

# Digital Library System : with reference to Consortia

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# *Issues*

**Library is a Service Oriented System  
which has mainly the three following  
components :-**

- (i) Collection,**
- (ii) Users and**
- (iii) Librarians or Information  
professionals, the personnel who help  
the users to make direct contact with  
the collections of documents.**

# Issues

- These three components of the traditional library has gradually changed with the advancement of technology, specially with the revolution in **Information and Communication Technology (ICT)**.
- Accordingly over and above the established known roles of librarians and library professionals, additional responsibilities have been imposed on the activities of the library professionals. *In this context, the roles and responsibilities of the Library Associations have become significant.*

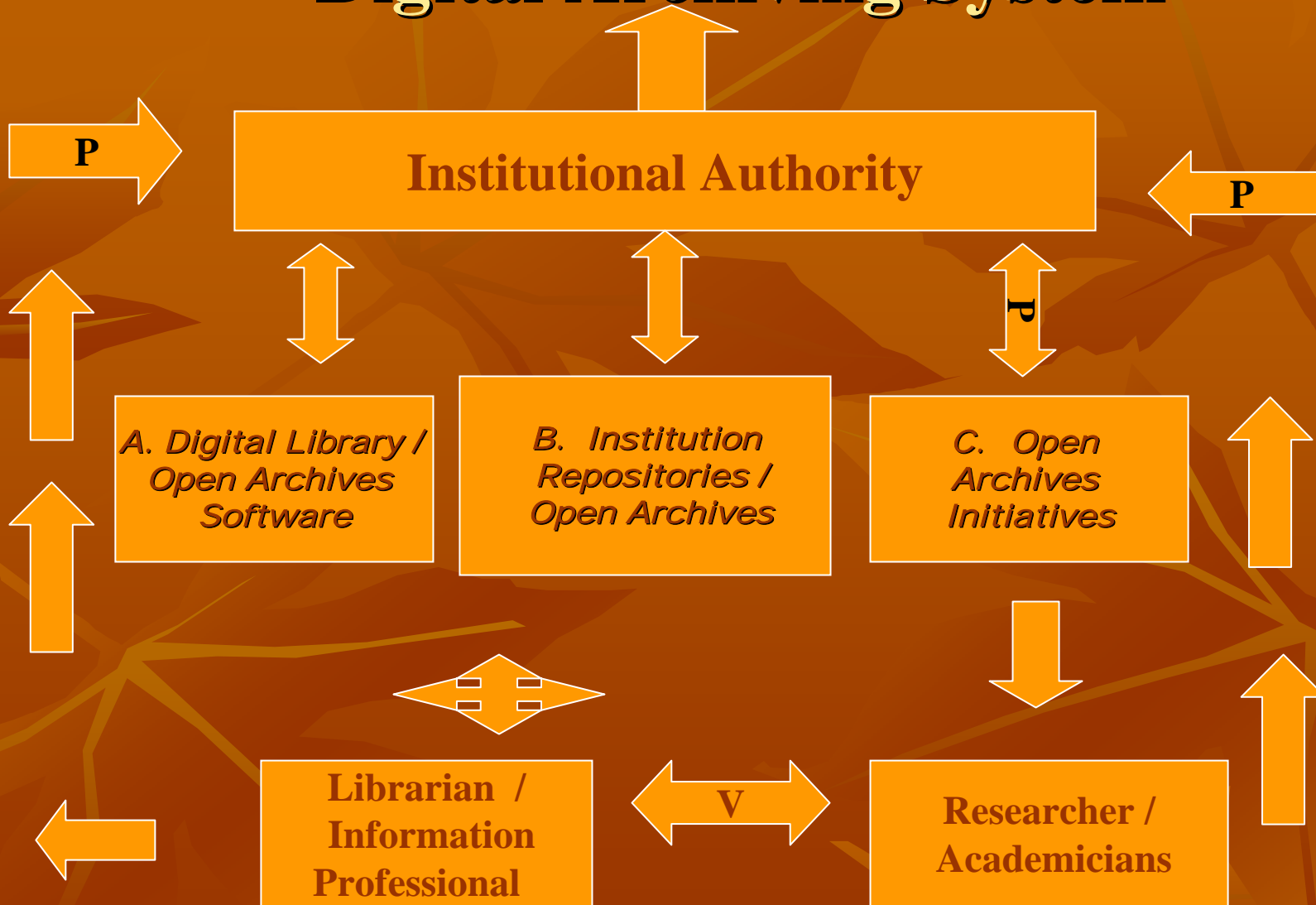
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- The objective of this paper is to throw some light on the paradigm shifts occurring in library and global information environment which would enable us to plan for Digital Library System – with reference to CONSORTIA.

# Issues

- 'User' is the key and dynamic component of any library and information system.
- Success of any information system depends of close and accurate understanding of user.
- 'Know thy user' to provide right information at the right time to the right user.
- To meet the information need of the user.

# Digital Archiving System



# Paradigm shifts in libraries and in global information environment

2008-FINALE-AKC-KPM-SRC-IASLIC-11-11-2008 - Microsoft Word

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The paradigm shift in libraries and in global information environment have been summarised below (scheme-1)

**Scheme 1: Paradigm shifts in libraries and in global information environment**

## 02. Paradigm shifts in libraries

## 03. Paradigm shifts in global information environment

### 02.1 Role of Information Professionals

#### 02.11

- Information facilitator
- Information Consultant
- Information Manager

#### 02.12

- Negotiator
- Facilitator
- Educator
- Information intermediaries

#### 02.13

### 03.1 Digital divide phenomenon

### 03.2 Information society

### 03.3 Knowledge society

### 03.4 e-government

### 03.5 Freedom of information

### 03.6 Public sector forms and record management

### 03.7 E-learning

### 03.8 Open source software

### 03.9 Local content

### 03.10 Voice over IP

### 03.11 RFID Technology

Educator

Information intermediaries

**02.13**

Cybrarian

Webrarian

**02.14**

Knowledge coordinator

Knowledge creator

Knowledge Liason Officer

Information Architect

**02.2** Access, quality, Selectivity

**02.3** Publishing

**03.9** Local content

**03.10** Voice over IP

**03.11** RFID Technology



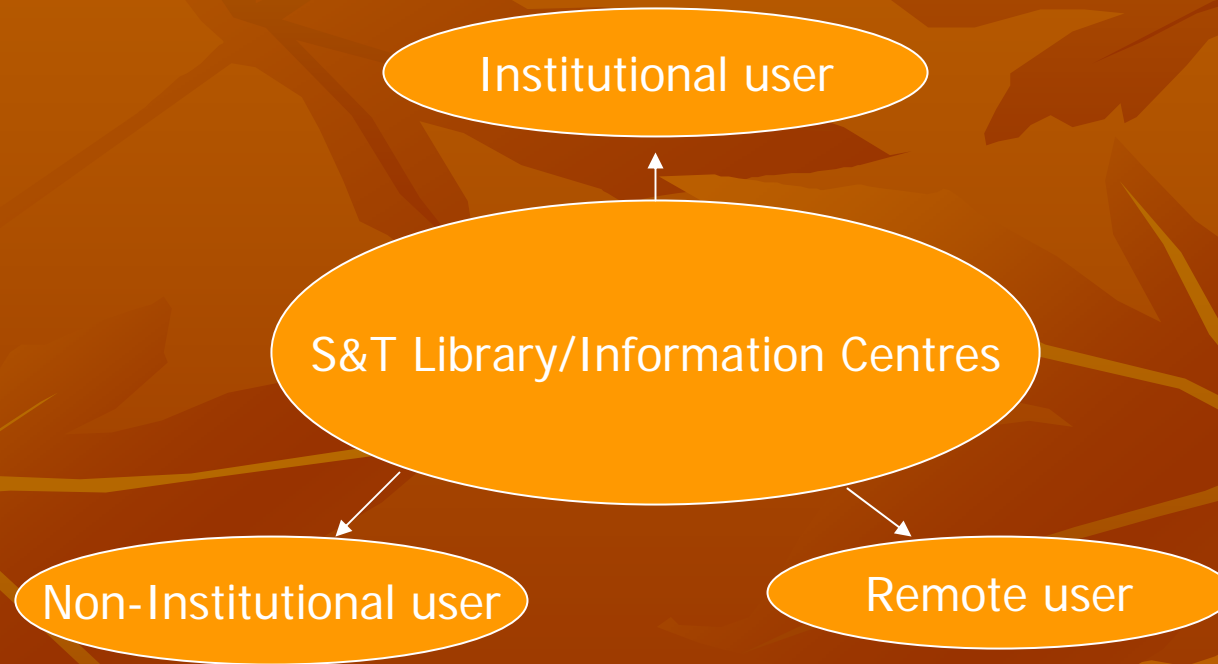
# S & T System in India

The S&T departments functioning under the auspices of Central Government



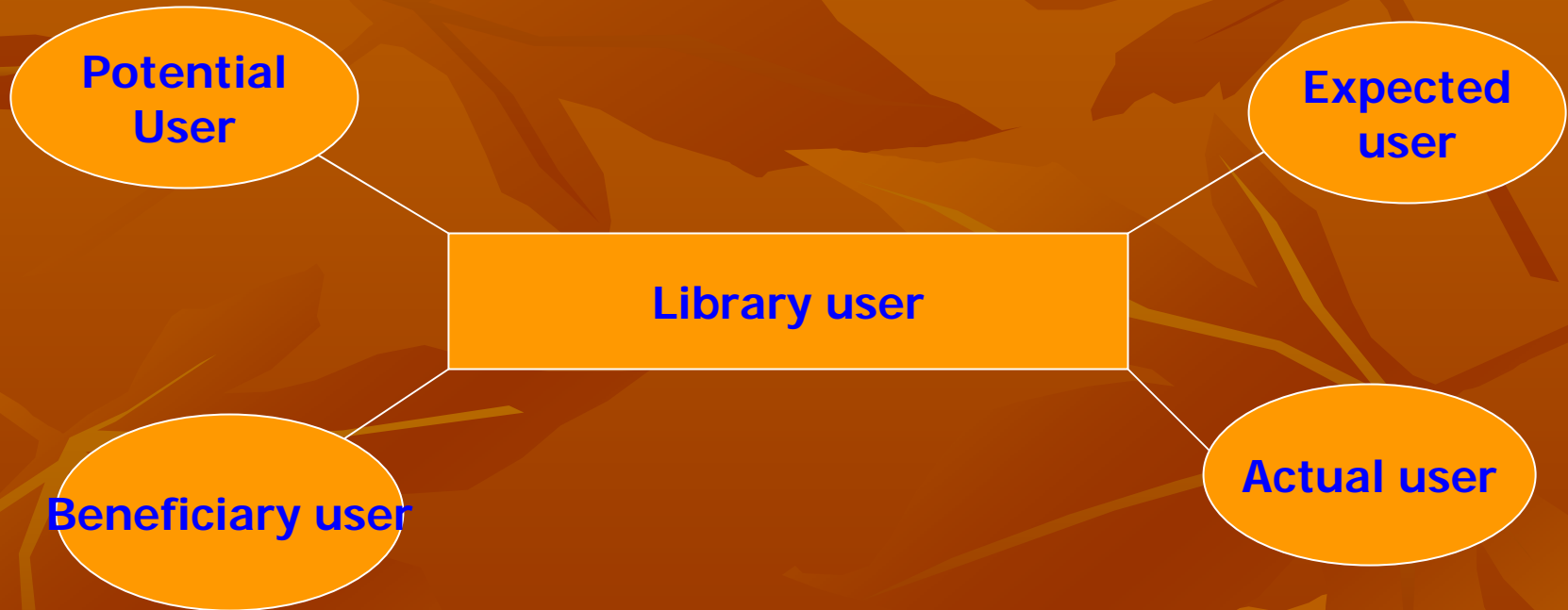
# User community in S&T Library/Information Centres

- This community include members from different categories like, Faculty members, Researchers, Scientists, Scholars, and Technical Staff.



# User Community in the Library

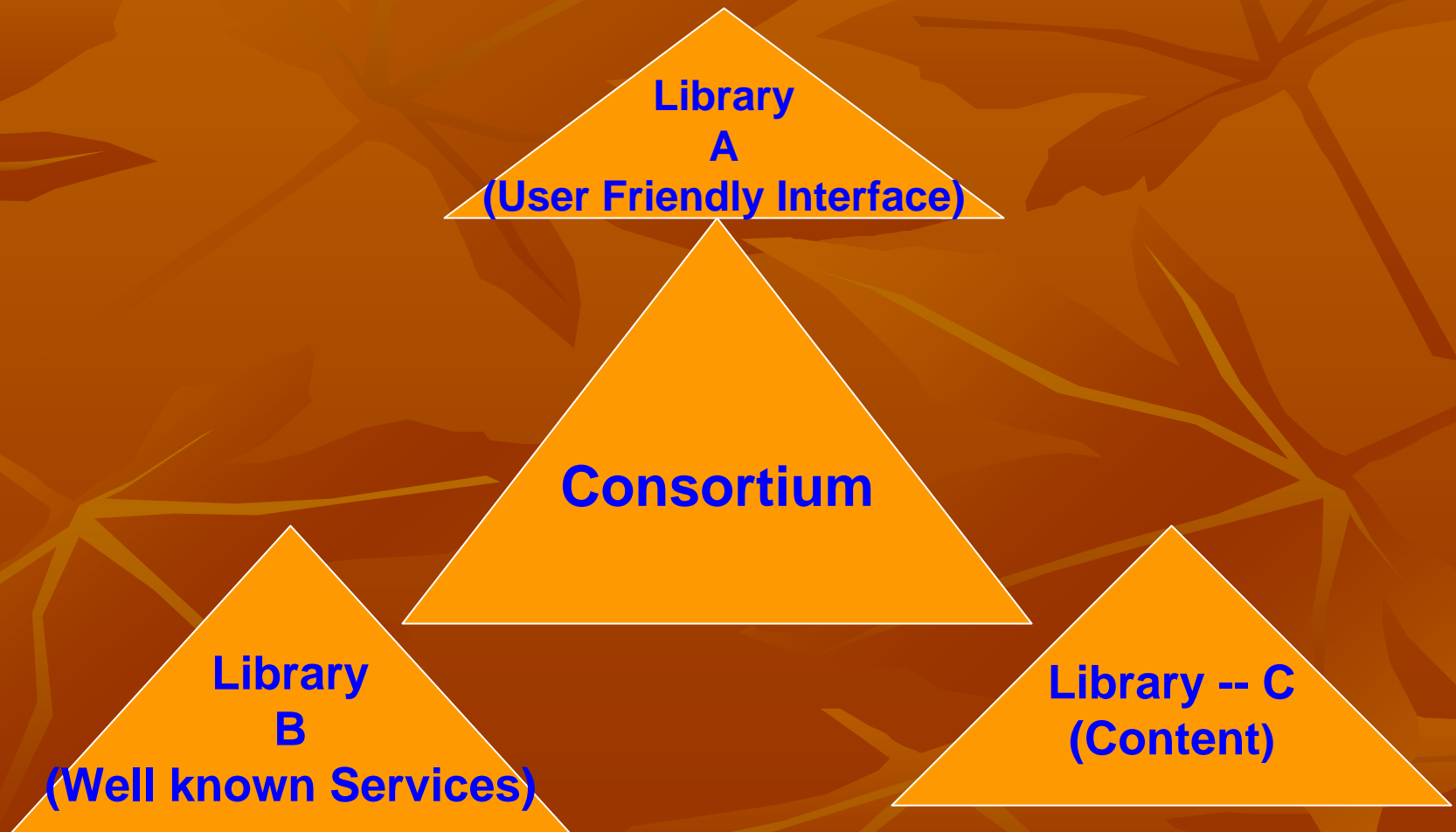
- **Michael Gorman, 1983 proposed the term 'libreree' to describe information seeker who make use of libraries.**



# Key areas of knowledge paradigm

- **access to knowledge**
- **knowledge concepts**
- **knowledge creation**
- **knowledge application and**
- **development of better knowledge services.**
- **Several recommendations have recently been made by the National Knowledge Commission (NKC) to transform India into a vibrant knowledge-based society.**

# What do users need to access electronic information



# Role of Library Associations

- (i) The Library Associations at the local, state, National level should take a leading role in this new situation. Libraries in India now need to make a paradigm shift from their present strategy of collection or acquisition of knowledge to a strategy of access to knowledge.
- (ii) Libraries and library professionals shall have to recognize their social functions and their critical role in creating a knowledge society. The Associations should support this and should extend cooperation in this respect to all library professionals, administrators and others concerned.
- (iii) The Library Associations should *advocate for the areas which require immediate attention in R&D programmes*.

# Areas of R&D Programmes

- (i) Standardization of Indian names,
- (ii) Development of open source software
- (iii) Development of Digital libraries, both in English and Indian languages
- (iv) Technical standards for Indian scripts. Optical Character Recognition (OCR) for Indian scripts.
- (v) User needs and reading habits of different groups
- (vi) Organization of community information and development of appropriate standards.

# Assessing End-User Requirements

- Regular surveys at libraries:
  - Which products are requested? (content)
  - Which provider is preferred? (interface)
- Organisation of trial periods / product evaluation.
- Evaluates end-user requirements
- Suggests new products to central office
- Conducts product and interfaces trials



# Skills to fulfill the changing role of libraries

- **library and information handling skills**
- **ICT knowledge skills**
- **Communication and training skills**
- **Marketing and presentation skills**
- **Understanding of cultural diversity**
- **Knowledge mapping skills**

# Knowing the user

- *How to know : "User Study"*
- *What to study :*
  - "WHO Says WHAT to WHOM through WHAT MEDIUM and with WHAT EFFECT and WHO demands (needs/receives) WHAT from WHOM and WHY"*
- *What to know :*
  - *Characteristics;*
  - *Information requirements;*
  - *Behaviour, attitude, opinions, priorities, preferences and evaluation of users.*

# Importance of Knowing the user

- *To evaluate information systems;*
- *To make the users perceive information related problems;*
- *To motivate users towards stimulation of demand for information;*
- *To examine patterns of library use and identify gaps in use;*
- *To make book selection systematic;*
- *To evaluate the resources;*
- *To introduce/ render documentation and information services; and*
- *To evolve resource sharing with the other libraries.*

# NEED

**Libraries should be so organized and the *staff so trained* that they become *relevant to the user community*.**

- **The library should serve as the *local centre of information* and a *gateway to national and global knowledge*.**
- **It should provide *fair access to knowledge and information* to as many cases as possible.**
- **The library should *pay attention to needs of children, women, senior citizen and the physically challenged*.**
- **It should optimize its potential to *provide access to information and knowledge to all*.**
- **It should *help users to develop information skills* to make optimum use of resources.**
- **It should *improve its collections and services on a continuing basis* in consultation with users.**
- **It should undertake necessary steps to *bridge the gap between the information poor and the information rich*.**

Table 1 shows library innovation and socio-cultural conditions

**Table 1: Library innovation and socio-cultural conditions [Stchr,N(1999), Dromer,K(2005)]**

Criteria	Industrial Society (before 1970s)	Information Society in (1980s, after 1970s)	Knowledge Society (from mid 1990)
1. Aim of library use	Cultural discrimination (taste) → Personal relevance of cultural choice	Universal and free access to information → Information literacy	Universal and free access to information and fiction → Multimodal literacy
2. Definition of Library/ Librarian	Cultural custodian → Cultural guide (library as a <i>cultural centre</i> )	Information disseminator (library as an <i>information centre</i> )	Knowledge facilitator (library as a <i>multimodal knowledge centre</i> )
3. Definition of material/ content	Material entity, Physical artefact	Non-material process → Effective reliable information processing	Material artefacts and non-material processes → Information and fiction
4. Definition of user	Receiver of choice → Cultural consumer	Information producer and evaluator	Knowledge producer, cooperator and cultural citizen

# Benefits of open source software and open standards

- reduced cost, less dependency on imported technology and skills
- affordable software for individual, enterprise and government.
- Universal access through mass software rollout, no costly licensing implications
- Access to government data without barriers of proprietary software and data formats.
- Ability to customize software to local languages and cultures and participation in global network of software development.
- Open source software gives librarians the opportunity to venture into application development in partnership with other professionals around the world.

# Challenges of new technological development for libraries

- **Revolutions in technology & global imperatives have impacts on the library profession in various ways**
- **Several information providers ISPs & media**
- **Internet resource when catalogued, becomes a vital part of library's collection & can be accessed only through OPAC**
- **So users must be provided with adequate infrastructure to access the required information pressure is existed on the library**
- **to provide hardware & software support in the library**
- **to provide search ability to retrieve internet resource e.g. full-text database, e-journal, images etc. and**
- **to create a user friendly OPAC display for internet resources.**

# Interventions to challenges of paradigm shifts

- Libraries should strive to become developers and suppliers of automation systems
- There is need for libraries to explore the consortium arrangement so that libraries share costs of hardware, software, personnel etc.
- Library schools & Univ. Dept. should review their courses to include core software & hardware computers.
- Curriculum of LIS education should be modified all levels
- Library must cooperate with IT Department, but should not be wholly dependent on them



# The environment in which librarians are working now

- greater access to range of information
- increased speed in acquiring information
- greater complexity in locating, analyzing and linking information
- constantly changing technology
- lack of standardization of both hardware and software
- continuous learning for users and library staff and substantial financial investment for technology. (Creth, 1996)

# Role of Library Associations in the changed environment

- The roles of Library Associations are :
- To help the library professionals in *keeping pace with the constantly changing technology.*
- *To organize workshops, for training of library professionals and staff.*
- To advocate modification and modernization in the curriculum of library and information science education at all levels--certificate, undergraduate degree, postgraduate, M.Phil. etc. in all Academic organizations, Library Schools and University Departments.

# Role of Library Associations in the changed environment

- To help the professionals in acquiring, locating, analyzing, and linking information.
- To organize seminars, conferences for continuing education, short term training programmes of library professionals and staff
- To make standardization of both hardware and software in consultation with IT personnel , software & hardware engineers and specialists.
- To organize user's training programmes according to the need of the users.
- To ensure improved services of the libraries

# Traditional Roles and Skills associated with library professions

## Values of library profession

- According to Creth (1996) “the values that are the foundations of the library profession should remain the same into the next century.....*values of service, quality, universal access and cooperation*”.
- *Role of librarian as user-educator and trained intermediary*

# Changes of attitudes of the library and information professionals

- The Library Associations need to *motivate the library and information professionals to change their attitudes, to maintain their values and ethics -- values of service, quality, universal access and cooperation*. All the Library Associations should jointly take a leading role in the framing of a code of ethics for the library and information professionals.
- **Changes in the Goals of Professional Education of the librarians and library professionals**
- In view of the present perspective, the changes in the goals of the professional education of the librarians and other professional library and information science

# **Changes in the Goals of the Professional Education of the Librarians and Other Professional Library and Information Science Personnel**

- **improved library service**
- **improved professional performance**
- **increased credibility and visibility for the library profession.**
- **Expanded support from library administrators for continuing professional development activities.**
- **Expanded awareness in the profession of the importance of continuing professional development.**
- **improved professional activities in terms of quality, coverage, availability and currency.**
- **Expanded tools for sharing information about continuing professional development opportunities and best practices.**
- **Recognition of the shared responsibilities for continuing professional development activities between library professionals and their employers.**

# Role of Library Associations

- (i) All the Library and Information Science Associations have the responsibilities to play a significant role in *fulfilling the goals of the professional education of the librarians and other professional library and information science personnel in the changed scenario.*
- (ii) They should organize seminars and conferences to find out the ways and means for fulfilling the goals of the professional education of the librarians and library and information science professionals in changing scenario.
- (iii) They should *advocate for modernization of the syllabi of Library & Information subject* taught in the library schools and University Departments

# Conclusion

It appears from the above discussion that the Library Associations should take a leading role to ensure *better service to the users*, and *improved professional performance*.

The Library Associations should take a leading role in the framing of a *code of ethics for the library and information professionals*, which is urgently needed in the present situation.



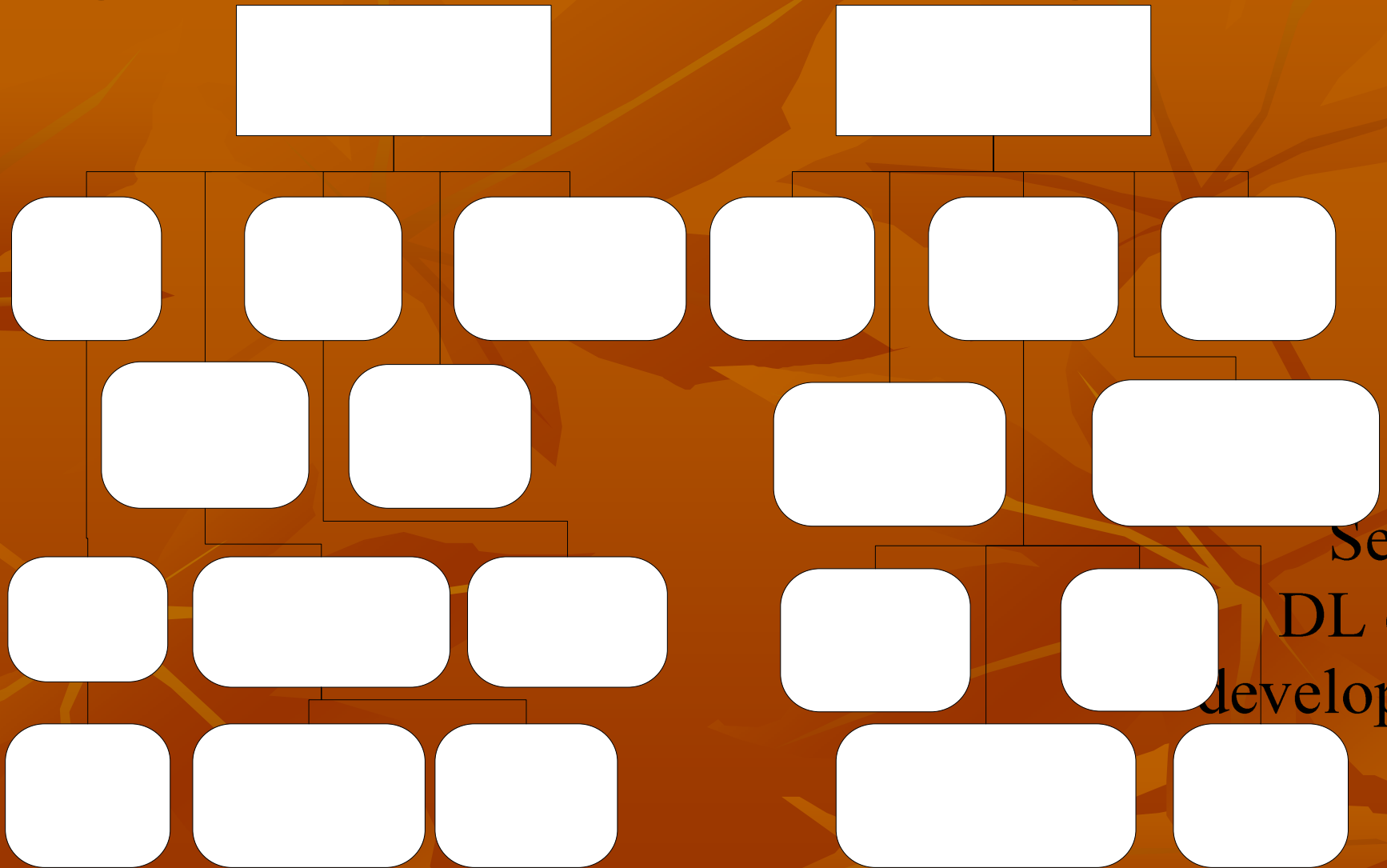
# Conclusion

- **09.4** The Library Associations should *organize a planned and continuous programme of regular training for librarians, users and administrators at all levels*. The importance of networking and access to other information sources should be included in the training programmes. They should also *help and cooperate to organize users' training programmes*. They should *aware the library professionals, users and administrators about freedom of information (FOI)*
  - The Associations should *advocate for modernization with a thorough change and modification in the curriculum of Library and Information Science education at certificate, undergraduate (UG) Degree, and Post Graduate (PG) levels*.

# Conclusion

- The Library Associations should demand that *a percentage (at least 1%-2%) of the total library budget should be earmarked for training of the library staff.*
- The Library Associations should *advocate for better pay and status of the library professionals in the changed scenario.*
- 
- *The goals and procedures of the functions of the Library Associations should be reviewed and updated every year according the need of the situation*

# Digital Library Curricula (UNC and Virginia Tech.)



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# Thanks

# The trend towards e-government

- Popularly known as “electronic government” or “e-government,” this trend has been described as “the use of technology to enhance the access to and delivery of government services to benefit
- citizens, business partners and employees.

# The trend towards e-government

Researchers have observed 6 levels of e-government service:

- (1) Information publishing/dissemination;
- (2) “Official” two-way transactions;
- (3) Multi-purpose portals;
- (4) Portal personalization;
- (5) Clustering of common services; and
- (6) Full integration of e-government services and enterprise transformation.

- The trend toward delivery of government information and services over the Web has taken firm hold in the United States with most federal, state, and local agencies demonstrating a Web presence.

Web presence

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2010

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# WEB 2.0

- The beginnings of the 2.0 designations started with Web 2.0, a term coined by Tim O'Reilly and John Battelle, which was then promoted at O'Reilly's Web 2.0 conference in 2004. For the definitive overview see "What is Web 2.0" [[www.snipurl.com/ictw](http://www.snipurl.com/ictw)],
  - a lengthy essay that includes seven disparate points such as
    - "The Web as Platform,"
    - "Harnessing Collective Intelligence," and
    - "Rich User Experiences."
- Read the whole piece to understand why "there's still a huge amount of disagreement about just what Web 2.0 means, with some people decrying it as a meaningless marketing buzzword, and others accepting it as the new conventional wisdom."

# WEB 2.0

- More concisely, the nebulous Web 2.0 concept represents a second wave of Web techniques to create more interactive and easy-to-use Web sites using new technologies (or using older technologies in a new way).
- The technologies often used in connection with Web 2.0 include Ajax, blogs, APIs, clouds, CSS, RSS, social networking, tagging, and wikis.
- Consider the Web 2.0 disparate group of ideas as a way of differentiating some of the current Web from that of the previous millennium. The 1990s Web included many social aspects and even used some Web 2.0 technologies, but the current crop of Web 2.0 sites combine those technologies in different ways. Specifically, Web 2.0 sites have much more interactivity, with the ability to easily edit and move objects.



# LIBRARY 2.0

- <http://www.infoday.com/online/may06/OnTheNet.shtml>)
- How does all this relate to the library world? Enter Library 2.0, or, in its acronym form, L2. Like Web 2.0, the definitions for L2 are many. Partly a port of Web 2.0 concepts to the library world and partly a desire to rethink and retool library services,
- L2 has a broad focus and, like Web 2.0, has also engendered much debate. For some, L2 incorporates blogs, wikis, instant messaging, RSS, and social networking into a library services setting. Others describe finding new ways of involving patrons by letting them contribute comments, add tags, rate library items, and get involved in other interactive and collaborative activities.

# L2.0

- **The idea of Library 2.0 represents a significant paradigm shift in the way we view library services.**
- **It's about a seamless user experience, where usability, interoperability, and flexibility of library systems is key.**
- **It's about the library being more present in the community through programming, community building (both online and physical), and outreach via technology (IM, screencasting, blogs, wikis, etc.).**
- **It's about allowing user participation through writing reviews and tagging in the catalog and making their voice heard through blogs and wikis.**
- **It's about making the library more transparent through its Web presence and its physical design.**
- **We need to make the library human, ubiquitous, and user-centered. This involves a change in our systems, our Web presence, and our very attitudes.**
- **It will take a lot of work for a library to be completely 2.0, but the idea should inform every decision made at the library.**

# Library 2.0 Theory: Web 2.0 and Its Implications for Libraries

- *It suggests that recent thinking describing the changing Web as "Web 2.0" will have substantial implications for libraries, and recognizes that while these implications keep very close to the history and mission of libraries, they still necessitate a new paradigm for librarianship.*

# L2.0

**A theory for Library 2.0 could be understood to have these four essential elements:**

- **It is user-centered. Users participate in the creation of the content and services they view within the library's web-presence, OPAC, etc. The consumption and creation of content is dynamic, and thus the roles of librarian and user are not always clear.**
- **• It provides a multi-media experience . Both the collections and services of Library 2.0 contain video and audio components. While this is not often cited as a function of Library 2.0, it is here suggested that it should be.**

## L2.0 ...

- **It is socially rich** . The library's web-presence includes users' presences. There are both synchronous (e.g. IM) and asynchronous (e.g. wikis) ways for users to communicate with one another and with librarians.
- **It is communally innovative.** This is perhaps the single most important aspect of Library 2.0. It rests on the foundation of libraries as a community service, but understands that as communities change, libraries must not only change with them, they must allow users to change the library. It seeks to continually change its services, to find new ways to allow communities, not just individuals to seek, find, and utilize information.

## L2.0

**Library 2.0 is not about searching, but finding; not about access, but sharing. Library 2.0 recognizes that human beings do not seek and utilize information as individuals, but as communities. Some examples of the move from Library 1.0 to Library 2.0 include:**

- **Email reference/Q&A pages ---> Chat reference**
- **Text-based tutorials ---> Streaming media tutorials with interactive databases**
- **Email mailing lists, webmasters ---> Blogs, wikis, RSS feeds**
- **Controlled classification schemes ---> Tagging coupled with controlled schemes**
- **OPAC ---> Personalized social network interface**
- **Catalog of largely reliable print and electronic holdings ---> Catalog of reliable and suspect holdings, web-pages, blogs, wikis, etc.**

# Conclusion

It is, finally, also necessary to consider that the Web will continue to change rapidly for some time. Web 2.0 is an early one of many. Libraries must adapt to it, much as they did the Web originally, and must continually adapt for the foreseeable future. In this "perpetual beta" (O'Reilly, 2005), any stability other than the acceptance of instability is insufficient.

# Conclusion

- User studies facilitated the user of the use of books (first law) : as ascertain that every user his/ her book (second law) and every document (book) its user (third law), help in adopting measures for saving the time of the user (fourth law) and assessing the growth of the various types of users (fifth law).



# Thanks

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