NETWORKED INFORMATION SOCIETY: A WINDOW TO LIBRARY PROFESSION IN 21ST CENTURY

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Abstract

The paper is an attempt to understand the basics of the information society and their application to enhance the library profession. For convenience, the paper has been divided into two parts; the part one discusses the basic features of the networked society. This society has influenced our life in many ways. Starting from personal life to business establishment and the government organizations, in the recent years, Information communication technology (ICTs) is of great help. The part two, however, discusses their application to upgrade the library profession, which could possibly change our orientation towards the profession and also to a large extent help the users. The application of ICTs in the libraries, in my opinion, will not only help in shedding the traditional mind-set, but also help to reduce the gap between nations. Use of Internet, online sources, and several such trends would help to overcome the digital divide and bring the knowledge to our doors. The part two discusses all these concepts and their possible application in our libraries and knowledge centres.

Keywords: Information; Networked Society; Library Profession

1.   Introduction

The idea of a networked society or environment encompasses a range of electronic networked activities and services. The dramatic development of information and communication technologies (ICTs) has revolutionized the way people work, interact and conduct their lives. It has not only achieved these things in stages, rather has contributed significantly to transform the global economy, largely because of the positive trends emerging in the industrial revolution. However, the growth and transformation from the agrarian society to the networked information society is not parallel in every society, but has seen and witnessed some even and uneven trends in the process.

This Paper will focus upon the needs and the urgency of these changes, their stages and also the human use of the technology, particularly in a developing and underdeveloped setup. Finally, an attempt would be made to see its application particularly in the field of library and the information science.

PART-I

The networked environment includes information and media services, products, hardware and software, and resources that are received by users via electronic networks. In this environment, many information services are provided by local, regional, national and international networks. Locally developed information services (i.e. from a library, computing services, private sector firms, individuals and others) may comprise the majority of the networked environment. There is no easy or straightforward method to operationalize a definition for a network, because of its changing nature. However, a combination of the following component may suffice our purpose. In this sense, a combination of the following may constitute a network:

- **Technical Infrastructure:** the hardware, software, equipment, communication lines, and technological aspect of the network;
- **Information Content:** the information resources available at/on the network;
- **Information Services:** the activities in which users can engage and the services that users may use to complete various tasks;
- **Support:** the assistance and support services provided to help users better use the network
- **Management:** the resources (human), governance, planning and fiscal aspects of the network

The above five explained basic components suggest the multi-dimensional nature of electronic network, particularly in a public library type of setup and the extent to which the networks can be described, define and then evaluated.

Generally information society refers to a society in which the quality of life, prospect for social change and economic development depend increasingly on information and its exploitation. In a broken sense the term can be defined as a society that has an economy dependent on the creation, storage and accessibility of information on a national and global scale. The networking aspect is vital, as it is this very aspect which believes in the logic of exchange and transfer of above information and its very nature is global. Japanese used this concept for the first time, but Americans soon followed the same.

The term information society could be utilized in two contexts. In the first instance, it works as an instrument, when affordable and usable ICTs can transform the way societies work, entertain, study, govern and influence the lives of individual, organizations, and the work at the national as well as international levels. However, as an industry it constitutes a major growing economic sector covering hardware, software, telecom and consultancy services. It, however, may also be studied as to how a society has received information. Again, here the first kind i.e. technology driven phenomenon, refers to method dominated by the synergistic effect between revolutionary computational and communicational technology-driven information society is one whose structure and system is deduced directly from a pre-established ideology.

1. How to Get Benefited from the Networked Society

When we notice that a society is moving from one stage to another and are finally lending in the information age, a thought comes in our mind as to how and in which way the fruits of the present setup could be fully utilized for the greater good of a society. Some of the important issues/questions that comes in our mind as to:

- Who will benefit from the networked society?
- Will it decrease the gap between nations and within nations?
- What kind of effect, it may bring upon the individual or individual creativity?
- How and in which way it may establish a balance between men and nature?
- What may be the overall impact of the above phenomenon?

The above questions may seem superficial at a level, but it is these very issues which needs a focus in the light of the facilities and the benefits we are getting from the networked information society. It needs to pool all its resources – human, technological, financial – to create technologies and companies that can out-compete the best the rest of the world has to offer. The power of these technologies must be harnessed to improve the lives of the members of society. This requires work on many fronts, from telecommunications deregulation to intellectual property, from technological development to venture capital. To compete in the global marketplace, the industry will need the financial strength stemming from a balanced mix of competition and co-operation, and should take into account of the following important factors:

- Knowledge driven economy
- Diffusion pathway for ICTs
- Policy and regulation Priorities
- Role of public-private partnerships for mobilizing information society.
- Fostering globally accessible and affordable ICTs
- Network Security: protecting our critical infrastructure.
- Information wants to be free
- ICTs for education and building human capital.

Taking the incentives from the above factors, information and communication technologies are playing (in case of the developing nations) and are going to play (in the case of the developing world) an important role in our society. It may influence substantially our quality of life, industrial competitiveness and jobs. For instance, doctors are finding that the computerization of medical information and health records helps them provide a better service for their patients. In our daily life, our considerations are shaped and defined by regular environmental changes, weather forecasting, and disaster mitigation and in these areas; new information systems are fruitful and shedding new lights everyday. However, to nurture and nourish well, we should take into account of the following factors, so that we could have more direct benefits from the same:

- Promoting more proactive public service reforms in public administration.
- Putting e-commerce at the service of the citizen
- Creating a favourable legal framework, for example digital signature, patent rights, copy rights, intellectual property rights etc.
- Developing business consensus on those priority issues where swift global action is needed for the things like authentication and security, consumer confidence information infrastructure, market access and jurisdiction, protection of data, taxes, and tariffs etc.

Moreover, the system which we discussed at length should not only balance the right element in the right perspective, but at the same time should also be **cheaper, faster and secure**. It should appropriately invest in people and their skills and should emphasize the need to use the internet and expedite the same, only than the system could be used by rich and poor nations alike.

2.   Bottlenecks for Networked Information Society

The networked information society demands a standard before its operationalization in an environment. The requisite infrastructure for such a society could be easily made available in the developed nations, whereas the same is not so easy in the developing and under developed world. South Asian society, in particular, is an example of the second kind. Some of the important factors, which may prove bottlenecks for our society as follows:

- Inappropriate hardware
- Expensive hardware
- Lack of manpower
- Lack of market opportunity
- Inappropriate legal framework
- Low investment rate.
- Higher competition in the global market

As discussed earlier, we know that it is the competition, rather co-operation which is required at different levels to diffuse the technology at this stage. In the age of globalization and free market economy, a developed nation may try to utilize their expertise to win over the global market and in this case they may opt for the developing and the underdeveloped nations and their potential market. However, the government, people and the local needs are also important in this regard and the local government and the people should be ready to sacrifice some to win a larger share of the networked information society. Some of the important factors, which may help the growth and speeding up of the networked information and related activities in these countries, require the following:

- Strong political commitment
- Access to capital resources
- Literacy and education
- Social and educational access
- Agricultural technologies
- Appropriate administrative, regulatory, and economic models for such projects to work

3.   Major Components of Information Society

The channels are important in networking or diffusing the information in the market. Some of the important components which may help in the process, as follows:

- E-Governance
- E-Business
- E-Commerce
- Telemedicine
- Distance Learning

These channels not only use this information, rather helps in making it to reach wider audience.

4.   Information and Community Development

Information is a key factor in the implementation of comprehensive e-governance strategy. It is important for national, provincial/state, and even for the services at the local levels. It is base of any community level services. Thus, a range of activities related to information (networked) is required for any community, may be traced in the following:

- Design Services
- Electronic Governance
- Community Participation in sharing the community infrastructure
- Community Involvement
- Community Planning

5.   Community Services to Achieve the Information related Goals

The above needs of a community could be achieved with the help of the following services at command:

- Internet Providers
- E-Commerce facilities
- Learning/Education and Training
- E-Governance Service delivery
- On-line Service Involvement
- On-Line users Support
- Security/Privacy/Confidentiality

6.   Technology Choice for the communities to the above Goals

There are a range of services, which helps a community to achieve the service needs of a particular community. Some of the important in these categories as follows:

- Hardware
- Software
- World Wide Web
- Community Networks
- Usenet/News/E-lists
- Broadband

Basing on the above requirements, the societies across the globe has achieved substantial progress in this area. The transition from the agrarian society to the information/networked information society has not been smooth and unilateral for every society in the world. Some societies are at the receiving end, and others are the beneficiaries in this regard. This is quite logical as the pace and the reach of every society can't be the same. In this regard, the need of the hour is that the

governments of the developing and under-developed countries need to take effective, bold and hard decisions in this regard. Turning our attention to a specific area i.e. library and the effect of the networked information society, we will examine, how the services and the user needs has been taken care off in the new environment.

PART-II

1.   Network Literacy: New Task for Librarians on User Education

We are now in an information age characterized by internet which is used widely and rapidly all over the world. Information literacy, however, may be defined as "the ability to locate, evaluate and effectively user needed information with a set of skills and attitudes for lifelong learning", is a product of information society. Network technology (LAN, WAN, Internet, Intranet and telecommunications) with multimedia, digital storage and digital delivery, defined as "the ability to identify, access, and use electronic information for the information network", is information literacy based on network technology in a network environment. It will be an essential skill for the people to live a successful and productive life in a networked information society.

From schools to colleges or universities, from public libraries to academic or special libraries, from government related agencies to education associations or library associations, teachers, librarians and other educators have been emphasizing, experimenting and working to educate various types of people to become as "information-literate persons to meet the needs of the changing society".

2.   Some Possible Questions

While libraries function as information resource centres and are moving towards digital/virtual libraries, it becomes very crucial to educate users in network literacy. There are several aspects of this new task that need to be explained for example:

■   What is the network literacy, particularly for the library users?

■   What is the role of the librarians in teaching network literacy for users?

■   What are the differences between the traditional bibliographic instruction and network literacy in a library/

■   What content should be covered in the instruction of network literacy? What teaching methods including facilities should be used by librarians to teach network literacy?

■   What kinds of curriculum collaboration are needed for teachers and librarians?

■   What kind of cooperation is required between computer/network specialists and librarians?

3.   Network Literacy and Library Users

In general, library network environment is formed by three types of networked information systems. The first type is Local Area Network (LAN) system, which focus on those microcomputer based systems such as Novell Netware, Microsoft Window NT, Apple local talk, Banyan VINES, and others.

The file servers in LAN are loaded with microcomputer based applications including various CD-ROM type databases. All microcomputers based workstations are linked to one or more file servers to share various applications and information. LAN is a distributed network system. In client/server architecture, LAN is the basic level of network to link End-Users to networked information loaded in file servers, LAN can provide End-Users access to remote information resources (Internet etc) through communication software and network connections.

Library Online Catalogue Systems or online integrated library management systems are considered as the second type of network systems in libraries, and it is also categorized as INTRANET. This type of network system handles traditional library functions such as circulation, interlibrary loan, cataloguing, acquisitions, serial control and online public access catalogue (OPAC). There are centralized network systems. They provide various library bibliographic information from local, regional and remote databases through a local host (usually a mini computer or mainframe based), depending on the servers network capabilities and the systems capacities. The End-Users interface with these can be hand wired terminals or microcomputers through LAN.

The third one is Wide Area Network (WAN) based systems. These systems communicate with Internet through Gopher, World Wide Web (WWW), WALS, and other Internet Index Tools. Various servers with different functions, such as Gopher, Web, E-mail, File Transfer Protocol (FTP) and Point-to-Point Protocols 1 (PPP1), connect End-User workstations to internet for universal information resources provided by information highway such as the evolving National Information Infrastructure (NII) and the Internet/National Research and Educational Network (NREN). WAN based networked information system has been the most important system for network literacy. Based on Client/Server Architecture of network systems, all the three types of network systems can be interactively connected so as to provide various networked information to the End-Users.

4. Networked Information in Libraries

Different from the traditional print collections and AV Materials, all networked information is available in electronic or digital form. Also, networked information must be delivered and accessible using computerized and networked facilities such as microcomputers, dumb terminals or other electronic or telecommunications device in a networked environment. Networked information can be categorized by their media types, formats, host systems, the way to approach information, uses in subjects, information providers/producers, or their target end-user groups. It is very helpful, particularly in designing educational programmes for network literacy.

The Magnetic Media (Computer data types, Audio/video Tapes, Computer Disks and Drums etc) and lesser optical media (CD-ROMS) are the most important networked information media. The formats of networked information on multimedia involve electronic bibliographic citations, text files (including full text) of electronic publications, data files, graphics, full-images and audio/video digital forms. All types of computers including CD-ROM devices (drives, towers, juke boxes) are possible host systems loaded information for network access. Users can access networked information by microcomputers or terminals through hard wired LAN, Or INTERNET WAN, or telecommunication data/voice lines with voice/fax/ modem to dial in /out.

The networked information from LAN or Intranet is local computer based databases and/ or CD-ROM based information. It can be easily protected through security systems. As for information from WAN-Internet, it is world wide information, in different formats with different media, from different owners and loaded in different host systems, and it is hard to be secured. Like the traditional information, networked information covers all subject fields for various uses to meet the need of all types of targeted users. Networked information can be provided in electronic forms by different vendors, database producers, electronic publishers involving government agencies, non-profit producers, professional associations or organizations, and various commercial companies.

5.   Network Literacy for Library Users

Network literacy for library users consists of two aspects; knowledge of networked information and skill to locate, select, evaluate and use the networked information.

5.1   Knowledge of Networked Information:

This knowledge covers the aspects of the information as follows;

■   To recognize the range and uses of global networked information resources and services;

■   To understand the role and use of networked information in problem solving and in performing basic life activities;

■   And to know the system used by which the networked information is created, managed and made available.

5.2   The Skills

The skill is an important factor for the library professional and their users. Some of the important skills required in this may as follows;

■   To define information needed for specific purpose;

■   To locate information needed for networks with efficient information retrieval methods, skills and tools;

■   To select and evaluate information gained for networked information on a given topic;

■   To manipulate and organize networked information with other resources to enhance its values;

■   To use, analyze and present networked information for problem solving and life-long learning.

 However, to acquire network literacy as defined above, users, first of all, should posses the following basic Literacy;

■   Traditional notion of literacy-to read and write;

■   Computer Literacy-to understand and operate computers which are interfaces between networked information and End-Users.

■   Media-Literacy – to understand different media storing networked information and use them;

■   And Traditional Information Literacy – to locate, select, evaluate and use information effectively.

6. Role of Librarians in a Networked Information Environment

As educators of library users on network literacy, librarians must first acquire literacy themselves. That is, the librarians should be conversant with course-wave and networked information sources/ resources, posses both knowledge and skills needed in a networked environment. Besides the knowledge and skills in networked information described here, as library users, network literacy, librarians should further be;

■ Knowledgeable in globally recognizing, organizing and serving networked information resources and services;

■ He/She should be well-versed in different subject fields to watch the information needed with the problem solving;

■ He should be having expertise in creating, designing and instrumental programmes for library users and should cooperate with the teachers and experts designing B.Lib and M.Lib type of courses;

■ Should be familiar with different networks and technology;

■ Comfortable with the computer as well as network technology;

■ Have the knowledge of database management and other modern management tools;

■ Professional education in library and other information related fields;

■ Up to date knowledge of media, computer and network system and their utilization;

■ Balancing act between the old and new forms of knowledge.

7. Conclusion

The shift to global infrastructures and a global information society is creating opportunities for medium developed and developing countries. Advances in ICTs are making it possible for them to create opportunities not possible pre-internet evolution. This change has not only reduced the distance but also made the knowledge within the reach of everyone. Now, it is for the government of the developing and the underdeveloped to look, asses, and participate with all energy to extract the maximum. As regards library and information services and its users, the networked information technology is primary based on user education on network literacy, which is different from the traditional bibliographic instructions because of the high-tech based networked information it requires librarians to undertake a new task, which has been discussed well in the section. This makes the future of library secure in the networked environment.

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