a choice. Where asked to type an answer, please use the grey text area provided. When complete, save the document and send it as an e-mail attachment to: ***sha@db.dk***

Respondent's Country:

1. Digital Divide

The term 'digital divide ' describes the wide division between those who have real access to information and communications technology and are using it effectively, and those who don't.

a) In your estimate, what percentage of all public libraries and all research libraries* in your country offers Internet access to users?

Public Libraries		**Research Libraries**	
81-100%	☐	81-100%	☐
61-80%	☐	61-80%	☐
41-60%	☐	41-60%	☐
21-40%	☐	21-40%	☐
Less than 20%	☐	Less than 20%	☐

b) In your opinion, searching for information on the Internet in libraries would be made easier for users by which one of the following: (which **one** do you consider most important?)

More computers with Internet access ☐

More Internet resources in your country's native language ☐

More Internet training for library users ☐

Other (please specify):

**Research libraries include the libraries of educational institutions*

2. Filtering and blocking of information

Filtering and blocking of information occurs when software is placed on personal computers or on a network to prevent users accessing information considered harmful in some way.

a) Is the library association in your country in favour of filtering information on library Internet terminals?

Yes ☐

Yes, to a certain degree (e.g. for children) ☐

No ☐

b) Is the use of filtering software widespread in your country's libraries?

Yes ☐

Yes, to a certain degree (e.g. on children's terminals) ☐

No ☐

c) If yes or yes, to a certain degree, what is the motivation for the use of filtering software? (Please tick all that apply)

Protection of children ☐

National Security (e.g. terrorism) ☐

Safeguard religious values ☐

Safeguard national ethos/culture ☐

Crime (e.g. gambling) ☐

Safeguard public morality ☐

Other (please specify):

3. User privacy

Information privacy is defined as the right of individuals to determine when how and to what extent they will share personal information about themselves with others. User privacy is related to rights and values such as liberty, freedom of expression and freedom of association.

a) Do libraries in your country keep records of the user's Internet use?

Yes ☐

No ☐

b) Do you think that keeping user records affects the freedom of expression of the individual Internet library user?

Yes ☐

No ☐

4. Financial barriers

Financial barriers to accessing information on the Internet include paying to use computers connected to the Internet, or to use online information resources made available in libraries via subscription.

a) Is it free of charge for library users to access the Internet on library computers?

Yes, in all libraries ☐

Yes, in public libraries ☐

Yes, in research libraries ☐

No ☐

b) Has the state or other library authorities made any extra funding available for Internet access in the library system?

Yes ☐

No ☐

5. Comparison of barriers

Which of the following barriers do you believe is the most significant obstacle to accessing information on the Internet in your country? (only **one** tick please)

The Digital Divide ☐

Filtering and blocking of information ☐

User privacy ☐

Financial barriers ☐

Other (please specify):

Other topics relating to libraries and intellectual freedom

6. Ethics

a) Has your library association adopted a code of ethics?

Yes ☐

No ☐

If yes, please state the year the code was adopted:

b) Have there been any activities to promote it/implement it (if yes, please describe)?

Yes ☐

No ☐

c) If there is no code, does your library association intend to adopt one in the next two years?

Yes ☐

No ☐

7. The IFLA Internet Manifesto

a) Has your library association adopted the IFLA Internet Manifesto?

Yes ☐

No ☐

b) Have there been any activities to promote it/implement it (if yes, please describe)?

Yes ☐

No ☐

c) If not, does your library association intend to adopt the manifesto in the next two years?

Yes ☐

No ☐

The IFLA Internet Manifesto can be found at: http://www.ifla.org/III/misc/im-e.htm

8. The IFLA Glasgow Declaration

a) Has your library association adopted the IFLA Glasgow Declaration on libraries, information services and intellectual freedom?

Yes ☐

No ☐

b) Have there been any activities to promote it/implement it (if yes, please describe)?

Yes ☐

No ☐

c) If not, does your library association intend to adopt the Declaration in the next two years?

Yes ☐

No ☐

The IFLA Glasgow Declaration can be found at:
http://www.ifla.org/faife/policy/iflastat/gldeclar.html

9. Reported incidents

One of the aims of the World Report is to report on incidents/violations of freedom of access to information in general

a) Have there been examples in your country within the last two years of library users being denied access to information

Yes ☐

No ☐

b) If yes, please report the incidents

Appendix 2 – List of Interviewees and Roundtable Attendants

Interviewees:

Interviews took place with four subjects in the United Kingdom in April and May 2003, and with two subjects in Belgrade in September 2003. Email Interviewees took place with two subjects between January and March 2004.

In the United Kingdom the interviewees were:

- Phil Archer, Chief Technical Officer, Internet Content Rating Association (ICRA)
- Sheila Corrall, Director of Academic Services at Southampton University (now Professor of Librarianship and Information Management at the University of Sheffield)
- Vanessa Hayward, Keeper of the Library, Middle Temple Law Library, London
- Geoff Smith, Head of Co-operation and Partnerships, The British Library

In Serbia and Montenegro the interviewees were:

- Dejan Ajdacic, Director of Belgrade University Library; Director of the Internet Library of Serbian Culture - 'Project Rastko' (www.rastko.org)
- Mirko Markovic, Manager of the Djordje Jovanovic Public Library, Belgrade; organiser of Serbian Library Web Portal (www.biblioteke.org.yu) and Balkan Web Portal (www.balkanlibrary.net)

The email interviewees were:

- Jonathan Peizer, Chief Technology Officer, Information Program. Open Society Institute, New York
- J. K. Vijayakumar, Scientific & Technical Officer (Library), Information and Library Network Center – INFLIBNET. Gujarat University Campus, Ahmedabad, India

Roundtable:

In August 2003 14 persons attended a roundtable discussion session at the IFLA World Congress held in Berlin. The attendees were:

- Alemka Belan-Simic, Croatian Library Association (Croatia)
- Marianna Tax Choldin, Mortensen Professor Emerita (USA)
- Andrew Cranfield, Deputy Director, Slagelse Library (Denmark)
- Gwynneth Evans, Media Awareness Network (Canada)
- Jonny Geusens, Business Development Manager, PIMC (Belgium)
- Lone Hansen, Danish National Library Authority (Denmark)
- Laura Held, Bonn Art Library (Germany)
- Aleksandra Horvat, Croatian Library Association (Croatia)
- Benedict Kandoya, Head of library and technical service, Tanzania Telecomms (Tanzania)

- Frauke Mart-Thomsen, Berlin State Library (Germany)
- Lene Stamp Mortensen, Vicechair, Danish Research Libraries and librarian at Danish Veterinary and Agricultural Library (Denmark)
- Bryan Negin, Herbew University, Jerusalem (Israel)
- Stephen Parker, IFLA Journal (United Kingdom)
- Wenhui Xu, Student, Humbolt University, Berlin (China)

Appendix 3 - Sample Mailing Lists and Third Party Sources

The resources used to build up a picture of the global situation relating to Internet access barriers were mainly relating to online information resources dealing with IT-related matters. As noted in the introduction, during the first month of the research several mailing lists were subscribed to that distributed emails on a daily, weekly or irregular basis. These emails consisted of links to news stories, information sources or original academic research that concerned ICTs, intellectual freedom or human rights. The senders included:

- Established IT-related news magazines such as *Wired* (www.wired.com)or *The Register* (www.theregister.co.uk)
- Organisations specifically concerned with the Internet and users' rights such as the Electronic Privacy Information Center (www.epic.org), the Electronic Frontier Foundation (www.eff.org) or the Global Internet Liberty Campaign (www.gilc.org)
- Organisations concerned with IT in developing countries such as Bridges.org (www.bridges.org), or the Digital Divide Network (www.digitaldividenetwork.org)
- Human rights organisations such as the International Freedom of Expression Exchange (www.ifex.org), Human Rights Watch (www.hrw.org) or Amnesty International (www.amnesty.org)
- Organisations concerned with intellectual freedom such as Reporters without Borders (www.rsf.org) , Privacy International (www.privacyinternational.org) or the ALA's Office of Intellectual Freedom (http://www.ala.org/ala/oif/intellectual.htm) [50]
- Academic mailing lists such as the daily digest prepared by the Association of Internet Researchers (www.aoir.org)

Additionally, certain websites (often referenced in the email dispatches sent out by the above senders) were consulted with regularity to keep abreast of the ever-changing cultural, economic and political environment and its effect on the information technology sector. These websites included, but were not limited to:

- News organisations such as Reuters (www.reuters.com), the Associated Press (www.ap.org), the BBC (www.bbc.co.uk/news) and CNN (www.cnn.com)
- Newspapers such as *The Guardian* (www.guardian.co.uk), *The Independent* (www.independent.co.uk), *The Washington Post* (www.washingtonpost.com), *The New York Times* (www.nytimes.com) , and a variety of newspapers from Africa, Asia, Oceania and, where, possible, Latin America
- Google News (http://news.google.com) , a continuously updated portal featuring news headlines from over 4,500 different sources worldwide. Stories are selected by computer algorithms as a result of many factors, including how often and on what sites a story appears elsewhere on the web

[50] The ALA circulates daily emails relating to intellectual freedom through its 'IFACTION' list. This list, while primarily US-centred, has provided large amounts of information and links for the information-gathering phase of the research

Online statistical sources were also called upon in order to remain aware of the growth of the Internet worldwide. These sources included:

- NUA.com, latterly Clickz.com (www.clickz.com) , a much-referenced site dealing with online demographics including user numbers
- The Computer Industry Almanac (http://www.c-i-a.com), an IT industry publication dealing with computer and Internet statistics
- The CIA World Factbook (http://www.cia.gov/cia/publications/factbook), a yearly publication that includes extensive geographic, demographic, political, economic and communications information on every country in the world
- The International Telecommunications Union (www.itu.org), an international organisation of governments and the private sector relating to telecommunications networks. Also a co-organiser of the World Summit on the Information Society
- The United Nations (www.un.org) and UNESCO (www.unesco.org), specifically for authoritative resources relating to demographics

Appendix 4 – Transcript from the Internet Manifesto Guidelines Session, Kampala 7th July 2004

The following appendix contains a rough transcript from a workshop held during the 2004 Standing Conference of Eastern, Central and Southern African Library and Information Associations (SCECSAL) discussing the IFLA Internet Manifesto. The roughness of the notes is a result of transcribing the session in real time and also being available to answer questions where need be. The following appendix is formatted simply, with the name of the contributor (attendees were invited to step up to the microphone and speak their minds), country of work, followed by their contribution – noted down as verbatim as possible. Due to the need to transcribe everything, it was very difficult to get the correct names of all the participants, something that is clearly evident in the transcript below.

Participants refer to Paul (Professor Paul Sturges, Chair of the FAIFE Committee) and Diana (Diana Rosenberg, Advisor, International Network for the Availability of Scientific Publications). Both Professor Sturges and Diana Rosenberg gave presentations, along with myself, which some of the participants refer to.

Transcript:

Mr Raphael Uego, Uganda

Listened to Paul, sensitive topic in Uganda for him. 3 observations, 1 question…the manifesto talks about limitations of access to Internet…legislative regulations are an issue, at national and local level – especially in Uganda. Appreciates the time needed to come up with regulations, Council of Europe example cited. Concern is disadvantages in Uganda, Africa. The Bandwidth problem as a 'killer restriction'…lack of infrastructure – no computers but other things – communications facilities – as well. The Manifesto will probably not change this! Local content too – can the manifesto encourage this sort of thing? Could it be possible for Africans to do what the Council of Europe did? Can the Africans contribute to a sensitive legal document? Are they prepared? Bring in the stakeholders, advocate the libraries' point of view…

Paul replies, concerning the financial resources available for a full African consultation. Mentioned the possibility of a virtual consultation, delegating down through practical associations etc.

Professor, Namibia

A request by minister of education for training in Internet, another request to set up telecentres and train staff – can FAIFE help? Second point: the way the Internet is always discussed – is there a lack of broader understanding regarding the Internet? The Professor sees the Internet as a mass media in the style of television, radio…helps provide the missing conceptual frameworks needed for discussion of the Internet…how would his 85 year old mother use the Internet? Look at the history of other mass media…information seeking behaviour of people leads them to the sources they need, but Internet discussions seem to be top-down, a have and be good situation, or a no have and be less developed. How should we treat the Internet therefore? A better conceptual

idea will help understanding of the Internet in Africa. BUT…we *should* look at the Internet positively, recognize the benefits…university of Namibia has over 300 computers where some students have become addicted! How can we best provide for some of these students who are not using the Internet?

Critical faculties, lots of rubbish on the Internet – how to evaluate resources? How can students best achieve their goals in light of this situation?

Librarian, Chumbogo University, Uganda

Problem: legislation regarding free access. In Uganda there is a forthcoming freedom of information law, but this law has been debated by the elite, educated – others have not had time to see the content of the legislation…has the library association been involved in these discussions? MPs are not well educated about some of the issues that libraries might be concerned with…

Mentions PATRIOT Act and implications of…and the fact that librarians were against it for ethical reasons…one voice for international librarians would leave us better able to advocate against such laws…

Another worry regarding children's access to information…they don't need everything so soon…but consequently there are some people advocating restricted access to protect children and the problems that might come from that concern the speaker…what sort of law therefore will be appropriate? How many people actually care though, how many people know enough to intelligently debate the law? Of course librarians should stand for FOAI and FOE, but sometimes it can be a problem to leave everything free – national security being an issue for example. We should get involved in the debate, go to parliament, oversight on the legislators…

WSIS, in Uganda the WSIS was represented by only one workshop, and it was to educate the ministerial representative…not enough time to discuss and debate the issue – very dangerous…we should

Fortenya, Kenya

From a parental point of view, from a traditional librarian point of view the librarian had a censorship type control through stock selection. How do we compare this book control with the Internet? How do we monitor what users do? There is no quality control, certainly not in the same way as print materials. From a parental point of view kids have access to the TV in control, but parents can switch off, control the channels…but what about the internet?!!

Second question: re: guidelines, what about a questionnaire to gauge opinion? This could regulate the consultation process?

Robina, Uganda

How can we encourage FOE in presence of intellectual property rights? There is a restriction that comes with the enforcement of these rights, how can librarians deal with this?

Paul: licensing is very important…

Kay Raseroka, IFLA President, Botswana

A few African issues: generalizing, but it's important. Attitudes towards control of thought for all people – small, female, all parts of population – we know that there is a hierarchy regarding information access (it's not good for kids, women etc.)…we must address attitudes towards this! If we are to compete internationally, we have to have access! It's the only way to develop, economically and nationally. Mentioned filtering problems in Denmark, and states that we as parents have children that learn to crawl and walk, and we know that as they learn to walk sometimes they fall, hurt themselves. Would these children ever walk if every time they take a step we cry out that they might fall! Let us be responsible and enlightened parents – we are not with them 24 hours of the day. Beware of our girl children's exploitation by predators…it happens as a result of misinformation! How do we empower our children to deal with these problems?? We must provide information access, so as to empower!

Sal Erica, South Africa

They have 86 branch libraries in Durban with 45 with Internet access; the others are on a rollout. Started out with a no Internet filtering policy. They are still trying to do this, but there was a problem with users using information on the net to exploit children. Adults would use terminals to access porn sites, not graphical ones but sites that had more text than pictures. They would call children across to look at it and then try to pick them up. Basic exploitation, quite nasty. Once the librarians found this out, problems obviously occurred. The issue is not information access, but the issue of children that were exploited by adults. The library has been looking at filtering software that will block porn but not e.g. sex education. But it's very hard! The quest for appropriate filtering software is ongoing…

Michael Batua, Kenya

University librarian. Just a few problems: pornography – so much Internet literature has a lot of porn, takes a lot of student time up. Every academic is annoyed therefore! Also violent materials – so much on the net. The youth are interested, takes up study time. Time-wasting on the net, even by members of staff! So many items come up on the screen – email and net diversions. Employers affected. Viruses too are a problem. Copyright is also an issue, sometimes sources of Internet materials are not authenticated. A product was sold to the speaker's office which had not satisfied publisher's copyright requirements and the university are copping the fallout. The providence of materials is therefore a problem. As information disseminators, we want to avoid the courts as a result of distributing dodgy materials. Plagiarism also a problem! Students will download information for their term papers from other sources. Difficult for lecturers to validate what is what…what does this do to the quality of education?!! Internet is good, but we have to know how to use the information, and how others are using it. What about the future of students?!! And one more thing, cost. What can we give as a guide as to the provision of Internet? We all want it, in our homes as well. What can we do about the costs?

Provincial government librarian, South Africa,

Respond to previous…cost is indeed a barrier. In South Africa public Internet access costs. Many cannot afford it. How can we make it cheaper? Cut a deal with ISPs? The cost excludes an awful lot of people

Geoffrey Salange, Malawi

Some of our experiences have been mentioned but there are more. Malawians seek Internet access, lots of them. Lack of local content is a problem in Malawi. We need more relevant information for users. Webmasters work in spare time, and updates are not often carried out. Information is not current. Sensitivity of information plays a part – some stuff just won't make it on. Email is popular, could be main activity. Users have poor searching skills. Costs of PCs and parts is expensive, often charged a duty to bring them into the country. Maintenance is therefore a problem – it's an expensive business. It's difficult to tell as well, just what is the user doing on the Internet? What materials are they accessing?

Marta (country unknown)

Thanks for the forum. It's important to make governments aware of this sort of activity. The most important thing is that there are bad and good experiences of the Internet. Porn on the screens in the morning in the university - very nasty. Librarians need to be educated to make the Internet experience a positive one. Technicians have tried to filter for them, but overblocking occurred. SCANEL-ECS have supported an incomplete study on tax barriers…there have been previous protocols used, so why not update them to include the Internet?? We really need to move to the implementation phase.

Jacinta Were, Kenya

Looked at situation reflected in my figures regarding public libraries. Very worried because public libraries, because of their wide range, should really take the initiative so this situation is bad

At the university of Nairobi's Internet café there are cases of students being offended by other's Internet use…one student wants FOAI – as per librarians codes – but other student was offended by the first student's Internet use – what to do in this situation?

Ellen Tise, South Africa

Re: Copyright and licensing, responding to previous comments. Important to note that in most cases license agreements should be very clear regarding access. However, in other cases the software will be able to enforce restrictions (DRM). Librarians should study all agreements, and enter into negotiations with suppliers to best gain rights of access. Also, when it comes to distribution of information, copyright laws of country will apply, so be aware! There is a problem, because even academics are unaware of laws regarding redistribution of electronic works. Beware of over-copying! Copyright law should be focused on in librarians' training. Perhaps we should consider open-access and open source models

Mr ?, Tanzania

Problem with user skills – impacts on access. Some training has been provided but problems remain. Some restrictions have been enforced in the library regarding what is being accessed but this is very difficult.

Newton, Zimbabwe

Responding to my presentation. African user numbers might look low, but it might not be a question of how many people of using the library for Internet access. Zimbabwe's problem is infrastructure – computers are very slow. Modem dial-ups. A bandwidth problem therefore. Public library users are disadvantaged compared to university users. People are obviously dismayed at the poor service.

Mary Matel (country unknown)

Comment relates to ability to benefit from Internet access. Equal access is one thing, and free access too, but are we benefiting from access? In developed countries they might be able to benefit because complementing infrastructure – education, telecoms etc. – makes it so. In Africa, there is no such help – and benefits are correspondingly low. As we develop the manifesto, we need to pay attention to other factors to best benefit from the Internet. We should think a bit wider; advocate other ways of helping people to benefit.

Female Librarian (country unknown)

Responding the 85 year old and the Internet issue. She may not need it directly, but she will need it indirectly. Healthcare information for example. Relatives may be able to find information that can help any ailments. The Internet can help healthcare professionals to check information too.

Cost, bandwidth, infrastructure and skills are the issues as well

Charles, Chairman of Kenya library association

Some issues we should address that we haven't yet. Is it crucial that we need to contribute to this manifesto? YES. Are we adequate enough, can we contribute adequately, in the sense that when this comes out our colleagues will say the Africans have contributed? Sorry to say, No.

Why? Insufficient knowledge amongst the masses of librarians. They have no idea. Most librarians have no access to the Internet and are not aware of it. Most librarians are not trained sufficiently to deal with some of the pertinent issues raised here. The Internet has mesmerized us. We don't know. The audience today are senior people, who have relegated duties to junior staff, front line workers – and while these people are sent for training the seniors remain in ivory towers. These are the people who come to conferences and when they return they don't return the knowledge to front desks. Leadership attitude must be changed. Do leaders know the customer? We are bosses, others are workers. Perhaps we need a different way of getting the right people to get

the information. We need policy makers to be trained, we need to motivate them differently. These are the people who are senior, with decision-making capacities.

Internet has come to African libraries because it is important. But we don't use it here the way it is supposed to be used. We have dial-up! It's expensive, and very slow. We need leased lines. So how to change this? How will the guidelines reflect this?

African life, librarianship, is not an Internet culture. It is a paper culture

Murmurs of disagreement in some places (but nodding in others)

To illustrate point, he points out that only about 15 people use a African listserve. Says that librarians do not have the skills to even type. So training!

Masengari, Nairobi

Concern regarding the right to information and the moral and ethical issues implicit in this. See the issues within an individual (society) context. Remember that some African countries are fragile. In a transitional phase. So be careful…

An appeal for transitional societies to give a little more time to thinking before being involved in consultation process. These ethical and moral issues need to be discussed – whose are we talking about? What limits are we to impose? Too restrictive, too free? More time to think about the issues is needed, and all stakeholders to be consulted.

Erik, Kenya

Wanted to thank Diana. INASP and training is very important. Basic question for Africans is not some people and know and some don't. The question is: do we really need the Internet?

Paul Sturges

Accepts some arguments urging restraint. But the quality of comment today has been very good, discussion has been excellent and will be taken on board.

Appendix 5 - List of Abbreviations

ACLU	American Civil Liberties Union
ALA	American Library Association
BBC	British Broadcasting Corporation
CALEA	Communications Assistance for Law Enforcement Act
CIA	Central Intelligence Agency
CILIP	Chartered Institute of Library and Information Professionals
CMC	Computer-mediated communication
COE	Council of Europe
CSPR	Computer Professionals for Social Responsibility
FAIFE	Freedom of Access to Information and Freedom of Expression
FFII	Foundation for a Free Information Infrastructure
ICT	Information and communications technology
IDEA	International Institute for Democracy and Electoral Assistance
IFLA	International Federation of Library Associations and Institutions
ISP	Internet Service Provider
ITU	International Telecommunication Union
JISC	Joint Information Systems Committee
MIT	Massachusetts Institute of Technology
OII	Oxford Internet Institute
OSI	Open-source Initiative
RSF	Reporters sans Frontiers
RSLIS	Royal School of Library and Information Science, Copenhagen
SCECSAL	Standing Conference of Eastern, Central and Southern African Library and Information Associations
SCOFI	Smart Card Online for Filtering Internet
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Human Development Programme
UNPD	United Nations Population Division
WSIS	World Summit on the Information Society