ICT IN DIGITIZING LIBRARY USES IN INDIA

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ABSTRACT

Libraries are an essential component of a nation's information infrastructure. Historically, libraries have played various key roles in information-oriented societies as the major storehouses of human kind's recorded knowledge. However, the physical media that store the recorded knowledge are constantly undergoing metamorphosis due to continuous technological advancements and innovations. Currently, we live in the so-called "Digital era" where by information is recorded, stored, retrieved, and disseminated in the digital form unlike the past when information was accessed in analog formats. Nowadays, information is capable of being stored on specially constructed electronic media and is retrieved whenever required in the most fundamental form, as arrays of zeros and ones (i.e. binary format). Thus, digitization of the library resource materials opens up new modes of uses enables a much wider potential audience and gives renewed means of viewing our cultural heritage with a higher degree of clarity and in a much more compact structure Library is dependent on life and change. Without the human and organizational changes that occur, the library would neither function properly nor meet its purposes. Dr. S.R. Ranganathan, the father of library and information science, formulated the five famous laws of library and information science. The fifth law-"Library is a growing organism" is now being challenged by the tremendous progress of ICT and its speedy application in all fields, especially in the field of library and information science. Information and Communications Technology (ICT) is an umbrella term that includes all technologies for the manipulation and communication of information. The term is sometimes used in preference to Information Technology (IT), particularly in two communities: education and government. Although, in the common usage it is often assumed that ICT is synonymous with IT; ICT in fact encompasses any medium to record information (magnetic disk/tape, optical disks (CD/DVD), flash memory etc. and arguably also paper records); technology for broadcasting information - radio, television; and technology for communicating through voice and 668 ICAL 2009 – POSTER PAPERS sound or images - microphone, camera, loudspeaker, telephone to cellular phones. Thus, "ICT" makes more explicit that technologies such as broadcasting and wireless mobile telecommunications are included. It should be noted that "ICT" by this English definition is different in nuance and scope than under "ICT" in Japanese, which is more technical and narrow in scope. ICT capabilities vary widely from the sophistication of major western economies to lesser provision in the developing world. But the latter are catching up fast, often leapfrogging older generations of technology and developing new solutions that match their specific needs. This paper is based on application of digital library in Information

Communication Technology in Library services to meet the user's requirement in present scenario and importance of information communication technology as digital library (DLs) in college libraries provides instant and easy access to information that lead towards the modernization of college library services. Information communication technologies provide wide range of tools and service for the development and modernization of libraries in context of acquition, technical process, storage, retrieval and dissemination of knowledge or information.

Keywords: DLs , ICT, IT

INTRODUCTION

First, the researcher would like to focus on the significance of the changes in the names given to the technology we called at different times, among others, "computer technology", "digital technology", "information technology", and "information and communication technology". There seems to be some disagreement here, and again it is reflected in the names: the "computer era", the "digital era", the "IT era", and now the "ICT era" – to mention just a few most popular. We too name "our" society accordingly; if we live in a "computer era" we live in a "computer-based society"; if ours is the "ICT era" we are members of the "ICT society", and so on. Of course, chances are that future generations will give our times a name altogether different from any of those we consider presently. There is no doubt that this new era in which we live started with the computer revolution. The invention of computers provided the foundation of all subsequent technologies, including ICT, which keep changing our world and our lives. However, the aforementioned evolution of names reflects not only the changes computers brought into our lives. Digital Libraries basically store materials in electronic format and manipulate large collections of those materials effectively. Research into digital libraries is research into network information systems, concentrating on how to develop the necessary infrastructure to effectively mass-manipulate the information on the Net (NSF, 1999). The broad concept of digital libraries implicit in the National Leadership Grants program of the Institute of Museum and Library Services fits this purpose: The Digital Revolution has affected nearly every aspect of library and museum services, from the automation of internal recordkeeping systems to the digitization of physical collections, and from the acquisition of new "born-digital" works of art or library publications to the use of technology to present collections and engage audiences. Digital technology enables the full range of holdings in our museums, libraries, and archives – audio, video, print, photographs, artworks, artifacts, and other resources – to be cataloged, organized, combined in new ways, and made accessible to audiences in new ways. Digital technology connects more people to the resources and services that only museums and libraries can provide (IMLS, 2005). A "digital library" is fundamentally a resource that reconstructs the intellectual substance and services of a traditional library in digital form. Digital libraries(DLs) consist of digital contents (which are sometimes but not necessarily text-based), interconnections (which may be simple links or complex metadata or query-based relationships), and software (which may be simple pages in HTML or complex database management systems). A single, simple, stand-alone web page is probably not a digital library in any meaningful sense, any more than a single page or a single book is a traditional library. A mass of raw data such as comes from the Hubble telescope is probably also not a digital library, though its contents arguably belongs in one. Digital libraries are not replacements for traditional libraries. They are rather the future of

traditional libraries, much as medieval manuscript libraries simply became a specialized and much revered part of the larger print-based libraries that we have today (Seadle, 2006). The questions were less about what a digital library is than what it is not? Using this definition, Google Scholar or even Wikipedia could be considered a digital library. Especially in Germany, the types of projects that are called digital libraries are very broad and varies from a hyperlink-list to pure holdings digitization. "Digital" is a buzzword whose meaning few professionals care about precisely. An interesting question is what is included semantically in this concept. In its Latin origin digital means, "finger" and this meaning persists in medical fields. For a health professional a digital library could be a "finger" library! The above definition further predicts that digital library content is in digital form. But "digital form" is ambiguous. For the students it was not clear whether digital referred to the data type – i.e. an electronic format – or to the environment – i.e the internet. This classroom dialogue led to the exploration of how others defined digital libraries: The digital library is not a single entity; The digital library requires technology to link the resources of many services that are transparent to the end users; Universal access to digital libraries and information services is a goal; Digital library collections are not limited to document surrogates: they extend to digital artifacts that cannot be represented or distributed in printed formats (ARL, 1995). The digital library is the collection of services and the collection of information objects that support users in dealing with information objects available directly or indirectly via electronic/digital means (Leiner, 1998). A managed collection of information, with associated services, where the information is stored in digital formats and accessible over a network (Arms, 2000). Today, the requirements imposed on DLs are very different from that early time. A novel notion of DLs, also referred to as "knowledge commons" (Ioannidis, 2005), has recently emerged, whose fulfillment requires new technologies and new organizational models. This paper focuses on such new DLs by first discussing the motivations for their introduction, then presenting an innovative DL technology, called DILIGENT, and, finally, illustrating the role that libraries can play in this new scenario.

ORGANISATION OF THE PAPER

In this article, an attempt has been made to make a ICT technology in digital era. The article is divided into four sections. After a brief introduction of the digital library, the next section provides the objectives and literature review. The subsequent section focuses on relative future of digital library , challenges and opportunities of ICT technology . The last part concludes the digital library in ICT era.

LITERATURE REVIEW

Asnafi defines ICT as the technologies that help us record, store, process, retrieve, transfer, and receive information. IT and ICT are dependent on each other. IT may refer to the machine and ICT to its products (Asnafi 2005). The concept of IT has been expanded to include electronic communications and the use of the term ICT reflects that ("Information Technology" 2008). IT may imply one-way communication, while ICT implies interaction between the user and the data. IT can be considered the convergence point for communication. IT also refers to a set of disciplines and techniques used in handling and processing data. The rise of an information economy has brought about an information age that is highly reliant on information and

communication technologies (ICTs) (Ngulube, 2004, p. 21). It is an age where the survival and development of human kind are ultimately defined by the use, production, and consumption of information. The African Information Initiative adopted the digital agenda in 1996 in order to transform stagnating African economies (ECA, 1996, p. 9). In 2001, the 34th session of the Commission for Africa reaffirmed that ICTs were key to the economic and social development of the African continent (Ngulube, 2004). Digital libraries are organizations that provide the resources, including specialized staff, to select, structure, offer intellectual access to, interpret, distribute, preserve the integrity of, and ensure the persistence over time collections of digital works so that they are readily and economically available for use by a defined community or set of communities (Waters, 1998; Digital Libraries Federation, 2002). The application of Information Communication Technology in Library services to meet the user's requirement in present scenario such as Web technology, Importance in modernization, Internet technology, Networking technology, Bar-coding technology, Digital and virtual libraries, RFID technology, Scanning technology, Optical disc storage technology(Bansal, V., 2010, p.102-104).

OBJECTIVES OF THE STUDY

1. To provide greater and easier access information in digital era.
2. To allow access to computers and the internet for everybody, so that a divide does not build up between those who do not possess computers.
3. To assist people to develop their ICT skills for accessing information and to give access to digital learning materials, which are set to increase in both quality and quantity?
4. To provide staff expertise to seek out information or learning materials-staff become skilled gatekeepers not just of printed sources but of the digitalizes soon.

INFRASTRUCTURE OF NEW DIGITAL LIBRARIES

A digital library project would typically require following equipment:

1. Server Computer
2. Desktop Computer
3. Client Computer
4. Digitization Equipment
5. Network connectivity
6. Other equipment

Digital Library Infrastructure on Grid Enabled Technology (DILIGENT)

It is a three-year integrated project (2004-2007) funded by the European Commission under the Sixth Framework Programme for Research and Technological Development. The objective of this project is to develop a digital library infrastructure that will enable members of dynamic virtual research organisations to create on-demand transient digital libraries that exploit shared resources. Resources in this context are multimedia and multi-type content repositories, applications, and computing and storage elements. This project focuses on the development of

DLs that "are not ends in themselves; rather they are enabling technologies for digital asset management, electronic commerce, electronic publishing, teaching and learning, and other activities". From an abstract point-of-view, the DILIGENT infrastructure can be understood as a broker serving DL resource providers and consumers. The providers are the individuals and the organisations that decide to publish their resources under the supervision of the broker, according to certain access and use policies. The consumers are the user communities that want to build their own DLs. The resources managed by this broker are content sources (i.e. repositories of information searchable and accessible through a single "entrance"), services (i.e. software tools that implement a specific functionality and whose descriptions, interfaces and bindings are defined and publicly available) and hosting nodes (i.e. networked entities that offer computing and storage capabilities and supply an environment for hosting content sources and services). Providers register their resources and give a description of them by exploiting appropriate mechanisms provided by the infrastructure. The infrastructure also automatically derives other properties of the resources that are used to enrich the explicit description. The infrastructure manages the registered resources by supporting their discovery, monitoring and usage, and by implementing a number of other functionalities that aim at realising the required controlled sharing and quality of service. A user community can create one or more DLs by specifying a set of requirements. These requirements specify conditions for the information space (e.g. publishing institutions, subject of the content, document types), for the operations that manipulate the information space (e.g. type of search, tool for data analysis), for the services for supporting the work of the users (e.g. type of personalized dissemination, type of collaboration), for the quality of service (e.g. configuration, Availability, response time), and for many other aspects, like the maximum cost, or lifetime. The broker satisfies the community's requirements by selecting, and in many cases also deploying, a number of resources among those accessible to the community, gluing them appropriately and, finally, making the new DL application accessible through a portal. The composition of a DL is dynamic since the DL broker continuously monitors the status of the DL resources and, if necessary, changes them in order to offer the best quality of service. By relying on the shared resources many DLs, serving different communities, can be created and modified on-the-fly, without big investments and changes in the organisations that set them up. From the functional point-of-view, the DILIGENT system is divided into five functionality clusters: (1) DL creation and management is responsible for the dynamic construction and maintenance of the transient DLs and for the controlled sharing and management of the resources that are used to implement them. The functionalities offered by this cluster allow users to express the requirements that the DL must fulfill. Moreover, they automatically identify and arrange the pool of resources needed to satisfy these needs. (2) Content and metadata management implements the handling of DL content and related metadata, the consistent and distributed management of annotations, and the integration of external content and metadata sources. (3) Process management manages the creation of user processes composed of existing services, the validation of their correctness, the automatic optimization of their definition according to the resources available and the service Characteristics, and their reliable execution. Thanks to this feature, the DILIGENT system can easily be enriched with additional operational workflows to meet new user requirements. (4) Index and search management is responsible for enabling cost-efficient search and retrieval of information in DLs, while satisfying the level of quality required for the overall data retrieval and delivery operations. (5)

Application specific functionality provides the functionality needed to support user-specific scenarios, like portals, document visualisation, or features extraction.

RFID

RFID (Radio Frequency Identification) is the latest technology being used in modern library's theft detection system. Unlike EM (Electro Mechanical) and RF (Radio Frequency) systems which have been used in libraries for decades, RFID – based systems moved beyond security to become tracking system that combines security with more efficient tracking of materials throughout the library, including easier and faster charge and discharge, inventorying and material handling. RFID is a combination of radio frequency based technology and microchip technology. The information contained on microchips in the tag affixed to library materials is read using radio frequency technology regardless of item orientation or alignment and distant from the item is not a critical factor except in the case of extra wide exit gates. The corridors at the building exits can be as wide as four feet because the tag can be read at a instance of up to two feet by each of two parallel exit sensors. The target used in RFID systems can replace both EM or RF theft detection targets and barcodes. RFID is necessary requirement for modernization of college libraries.

ROLE OF DLs IN FUTURE

In the framework envisaged by DILIGENT, libraries play an important role at the organisational level. In particular: As providers of resources, they can help to enhance the amount of available resources by making stakeholders aware of the importance of sharing. In particular, as far as the sharing of content is concerned, they can operate by promoting digitisation campaigns and the open access approach. These actions may result in a vast amount of new digital information accessible online which can be exploited by advanced services. . Within a digital framework, libraries are certainly the best candidates for carrying out content description, maintenance and preservation of resources. By exploiting their large experience acquired in the past, they can contribute to the long-term availability and to the quality of the resources disseminated by the DLs. Long-term availability also requires the implementation of models able to support the sustainability of the resources provided. Libraries, either alone or as members of library consortia, can also act as the organisations deputed to define and put in place these models. As main resource providers, libraries can work jointly on the definition of common policies and standards. An agreement on these aspects would strongly contribute towards facilitating the design and development of the new complex services required to fulfill the emerging user needs.
. In the future envisaged by DILIGENT, libraries can also play an important role as mediators between the infrastructure and the user communities. In particular, they can proactively promote and facilitate the creation of DLs that respond to the needs of the user communities. They can also assist users by providing, if necessary, the skills required to select, update and exploit the DL content and services. Studies from all over the world show that when the statistics include data about gender, the "hard"-"soft" line reflects usually also the gender division within ICT.

The term "computer science" understood in its original sense, i.e. as "informatics" – in many countries informatics is regarded as a branch of mathematics – is still definitely an almost exclusive domain of men both in social perception and in actuality. On the other hand, the name ICT, mainly due to the "communication" component, not only testifies to the change in the character of the technology addressed by James Moor, but it also indicates that women too may claim this technology for their own. For this reason one can make a statement that for the first time since the Industrial Revolution there is (at least in theory) a truly universal technology: The information and communication technology. Last but not least, one takes it now almost for granted that ICT is global. Therefore, the society of the ICT era can be rightly called the Global ICT Society – a global society supported by a universal technology. This new, global society is also often called the knowledge society, and its economy – the knowledge economy. The knowledge society is also called sometimes the "knowledge and information society", and the knowledge economy is known otherwise as knowledge-driven economy". Knowledge society will be understood here as "a society endowed with the ability and capacity to generate and capture new knowledge and to access, absorb and use effectively information and ICTs". Knowledge economy is understood as one "in which the generation and exploitation of knowledge play the predominant part in the creation of wealth". Once knowledge became the economic backbone of the global ICT society, the importance of ICT for our lives has increased even more considering the importance of ICT in the production, transfer, and storage of knowledge. At times, "knowledge society" and "knowledge economy" seem to be almost synonymous, but they are not. It matters whether we use the term "knowledge society" or "knowledge economy", even though sometimes it might be difficult to notice the difference between these two terms because at least since the time of Adam Smith and later Karl Marx there is a tendency to identify a society with its economy or – more precisely – with the society's leading mode of production of wealth. Here, some additional clarification regarding names is needed because the existing difference between "knowledge economy" and "knowledge society" affects moral philosophy. The roots of this difference go back to what in Ancient Greece was perceived as the difference between episteme and techne; roughly the equivalent of theoretical and practical knowledge or – as Joel Mokyr calls it – the propositional knowledge and the prescriptive knowledge. One could call the propositional knowledge the "what" knowledge, and the prescriptive knowledge the "how" knowledge. It seems that scholars who are more interested in the theoretical, propositional knowledge are inclined to favor the idea of the knowledge society, whereas those involved with the prescriptive knowledge, favor the concept of knowledge economy. With regard to ethics it seems that there is a much greater interest in moral issues regarding knowledge society than it is in relation to knowledge economy; which is a quite understandable situation, albeit hardly a desirable one. In any case, it seems to be worthwhile to ask whether it would be possible to build a bridge between knowledge society and knowledge economy; and if so, what kind of ethical problems could be solved that way. ICT could be helpful here as well, since ICT, the universal technology, is used for the advancement of both propositional and prescriptive knowledge. Moreover, the presence of the communication component in ICT blurs somewhat the line between technologies understood as "the manipulation of nature for human material gain". There seems to be, therefore, a hope that the new global society in which ICT plays the pivotal role can become a knowledge society based on knowledge economy.

ISSUSES AND CHALLENGES OF DLs IN ICT ERA

All LIS schools recognize the importance of infusing more ICTs in their curricular. But their wishes and efforts are constantly thwarted by a number of key challenges. These include:
a) Inadequate technological infrastructure to support the integration of ICTs in the curricula. This refers to issues as poor or lack of national ICT policy, low internet connectivity, inadequate supply of electricity, inadequate number of PCs, etc. There is need for policies that deregulate satellite communication and other telecommunication links, regulate ISPs, regulate government and cross-border data flows, etc. ICT policies can help address stringent tax regimes that still treat computers, communication equipment and other peripherals as luxury items, thus imposing heavy import duties on them and subsequently rendering these items very expensive. Internet access is now widely available, but the efficiency is poor as many LIS schools experience downtime, several times a week. The telecommunication services are the root cause of these downtimes in terms of, either, low bandwidth, technical faults and other network configuration problems. There are also "many external systemic factors such as electricity, transport networks, import duties" etc, which impact on internet service delivery on the African continent. In some institutions, access is limited, not only by the number of Internet service points, but also by the time that access is available or permitted, leave alone the difficulty of bandwidth. Yet for research purposes, access to the Internet is no longer a luxury or privilege for only a few people because in academic circles, access to the Internet and hence to the world's stores of knowledge is a necessity. LIS departments still need to lobby to gain greater access to Internet resources for academic staff and/or research. Thus there is urgent need for improved ICT policies and infrastructure in institutions and countries. (b) Funding/sustainability of the technology is the major non-technical constraint in LIS schools. Most universities decry the issue of under-funding in most of its functions. Besides, the unprecedented, phenomenal and multifaceted growth and development of the ICTs themselves pose another challenge. This rapid pace and transient nature of technological development requires sustained funding. While the centralization of ICT services, hence funding, has been found to be the most affordable system for institution-wide development and use of ICTs, it only works well where there exists a policy that has explicitly incorporated the goals and needs of all sectors, including those of the LIS school. In institutions where the political economy is slanted, coupled with the absence of such a policy, a LIS school may suffer from neglect and hence be unable to develop and use ICTs. (c) Job market vs curriculum change. There is a gap between the competencies that LIS education provides and those required by the job market today. It is a challenge for current LIS curricula to meet the expectations of stakeholders. Even though some consultation is usually taken by LIS schools when they re-curricula, it is often difficult for employers to clearly visualize how their needs can be translated into the curriculum and vice versa. Producing job-specific graduates is a "tall order" considering the diversity of employers. LIS schools, in trying to provide for everybody, often end up providing for none. (d) Expertise. Among the constraints cited by respondents in the study were the issues of (i) re-skilling lecturing staff so as to improve their ICT competency, (ii) lack of systems manager/support staff and/or ICT experts, and (iii) low levels of students' epistemological access observes the lack of ICT knowledge and skills among staff. It describes the problem of brain drain i.e. that staff sent overseas for training either do not return to their

posts or are taken up by other organizations that are able to offer them higher remuneration. This suggests that in so far as re-skilling academic staff is concerned, opportunities are available but there is still no guarantee that the problem will be solved because of the prevalence of skills shortage at macro/national levels.

There is still a serious need for technical support staff with high level expertise in the maintenance aspects of ICTs. Because of poor maintenance and insufficient skills to diagnose system problems and swap parts, there are many out-of-commission machines which could easily be re-activated and used. The problem of technical expertise is two faceted. In the first place, there are not enough people qualifying or attaining ICT specialist skills at the speed at which the technologies are adopted. Secondly, the problem of brain-drain whereby the few experts opt for better paying jobs overseas. It observes that many students join the university without any computer skills and hence much time is taken trying to make them computer literate.

ICT SKILLS FOR LIBRARY

The first and foremost ICT component, which can be adopted in the libraries, is the computer for library automation and to have an in-house database of library holdings in electronic form. As many primary journals and being published in CD form, it becomes necessary to equip the libraries to optimize the use of information. E-mail, online retrieval networking, multimedia and Internet is the other important technologies, which can be used for faster access to information. ICT enables one:

(a) To capture, store, manipulate, and distribute information;
(b) To introduce and provide new services, revitalize the existing services by providing faster Access to the resources, by overcoming the space and time barriers;
(c) To provide need-based, (tailor made), browsing and retrospective search services to the users;
(d) To have large number of databases in CDs;
(e) To utilize the staff for providing better information services;
(f) To develop/upgrade the abilities of professionals;
(g) To encourage networking and resource sharing at local level;
(h) To have access to a number of national and international journals which are being published only in machine readable form;
(i) To digitize the documents for preservation and for space saving;
(j) To support library functions such as circulation, serials control, acquisition control, stock maintenance and other routine office works and developing in-house database;
(k) To retrieve and disseminate the information in user-defined format;

(1) The market demand for LIS graduates who have strong ICT skills and broad perspective on information management has expanded. It Expanded job in market, in the public and private sector have recognized the importance of effective management of their knowledge and information resources. However, many of the organizations in these sectors do not necessarily want the traditional LIS perspective. Rather, they need a versatile professional who is able to actively participate in detecting cues for relevant information, gaining/providing access to

relevant information sources, searching and synthesizing data, repackaging information, and adding any other value that enhances the effectiveness of the organization. All these need extensive ICT knowledge and skills that LIS education can effectively integrated in their curricula. African LIS schools should continually review their curricula and innovatively infuse a stronger ICT component. Apart from the established procedures of curriculum review, heads of LIS schools need to network and keep in contact with colleagues in other LIS schools through correspondence, email or conference attendance so as to pick up new ideas

(2) ICT encouraging to international companies, such as Bull, Compaq, IBM, NCR, Oracle and Microsoft operate offices in Africa with reliable local representation in most countries. The presence of these companies and/or their representatives indicates their appreciation of the market for their products, and it would be in their best interest to maximize their exploitation of the market rather than concentrate only on the corporate Africa. In any case, PC equipment is often clone equipment imported from Asia, but Compaq, Dell, IBM and ICL also have significant shares of the market and Dell South Africa is now selling via the Web. There is also the growing availability of high-speed wireless Internet access, which is often seen as Africa's information revolution. "Africa needs this system because it makes the continent more accessible to international business people and business, But more than that, the wireless technology lends itself to the rapid, low-cost roll-out of a new wave of connectivity into rural areas not currently served by telecoms. Individual institutions and departments must try to find ways of obtaining the necessary funds, be it through income generation activities or liaisons with the private sector. Additionally, some cost-cutting measures can also be employed, The use of open source software or cheaper versions of software e.g. New Deal, Office2000, etc. which can also operate on older hardware; procurement of refurbished computers distributed by such organizations as New Deal, Freedom, Computer Aid International, and World Computer Exchange; redesigning of hardware so as to lower the cost of Internet access, for instance using hardware that does not have hard drive or disc drive but has Internet software.

CONCLUSION

It is real to say that ICT being used to harm humans and one should be aware of it as well as one should be aware of the beneficial side of this technology and supporting freedom for democracy worldwide. ICT ethics has to pay vigilant attention to the possibilities of harmful use of ICT. This is needed to maintain a healthy balance in this technology's assessment – if for no other reason. Most of the time ICT is too closely related to the market forces, and its developers are often too interested in the economic success of their inventions to be willing or/and able to examine and to present to the public the dark side of this technology. I do not believe that in the knowledge economy one can expect the majority of researchers and inventors working in the area of ICT to follow in the footsteps of Norbert Wiener with regard to ethical concerns. It would be a utopian expectation. Instead, global ICT ethics, resulting from collaborative work of scholars active globally, should take on themselves the task of examining the global impact of ICT, especially in terms of the possible harm this technology could cause. ICT ethics should then supply the arguments supporting decisions made in order to prevent the use of ICT in harmful ways; especially regarding people who are on the peripheries of power centers, and who are too powerless and vulnerable to effectively protect themselves from such harm. Application of information communication technologies in the college libraries are erupting and moving faster than ones imagination resulting in information explosion

crossing geographical boundaries. It helps to remove barriers of distance and time and also gives speedy retrieval of information.

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