

Cybercrime in Context to Library Modernization in India: A Threat to National Development

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Abstract

Modernization is a continuous process of change for the better. The Cyber Age has brought about sea change in the arena of library and information science. The application of information and communication technology helps libraries to play their role as national development centre by serving their user community in better way. Indian libraries are very much dependent on web resources in order to compensate their information requirements. On the other hand, unfortunately it creates opportunity to commit crimes in this platform which is a threat to national development. In this context, the purpose of this paper is to review the current scenario of supportive issues i.e. increase of cybercrime in India and the probable attempts to prevent such crimes in library environment.

Keywords: Cybercrime, Library modernization, ICT, Information security, IT Act, National development, India.

1. Introduction: Modernization is a continuous process of change for the better, which is taking place in every field of library activity due to extensive use of information and communication technology (ICT) applications. Libraries in the pre-industrial period mostly had manuscripts and printed materials and their main function was to keep materials as store house of information. The information available to the users was on demand basis. But later in the industrial age, due to different factors like information explosion, varied demands of users; changing media of publications and increase in research & development activities, the traditional practices have changed to provide better services. After the industrial age much importance was assigned to education and it is known as educational industry. The trend in educational system is changing fast and the formal education system is taking shelter of ICT application to support online and

distance learning, e-learning programs etc. Academic users are interested in getting the e-publications and internet based resources. The libraries are adapting different technologies and techniques to face the changes. Books and journals are already available in electronic form along with other resources on the internet. Due to this change, libraries are also shifting their collections, services, facilities and practices based on e-resources. Users are now happy to get the information in digital form and rely on internet based information for their day to day tasks and spend considerable time in searching information. As a result of library modernization we show that major activities of libraries are occurred with the help of web. Libraries are now on the cloud. Cybercrime is very much related with online environment. So it is a big threat for a modern library to step forward.

Objectives: This article tries to explain –

- i. How library modernization concept is totally binding with ICT in modern age,
- ii. Meaning of national development and how library plays its role in this context,
- iii. How cybercrime affect library modernization, and
- iv. What are the preventive measures should be taken by libraries or by cyber law.

Literature review: There have been a number of studies focused on cybercrime in libraries and information security. V.D. Kumar discussed about cyber crime prevention and role of libraries. Anday and his associates told about information security issues in a digital library environment. Ikenwe described on information security in the digital age. Kadyan discussed on cyber security on the horizon of virtual library.

The present study not only focusses on cybercrime in libraries and information security but also focusses on present scenario of cyber crime in India which may be spread its hands towards libraries online environment that indirectly affect on national development as libraries play a vital role in national development.

Libraries in cyber age: Human civilization has witnessed the advent of many ages throughout the history of its evolution - the Stone Age, the Iron Age, Information Age and so on. Now we have entered in Cyber Age which has also made great impact on human society.

The Cyber Age has brought about sea change in the arena of library and information science. One of its components, Internet, provides immense help in acquisition, classification, cataloguing, information retrieval, bibliography compilation, information service, inter-library cooperation - practically in all areas of library and information activities. As a result the traditional libraries are shifted towards automated libraries and from automated libraries the trends are shifting towards digital libraries, virtual libraries and so on where web catalogues, databases of different kinds and resources, optical technology, digital media, consortium, networking, online searching, content management etc. are treated as priority level to serve users in better ways.

What is meant by national development: Development is very essential for sustainability and growth of a nation. A country is marked as a developed country when it is able to provide qualitative lives for its citizens. A large majority of the world's population are in the developing world. Less developed countries like India face different problems like urban population, rural stagnation, unemployment, growing inequalities. National development is essential for sustainability and growth of a country in order to successfully enhance the meaningful standard of living among the population.

Role of libraries in national development: Education leads towards socio-economic changes, improvement in quality of life and human resource development. A library is considered as an essential part of modern society and plays a very important role in the society. It may serve as cultural centre of the community, bringing together people having similar interests through different types of services. It can help in safeguarding democracy, creating political awakening, bringing social awareness and nurturing creative leisure activities. A library can play an important role in helping different sectors of the society. It may be helpful to improve production for farmers in villages. It may boost up a businessman to improve and expand business prospects. A library can create in children a love for reading, which can lead to formation of reading habits at an early age. It is helpful for students of all ages. It can provide job information, helping people looking for better prospects for those who are unemployed. In case a member of the society intends to pursue self-education, then library might be the only institution easily

accessible to him. Now-a-days internet is a powerful media, which can sustain the interest of the viewer to a greater extent than books. Information technology and networking now make it possible to manipulate and move information with ease; to package information in such a way that can enthuse and enrich. Public libraries play vital role as a community information bank and many more. All the R & D activities that are very much linked with nation development cannot be succeed without the help of the service of academic and special libraries. With the help of ICT the traditional task of directing people elsewhere for information could be replaced by direct access to another agency's data files - a World Wide Web connection. Such an arrangement would furthermore allow easy access to the information 24 hours a day, 365 days a year from any location with not only a PC but also by the mobile internet. It is already happening.

Cybercrime and Internet: Cybercrime is roughly characterized as committing a misdeed through the use of a computer or the internet. The Internet is a large computer mesh, or a string of connections of computers that are attached together. This connectivity permits persons to attach to countless other computers to accumulate and convey data, notes, and data. Unfortunately, this connectivity furthermore permits lawless individuals to broadcast with other lawless individuals and with their victims. Cyber crime is a crime which is harder to detect and hardest to stop once occurred causing a long term negative impact on victims. It include hacking, email bombing, unauthorized access to email accounts, data altering, financial crimes, service attack (service blocked)/ trafficking, viruses / worm attacks, trojan attacks / unauthorized programme, fake emails, internet time theft, web jacking, blackmailing, violation of privacy, indecent mailing/ dissemination of obscene material, pornography, improper downloading of copyrighted material etc. These type of crimes are increasing day by day with the increasing popularity of online banking, online shopping where sensitive personal and financial data are required.

Evidence of cybercrime in India: India is a fastest growing Internet using country in the world especially in Asia. India is trying to implement the Digital India project to the best of its capabilities. The success of Digital India project would depend upon maximum connectivity with minimum cyber security risks. Companies like BSNL, Airtel, Vodafone, Aircel, Reliance, Idea etc. are providing internet service at the competitive rates. 3G, 4G and 5G revolution in mobile

phone industry brought internet access now on mobile phones at higher speed. The support from the Indian government to the application of broadband facility in PC, Laptop etc. also results in the increased use of Internet. But there is a problem as India has a poor track record of cyber security. The following table shows clearly how cyber crime increased in the last few years.

Year	IT Act (Information Technology Act)		IPC (Indian Penal Code)	
	Cases Registered	Persons Arrested	Cases Registered	Persons Arrested
2011	1791	1184	422	446
2012	2876	1522	601	549
2013	4356	2098	1337	1203
2014	7201	4246	2272	1224
2015	8045	5102	3422	2867
Total	24269	14152	8054	6289

From the above statistics it can be shown that the number of cases registered under IT Act and IPC is growing continuously. The cases registered under the IT act grew by more than 350% from 2011 to 2015. The cases registered under the IPC increased by more than 7 times during the period between 2011 and 2015. Similar trend is observed in the number of persons arrested.

How cybercrime can affect on library and national development: Library subscribes e-resources in a large number. Besides e-resources, library also creates user databases, holds and maintains catalogue database. These data should be secured from the unauthorized users of the library. Students, teaching community, researchers, managers, policy makers, intelligence department or any educated person of a nation are highly dependent on the e-resources which are subscribed by the institutional libraries. They are involved in accessing large number of e-resources. Among these e-resources, some are very sensitive in nature like defence, R & D related e-resources. Libraries are the sensitive place where transaction of both less sensitive to highly sensitive e-resources can be occurred. Libraries are the place where user may face cyber attacks or might commit internet crimes. It is the responsibilities of libraries to provide user education in relation with secure access to online information. Following are some issues where

national development can be slow down or stopped to some extent by cybercrime in library environment.

- **Violation of intellectual property right:** Intellectual property (IP) law has four major branches, applicable to different types of subject matter. These are copyright (original artistic and literary works of authorship), patent (inventions of processes, machines, manufactures, and compositions of matter that are useful, new, and non obvious), trademark (commercial symbols), and trade secret (confidential, commercially valuable business information). The act is made to promote the progress of science and useful arts, by securing for limited time to authors and inventors the exclusive right to their respective writings and discoveries. The act provides legal protection for intellectual property against unauthorized use, theft, and other violations of the rights granted by those statutes to the IP owner. The copyright act provides copyright owners with the exclusive right to control reproduction, distribution, public performance, and display of their copyrighted works. IPR violations is criminal acts posing a serious threat to financial stability, employment, and creative innovation. Technological advances such as high-speed internet connections and media encoding technologies have enabled copyright pirates to steal more efficiently.
- **Misuse of data by unauthorized persons:** In case of electronic environment library mainly holds three types of data into its database. These are library's own or subscribed digital resource, users' personal details with their interests and metadata of digital resources. Unauthorized persons may hack library network to steal sensitive information for misuse it. For example one may be steal other's research paper which may be misused by him and it may cause threat for national development and national security also.
- **National Security information:** For any nation, national security is a big issue to develop a nation freely. Our country like India is not exception from it. In earlier e-mail became very popular for military applications. With the development of the World Wide Web this technology was inducted in the public domain. This is the starting point where the virtual medium started to be utilized for criminal and terrorist activities. Often

terrorist organizations make attempt to disrupt the communications hubs of the states, so that their activities could be carried with greater effect causing larger damage. In the context of national security especially in military applications, information plays a major role, on the basis of which military activities become decisive. This game of intelligence and counter-intelligence is carried out in the virtual medium as most of the military activities and the information management of most of the advanced nations is based on the use of computers and the internet. In this context it can be said that libraries of the institutes like DRDO, ISRO, BARC etc are very sensitive place where a large amount of information related to defence and its related R & D activities are stored and used.

What should be the preventive measures for libraries: In India most of cyber-crime cases are committed by educated persons (some cyber-crime requires skills). Therefore to prevent it deep knowledge is required about cyber-crime. Also, in India it is seen that most of the cases where crimes are committed due to lack of knowledge or by mistake.

The following security measures should be followed in the libraries to protect huge amount of information.

- There is need to keep hardware in secure rooms under physical lock and key and an inventory system should be implemented for easy tracking.
- To ensure security of physical networks, it is important not to allow users to install unauthorized network equipment.
- Using updated antivirus in order to protect the library data from virus, malwares.
- Use of firewalls
- Databases should have the capability to offer access to resources as defined by roles and profiles. and should be based on their respective functions.
- Public registries of format specifications and the creation of software which converts files in obsolete formats to usable files.
- Taking up the regular data backups.
- Privacy & confidentiality should be maintained with regard to library users and their use.
- Not to create contact with strangers over the Internet
- Not to share passwords and credit card details at the time of online transactions, if any
- Promoting user authentication methods (user name and password, biometrics) while providing access to library data.

The methods followed to protect valuable data and to prevent cyber attacks should be well defined and implemented in the library setup. However cybercrime may be happened in libraries

in spite of taken preventive measures. Then there may be the only one way i.e. taking help of Cyber law.

Cyber Law and Cyber crime cells: Highly populated country like India depends on web resources in order to compensate their information requirements. On the other hand, it creates opportunity to commit crimes in this platform. In this regard Indian government passed the Information Technology Act 2000 in May 2000 and notified it for effectiveness on October 17, 2000. The act has also been amended in 2008 and presently known as IT (amendment) act, 2008 and was notified for enactment on October 27, 2009. The sections 65-74 of the act deal with the punishment for the cyber crimes.

Cyber Crime Cell in India has nine cyber crime branches actively working in Mumbai, Chennai, Bangalore, Hyderabad, Delhi, Thane, Pune, Gujarat and Gurgaon which involved in investigating the cyber attacks (as of 2013).

Conclusion: It can be said that computers and the Internet are now a familiar part of any modern library and our life also. Without the support of any of these tools, we would not be able to handle the overwhelming amount of information that seems to characterize our society. But the problem of security limits the integrity of information and computer systems. More people need to know the proper use of computers and the protections that are daily offered for the safe handling of information. Library play an important role to educate its users in this regard by organizing orientation programs, meetings, lectures etc. frequently which may be very fruitful to manage information seamlessly both for library and its users.

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