

ACCESS TO DIGITAL INFORMATION IN CYBER WORLD

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Abstract

The concept of access to digital information is already a comfortably familiar one, although it has been with us for a staggeringly short pace of time. International organizations, governments, commercial and public sectors have been seized by the concept of the information society and have grasped at the digital information as one of the tools which can help mould this into a reality in cyber age. Impact of state of art technology in information processing, storage and communication techniques have revolutionized the role of information operators worldwide. Conversely the bang of cyber era are reconsolidating the information and its positions, building digital collections, redesigning their services and products to add value to their services. This paper entails theoretical description of digital pattern of information. It also deals with the basic legal characteristic; requirement, complexity and data copy write issues for building digital collections. It concludes with usage, problems and outlook of digital information in cyber age.

Introduction

With the help of modern technology the world has become a smaller place. People from all over world can communicate with each other easily and efficiently. This integration among the different countries across the globe is known as globalization. Globalization can be of different types social, cultural, economic, technological, biological, etc. with the growth of modern technology in this era people have come closer and have begun to understand the different cultures of the people living in other countries. Due to the impact of globalization the communication between the people living across the globe has increased to a great extent. The role of library professionals are vigorous and active participation is mandatory as various channels of communication are available in the modern age. Information seekers are no longer satisfied with only printed materials. Conventional library wanted to supplement the printed information with more dynamic electronic multimedia documents. The users' demands for information delivery in digital form at their desktop are increasing in recent times. We have witnessed information explosion and information technology revolution leading to the emergence of electronic information era. One of the things that people don't remember enough anymore is that when the Internet and shortly thereafter the Web really took off as consumer services in the mid to late 1990s that whole universe was already richly seeded with free content that had been supplied by universities, by museums, by cultural heritage institutions,

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by government agencies.¹ As a result, the information society are facing new challenges, new competitors, new demands, new expectations and variety of information services from users tailored to their wants and needs. The current developments in technological capabilities such as high resolution capture devices, dramatic increase of digital storage media, explosive growth of internet and www, sophisticated search engines, fast processing power and reducing cost of computers, high bandwidth networks and increasing number of electronic publications make it possible for the establishment of digital information. The advancement in technology and various inventions in the past century have brought about a major change in the world today, the biggest being the integration of societies. Thanks to technology, we can now communicate with people from all around the world with great ease. The internet has also allowed us to transfer huge amounts of data to a place half way around the world in a matter of seconds. The various means transportation is a lot faster and we can now travel half way around the world within a day. This has led to global access to information, where different economies, societies and cultures of the world are integrated through a global network.

Access To Digital Collection

A digital library can be search for any phrase; it can be accessed all over the world; and it can be copied without error. This is why digital libraries are coming. They address traditional problems of finding information of delivering it to users and of preserving it for the future. Digital information takes less space than paper information and thus may help libraries reduce costs. But most important, they can provide a level of service never before attainable – delivery of information to the user's desk, search capability by individual words, and sentences and information that does not decay with time whether words, sound or images.² Thus, library and information services are fundamental to the goals of creating, disseminating, optimally utilizing and preserving knowledge. They are instrumental in transforming an unequal society into an egalitarian, progressive knowledge society. Developments in Information Communication Technology (ICT) have enabled libraries to provide wide public access to all, and to bridge the gaps between the local, national and global levels. Yet the library and information services sector in India has not kept pace with the paradigmatic changes taking place in society. It is imperative that a library should change gear and develop at an accelerated pace. Currently, the success of libraries are depends largely on the nature, content and quality of its digital collections. The basic requirement in creating digital information will be the building of digital collections. The digital collection includes various resources such as electronic journals, books, full text, CDROM databases etc.

As digital resources increased exponentially over the last decade, academic libraries have heavily invested in electronic books, research databases, as well as electronic journals, and made them accessible via their library Web portals. Some libraries also undertake usability initiatives to improve their Web portals in

order to provide users with better and easier access to their electronic collections and services. Despite these great efforts, it has been observed that instead of accessing a wealth of electronic content through the library Web portal, students tend to rely on Internet search engines (e.g., Google), and public Web portals (e.g., Yahoo) even though scholarly information is not always readily available there³ and they often have difficulty distinguishing authoritative from non authoritative information on the Internet. As a result, underutilization of library electronic resources has become a common concern.⁴

The face of digital information is now widely accepted to mean the use of digital technology in the provision of information services and operations, which include acquisition, organization, storage, conservation and dissemination of information to users. In Indian context the digital information is still evolving and taking shape. The Digital Information Federation defines digital information as: Organizations that provide the resources, including the specialized staff, to select, structure, offer intellectual access to, interpret, distribute, preserve the integrity of, and ensure the persistence over time of collections of digital works so that they are readily and economically available for use by a defined community or set of communities.

Different expressions such as electronic library, virtual library, information without walls and digital information have been used interchangeably to describe this broad concept. Cleveland has gives the following working definition of digital library. "Digital information is information with same purposes, functions and goals as traditional information-collection development and management, subject analysis, index creation, provision of access, reference work, and preservation. A narrow focus on digital formats alone hides the extensive behind the scenes work that information do to develop and organize collections and to help users find information." Since the turn of the century, digital libraries have become an increasingly taken-for-granted part of the networked information environment, becoming established in academic, private sector, not-for-profit, and governmental settings. According to Borgman⁵ Digital libraries have become an essential foundation for areas as diverse as electronic publishing and strategic defense, and serve as a primary means to deliver content for scholarship, commerce, cultural heritage, and education

Upshot Of Cyber Era

With the growth of IT and its application in every field there arrived a need for formulating IT specific laws and legal bindings. These laws relate to copyright protection, data protection, rights of cyber citizens, analysts of cyber crimes and regulations for the business aspects of IT. As the IT laws were announced, there was a coupling effect in the business, banks, crimes, and thefts. Making adaptation in the listing law structure, in order to bring in the IT culture and thinking to the legal world. Many unthought-of of issues creep up, that still relate to many cases being lodged and argued upon. In some of the cases the issues related to the copying of data. Copyright protection deal with this, but it

does not relate a computer program expressed in object code and for an operating system program to being a proper subject matter for copyright protection, or whenever the copyright protection is extended beyond the actual code of the program to protect the programs structure.

Usage of data on the internet again brings up the discussion of copyright. Since the data is easily available, it may or may not be the property of the authorities putting up the data. Copyright of the data, may just sound as some other typed lines that need not be considered to the extent of deleting from the data to the legal language of copyright protection. Again it is the authorities publicizing their data openly that are in picture. The quality and quantity of data that they openly put up on the net and its effect on the net community should be considered. When it comes to the cyber crimes, there is no end. But the beginning may sound even more worried. As they say "unawareness is not a protection". But, how much pains are being taken, how much effort is being made in order to spread awareness about cyber laws? To how much extent the law governance is stepping up to spread awareness among the IT professional, the cyber related legal acts and clauses.

In this new cyber era, libraries are making a paradigm shift from their present strategy of collection or acquisition of information to a strategy of information access. Libraries have recognized their professional role in creating different capsules of information for their users. The library and information centers are dedicated to support the format and formation of information and a knowledge society.

There has been a huge, worldwide explosion in the use of the Internet. It is already changing the way we work, shop, bank and also the way we live. The PC is becoming commonplace in many homes and there is a general acceptance that this is a way forward. Analogue phone lines are being replaced by faster digital lines (ISDN). Even faster high-speed digital connections will soon be delivered to households, offering a whole day connection to the Net. Many countries around the world are developing in communication technology via satellite, wireless and cable to enhance worldwide Internet access. Accesses to the Internet and its services have already become available through the use of digital TVs and mobile phones in the advanced countries. The use of the Internet by many libraries, universities and the library users have led to a rapid increase in the number of sites. Information technology has had an impact on the way we work for quite some time, but the Internet has now added electronic mail, tele-working and video conferencing to the workplace.

The primary method of building digital collections is digitization. Digitization means conversion of any fixed or analogue media-such as books, journals articles, photos, painting, microforms-into electronic form through scanning, sampling or infect even rekeying. It is the creation of digital collection of information with multimedia features and thus offering faster and easy access to large number of users. Promoting access to information resources is a major

driving force for digitization of documents. Digitization provides solutions to traditional information problems such as conservation, preservation, storage space, multimedia documents and remote access to information collections. Digital information offer new dimensions of easy access to their resources when information materials are in digital form and stored electronically on digital media, they can be used and re-used for any suitable purpose. They can be retrieved easily to answer an information enquiry used to create multimedia applications, or used for resource sharing in either a network environment or for electronic publishing on the internet, or the World Wide Web. As long as the resources are in digital form regardless of whether they are still images, video or sound-and are on a web server, one can use of multimedia and the knowledge of the navigator permit the delivery of national and international information to users at their desktop. In this kind of library environment, printed information sources such as books, journals archival material cannot meet a highly competitive technology. The digital information sources become essential.

Leading Factors

For years, information providers have focused on developing mechanisms to transform the myriad distributed digital collections into true "digital libraries" with the essential services that are required to make these digital libraries useful to and productive for users. As Lynch and others have pointed out, there is a huge difference between providing access to discrete sets of digital collections and providing digital library services.⁶ To address these concerns, information providers have designed enhanced gateway and navigation services on the interface side and also introduced federation mechanisms to assist users through the distributed, heterogeneous information environment. The mantra has been: aggregate, virtually collocate, and federate. The goal of seamless federation across distributed, heterogeneous resources remains the holy grail of digital library work.⁷ Digital information can store large volume of information in digital form for archival management. It provides users with immediate access to the rapidly growing information stored in digital form. It provides users fast access to multimedia information quickly and interactively through the integration of technologies. It offers remote access to expensive and special collection of information from many locations by many simultaneous users. Protection of old, rare and unique documents for posterity is an important function of any library. Paper deterioration and life consequences are major threat to document held in information. Many electronic publications are versions of materials that are also published in print. When publishers put a price on the electronic publication they want to know if sales of electronic information will decrease sales of corresponding print products. If a dictionary is online, will sales in book stores decline (or go up)? If a journal is online, will individual subscriptions change? After a decade of experience with materials online, firm evidence of such substitution is beginning to emerge, but is still hard to find for any specific publication. At the macroeconomic level, the impact is

clear. Electronic information is becoming a significant item in library acquisition budgets. Electronic and print products often compete directly for a single pool of money. If one publisher generates extra revenue from electronic information, it is probably at the expense of another's print products. This overall transfer of money from print to electronic products is one of the driving forces that are pressing every publisher towards electronic publication. Some dramatic examples come from secondary information services. During the past decade, products such as Chemical Abstracts and Current Contents have changed their content little, but whereas they were predominantly printed products, now the various digital versions predominate. The companies have cleverly offered users and their libraries many choices: CD-ROMs, magnetic tape distributions, online services, and the original printed volumes.⁸

The leading factors are:

- i. Managing large amounts of digital contents of information
- ii. Preserving unique collections through digitization
- iii. Performing searches that are impractical manually
- iv. Protecting content owners information
- v. To improve access to information
- vi. Dealing with data from multiple locations
- vii. Enhancing the distributed learning environment

Although digital information offers many advantages they are not free from certain problems. Digital information contains information collections predominantly in digital or electronic form. Electronic publications have some special problems of management as compared to printed documents. They include infrastructure, acceptability, access restrictions, readability, standardization, authentication, preservation, copyright, user interface etc. The major obstacle to digitization is that is very expensive, especially to undertake alone in-house digitization. It needs technical expertise to deal with the matter is another obstacle. Digital information is an expensive undertaking. Funding is required to: Purchase the high quality digitization equipments to facilitate the digitization of current traditional information holdings

- i. Training for staff and end users on the use of modern technology
- ii. Purchasing of other machines such as servers, workstations etc
- iii. Subscribing online and offline information resources
- iv. Purchasing appropriate software
- v. Maintaining of the systems etc
- vi. Identifying policy for the sources of funding.

The newly available resources on the Internet and its World Wide Web vastly increase the tools available to researchers. The materials moved from library shelves to Internet sites and other electronic publications. Consequently, user's access has increased because of the new finding aids and tools included in the electronic versions of publications and associated materials.

- Websites can be searched using search engines—such as Google—or online web-based tools
- Reports can be searched using tools included in programs like Microsoft Word or Adobe Acrobat.

Software Issues

Greenstone is digital library software used for building and distributing digital library collections, organizing information and publishing it on the Internet or on CD-ROM. Produced by the New Zealand Digital Library Project, it integrates functions such as metadata, full text search and retrieval, multilingual support, support for multiple document formats and administration. Greenstone is open-source software, issued under the terms of the GNU General Public License. The aim of the software is to empower users, particularly in universities, libraries, and other public service institutions, to build their own digital libraries. The Indian Labour Archives was one of the first Indian digital library initiatives to use Greenstone. In India, at present, Information Library Network (INFLIBNET), a consortium incubated under the rubric of UGC, is actively involved in Library Automation, Database Creation, Software Development, Human Resources Development, Information Services and Networking. They have developed a software SOUL based on relational database management language, which is used for cataloguing, archiving as well as enabling online public access of resources. The Indian Institute of Science in Bangalore is closely involved with the INFLIBNET for developing and standardizing protocols of information management for digital library as well as information repository initiatives. The National Informatics Center (NIC) of India has also developed digital library software - DelSis - that is used by the Developing Library Network (DelNet), which is also an effort to network libraries and for resource sharing. DelNet aims to provide access to content in Indian Languages and in Urdu using this software.⁹

Copyright And Preservation Issues

There is intellectual property in general, including copyright, rules on fair use, and special rules on copy protection for digital media, and circumvention of such schemes. The area of software patents is controversial and still evolving in Europe and elsewhere.¹⁰

Copyright has been called the single most vexing barrier to digital information development. Copyright is the right that protects the owners' creative work or ideas. Content owner's information whether in analogue or

digital form has to be protected and financially compensated for use of their work and ideas? The ease with which digital objects can be copied, transmitted and used simultaneously poses a major problem to enforce copyright laws in digital information. Cyber law is the law governing computers and the Internet. In today's highly digitalized world, almost everyone is affected by cyber law. Most of libraries extensively depend upon their computer networks and keep their valuable data in electronic form. Digital signatures and e-contracts are fast replacing conventional methods of transacting business.

Copyright law has been violated in digital environment due to lack of control over content access and reproduction of multiple copies of digital media. There is serious problem in the preservation of digital materials caused by the fact that digital information is very dynamic. The databases are always being updated. What one gets on the web site to day now may not be there in the next few seconds. The digital media are so fragile with a limited shelf life. Further still, the digital information on the storage devices with time will be rendered unreadable by obsolescence of technology, this is due to the fact that information technology evolves very first and the old systems are no longer in use. To preserve the digital information will keep on migrating information from one digital hardware and software configuration. The policy should address these issues. If preservation of digital resources will not be in place then future generations will look back at this time as a digital dark age- a time when, somehow, the records of human knowledge went missing. The digital storage media such as hard disks, tapes and floppy disks have a very short life span due to rapid technological obsolescence. The media used to store digital information become obsolete in anywhere from two to five years before they are replaced by better technologies. Traditional information have been compiling bibliographic details of information materials produced i.e. each country compiles and publishes it national bibliography. Information materials in the digital; information are massive and dynamic hence compiling bibliographic details is not possible. Pricing of information in the digital world is going to be very complex. Ownership is expected to give way to licensing pay per use.etc. Archiving and preservation of electronic information may be one of the most challenging of all tasks we have to solve over the coming two decades.

Conclusion

The related topics of software licenses, end user license agreements, free software licenses and open-source licenses can involve discussion of product liability, professional liability of individual developers, warranties, contract law, trade secrets and intellectual property. In various countries, areas of the computing and communication industries are regulated – often strictly – by government bodies. There are rules on the uses to which computers and computer networks may be put, in particular there are rules on unauthorized access, data privacy and spamming. There are also limits on the use of encryption and of equipment which may be used to defeat copy protection schemes. The

export of Hardware and Software between certain states is also controlled. There are laws governing trade on the Internet, taxation, consumer protection, and advertising. There are laws on censorship versus freedom of expression, rules on public access to government information, and individual access to information held on them by private bodies. There are laws on what data must be retained for law enforcement, and what may not be gathered or retained, for privacy reasons. In certain circumstances and jurisdictions, computer communications may be used in evidence, and to establish contracts. New methods of tapping and surveillance made possible by computers have wildly differing rules on how they may be used by law enforcement bodies and as evidence in court. Computerized voting technology, from polling machines to internet and mobile-phone voting, raise a host of legal issues. Some states limit access to the Internet, by law as well as by technical means.¹¹

Access to digital information has brought considerable changes and yet many librarians remain untutored. Invariably then, librarians cannot respond quickly to community needs. Librarians should be desirous that their libraries should respond to the changing needs of the community and, where possible, anticipate them. Hence they are expected to draw up schemes of induction and training for their staff. There is only limited of co-operative ventures among librarians in the country. If librarians want to play a more effective role in this social, equality they should start exploring ways of putting their information resources, both materials and personnel, at the service of other information and advice agencies by agreeing to keep an update of current information in documents in the country. This will provide access to their numerous users who use their services and this will indeed save time in their search for information. Digital information is expected to bring about significant improvement over current modes of information publishing and access methods. Educators, researchers and students across the world will be among the first to benefit from access to digital information, particularly those in developing countries. The electronic initiative is sweeping the globe. There is mention of e-education, e-government, e-commerce, e-medicine, etc. For librarians to survive in this era the e-information must take the center stage. Librarians must be willing to change from the traditional methods of collection, organization, storage and dissemination of information. The information explosion in the world today has resulted in huge amounts of information being generated, processed, stored and disseminated in digital formats. With the growth of the Internet and World Wide Web in institutions and homes, publishing and dissemination of information resources in digital formats has become common. The biggest challenge now is that a lot of information is being generated and posted on the web. Unlike in the traditional college information where information materials are to be evaluated before selection is done. This is not the case with most of the information available on the Internet. Some of the information available on the Internet is inaccurate, out of date, inappropriate and inaccessible language. The establishment of digital information is a complex task and does not happen easily

and cheaply. It depends upon several factors such as organizations goal, value of timely information, availability of necessary infrastructure and resources for conversion, economics of information conversion, demands from users, government policies etc.

Endnotes

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