Chapter 5: Staff Pattern in Digital Era

5.1 Introduction:

Human resource development is an activity which directs staff towards mission and vision of organization to achieve its goal successfully. Trained manpower provide its goals for maximum individual contribution under proper working relationships and conditions including selection, allocation, utilization and development of employees as well as organization by obtaining maximum productivity. The National Knowledge Commission (2005 – 07) is a landmark in the direction of requirements from the libraries to sustain in future. It has pin-pointedly relates to all aspects of services in all types of libraries and the skills needed for the present day library professionals. In the advanced technological age libraries serves as local information centers of information and learning and local gateways to national and global knowledge. Nagi Reddy and Uma (2009) presented comparative analysis of functions and manpower analysis in detail and pointed out the major issues as related to Staff and Job.

5.2 Traditional Tasks in Libraries:

The traditional libraries have different tasks based on the physical and print media performed manually. Right form the acquisition to dissemination of information and different library and information services to users are based on manual ordering, preparation of on order cards, classification & cataloguing, assigning subjects, headings, sorting & filing of cards, preparation of monthly list of additions, Kardex maintenance, sending reminders, manual issue and return of books, reservations, collection of overdue charges, inter library loans, photocopying of articles, abstracting and indexing, referral service etc. are based on print media, using staff. The nature of the work was purely manual and repetitive in nature and hence more manpower was required at different fronts to work successfully. The main weakness was the services and information provided from the single library’s collection and has many limitations in the process. The collection development was costly a need space to maintain it.

5.3 Modern Function in Libraries:

Since the use of ICT in libraries the nature of tasks or functions of libraries though remains same but the duplication in activities is reduced to bare minimum due to use of different technologies and e - publications. The activities of the libraries are managed by the computers, networks in the libraries and communication system involving computer generated ordering of books, down
loading and uploading of bibliographic details from OCLC or LOC for library, OPAC. Digitization and building metadata, recording of journal issues, remainder generation for non-receipts, electronic journals and databases subscription, circulation unit, management system, managing web resources, emailing of articles and providing Document Delivery Services (EDDS), knowledge mapping by surfing internet, report generation of budgets, maintaining accounts etc. The processes and functions though remained almost same but the automation, made processes fast and in less manpower as computers and communication and other technologies taken care of the tasks.

5.4 Libraries in ICT Era:
There is a need to access the status of libraries in ICT era as ICT had made revolutionary changes in practices and functions. Due to e-learning and e-publishing the education system is also vary from traditional to digital. Since library is heart in almost all educational and academic sectors, there is a need to transform the activities of libraries to suit the need of current education system and support its functions. It is also noticed that there are massive changes in the library system and they are suffering from old pattern to new patterns to new including staff, functions and activities. The brief activities of libraries in ICT era are elaborated in the following paragraphs.

1) **Acquisition Process** (Books and Periodicals). Traditional libraries acquire of books and periodical in print form and have two separate entities. This is due to difference in acquisition process as books have to be procured and then paid the charges where as in journal subscriptions, advance payment is required and then receipt is to be monitor properly received through different vendors. In the ICT and digital era the task of ordering is much easier as compared to traditional. The activities are taken care by computers and communication system as well digital publications where in many subscription models are available. The manpower required to run two units is now possibly managed by a single unit staff as the process of ordering has reduced as well as media of subscription is shifting slowly from print to digital in case of both books and Job. The only issue of fixing the price models of books and journals. In digital era
evaluation, negotiates, communication and qualitative collection development skills are necessary.

2) Processing: The traditional libraries have to manage with cataloguing classification and indexing of collection. In digital libraries the task is managed with developing metadata of collection. The unit entry for digital publication takes care of the activities related to cataloguing and OPAC is instantly developed using software’s. The document data can be downloaded from LC or OCLC databases including class number, indexing terms and subject headings etc. Thus for processing manpower is reduced in digital environment due to elimination of manual work.

3) Reference: The reference service in the traditional library was more prominent and essential with the help of print documents using secondary and tertiary literature, but in digital environment the task of the reference service converted to virtual Reference Desk (VRD) as the digital reference sources are more popular and the task is managed by the chief librarian in addition to his other duties and also freed from manpower. The different services like “Ask Librarian” are also managed in reference service of digital libraries using virtual and internet resources.

4) Circulation: In the traditional libraries circulation is the most prominent activity where most of the manpower is required to manage the unit, but now in electronic and digital environment access to documents is over the network and hence man less circulation is possible, (e-book environment) Single manpower is sufficient in case of hybrid library. Most of the activities are managed by computers. However self-managed circulation desks are now developed using Kiox board. Man less circulation system is used and users can themselves operate the circulation activities. The remote logon facility is also helps in reducing the load on the staff.

5) Stack Maintenance: It is observed that Hybrid Libraries are mostly operated and hence the manpower is required to some extent but since the access to documents in future shift to digital documents then there is no need to deploy maintenance staff to manage the print and e-collection both. Maintenance of e – collection / digital collection is called as “Digital Resource Management” and “Digital Resource Preservation”. These functions need specialized skills.
6) **Information services**: Since the data is available in digital form the users are themselves expert in getting the information directly on line. In case of traditional libraries the information services plays an important role and also need more manpower as all the activities are based on manual exercises. In case of digital collections and use of Internet the literature is available in abundance and more services are provided to user in a limited staff.

7) The administrative work and tasks are also reduced due to e-mail facilities. Even data maintenance is carried out in electronic files. The physical verification is managed through computers. The data is stored in e–files and developed paperless offices. The replies to queries are possible using e–data.

**5.5 Staff Pattern in Digital Era:**

American Library Association in 1947 pointed out the principles for deciding quantum of library staff, which is based on the “The number of staff members in a library should be sufficient to provide consistently efficient service at all hours when the library is open to the readers, and to perform the duties involved in assembling (acquiring), organizing and interpreting the information materials required by the users of the library. The size of the staff for any given library or library system must be based upon the program of service adopted by the library, the population and size of service area, financial support, and more specifically, number of departments, branches and other organized units, the amount of circulation and reference service, the plans of the library buildings, the hours of opening, and other factors”. In short ALA considered the input material services provided, sections and activities carried out in libraries while fixing the library staff.

The efforts made by the different authorities in building or proposing library staff is as under:

1) ALA Developed staff formula, 1947.
2) The formula with minor changes recommended by the library committee of the UGC (1957) and Dr. S. R. Ranganathan was the chairman.
3) Dr. S R Ranganathan staff formula, 1959.
4) Academic library system in the fourth plan period, Dr. S. R. Ranganathan (1965) Revised or presented staff formula.
5) ALA, 1956 and which effective in 1960 presented minimum standards for library staff requirement. This was revised in 1966.

6) Roberts committee (1972) recommended a staff formula for the urban libraries in England.

7) Revise staff formula in a seminar on “work flow in libraries” held under the Indian National Scientific Documentation Centre (INSDOC) and UGC between 21-24.Nov. 1966 at New Delhi.

8) (In UK the) Parry committee and Robbins committee on University Libraries and UK (1967) had emphasized the necessity of development of library personnel.

These were related to the traditional libraries but later emergence of technologies, changes due to ICT. The staff requirement is shifted towards ICT used in libraries.

After analyzing all the staff related studies conducted by organizations / agencies and experts, the investigator identified that the foresaid formulae are not applicable to the present day system due to changes. This is mainly due to the developments and applications of ICT in the library field. The traditional libraries have changed to digital, automated, virtual, internet and intranet libraries and depending on e-resources heavily. Therefore, it is necessary to revise the staff formula for the library in the ICT or digital era.

In ICT and knowledge exploration era, new technologies are introduced in libraries and transferred the traditional libraries usually print versions, to hybrid libraries electronic or digital libraries. The manpower is replaced by equipment’s and library software’s programs like computers and networks. The readers are also advanced and using technologies for searching information as they need right information at the right time from any place. Most of the readers use libraries only for e - books and e - journals, databases and e-resources available in the library on a particular topic. Libraries are connected with consortiums for managing modern practices. The developments in the library are enormous due to different factors discussed earlier and the old patterns of staff are not feasible in present era for sustenance. Libraries need staff of different quality based on the quantum of incoming data and services provided.

Therefore, it is a necessity to revise the staff formula and patterns for developed previously based on the digital contents and e-libraries. The base is now activities carried out to perform the duties involved in assembling, organizing and interpreting the materials required by the program of the library.
5.5.1 Manpower in Traditional Libraries:

A library generally need a spacious space building, and adequate collection comprising of books and other reading materials, but libraries cannot function well without efficient, trained and qualified staff. In the academic sector especially in university libraries the number of staff is more as the manual processing facilities/functions need more manpower. Dr Ranganathan staff formula presented in 1959 is still effective in case of traditional libraries, as it is based on the documents received as per volumes to users and services provided. The deployment of the staff and job description is based on the activity of the unit. In traditional libraries workload is more as the tasks and functions are repeating. The staff, the documents and the users make up the fundamental trinity of a library. The overall hierarchy of library staff in academic library (University Library) is indicated in the following flow chart. The number of Assistant Librarians and library assistants is based on the sections and load of work in the libraries. The designations in the academic libraries are as under

Librarian (Chief of all)
↓
Deputy Librarian (For all section heads)
↓
Assistant Librarian (Supporting to each every section and reporting to Deputy Librarian)
↓
Library Assistant (For involvement of technical work)
↓
Senior Library Attendant Maintenance stack and other activities
↓
Junior Library Attendant
↓
Clerk
↓
Daftry Administrative staff supports to maintenance.
↓
Peon
The qualifications may vary differently for different positions in libraries but depending on the post and job allotment. Librarians and deputy librarians in the university libraries need to have qualifications equivalent to professor (Masters with first class in any discipline and masters with first class in Library and information science), difference may be in amount and kind of experience. A senior professional have to contribution in the professional literature. The skills required to manage the traditional libraries have: Technical skills (Classifying, cataloging, indexing etc.), administrative, managerial and preservation skills, communication skills, etc.

The Library Committee set up by the University Grants Commission in 1957 laid down the staff formula for the university and college libraries in India. The staff formula laid down by the University Grants Commission (Krishan Kumar; 1987; 85) is presented in the flow chart:

5.5.2: Staff / Manpower in Traditional Libraries
In Traditional Library system as discussed in above table, The different positions in academic libraries are: Librarian (1) Deputy Librarian (1) Assistant Librarian (8) Library Assistant (8) Unskilled: Attendant (4) Clerk (1) Accountant (1) has been by Krishan Kumar (1987). Later few more scholars shared their views in terms of staff requirements and patterns.
5.5.3 Staff in Digital Libraries

The present and future and technology is the main cause in considering re-engineering of HRM and HRD. Technologies are forever changing the way that librarians have to serve their patrons, and indications point out that change is continues in nature. The human resource is essential for successful managing libraries in technology-based service, and libraries are challenged to develop and implement new services along with traditional services, often with no increase in staff. The support of electronic services requires manpower with special skill sets. Each library has to develop individual solutions to manage libraries in digital era.

Computer and Telecommunication systems have dramatically revolutionized worldwide library systems. Applications of information technologies in libraries have developed the digital libraries. The role of librarian and functions of libraries are changing due to constant changes. The job descriptions for different positions have also changed. The staff requirement in the digital libraries is presently difficult to analyze as there is no library that is totally digital. All the libraries are in the stage of migration and generally called as hybrid libraries or multimedia libraries since they contain print and digital media both. However the staff formula based on the different programs in libraries where digital data and documents are made available has different pattern than before and also job descriptions and skill sets required are also different in practice.

On the basis of collection, functions, user needs, technology advancements, services provided, initiative for new projects like IR development, database development, data conversion, digitization etc. the investigator designed the new staff formula for “Digital Libraries” especially useful for academic libraries (College and University libraries) is indicated in the following figure.
In digital libraries the desired staff requirement is as under:

Digital: Librarian: (1) Deputy Librarian: (1) Assistant librarian (4), Library Assistant (2), Thus in all 8 staff required in Digital library; however staff for teaching is not considered.
5.5.4 Identifying Staff in Digital Environment:
There is no pattern or formula practiced so far as the manpower is need for digital library, but few efforts made to find the need of the manpower in the digital era. The need of staff is decided on the following factors:

- Identify the trends in the LIS profession including trends in ICT and management.
- Identify the need and expectations of the users form the libraries in relation to the change.
- Consider the mission and vision of the organization as well as financial support from the organization to accept the trends.
- Adapt new skill set required to sustain in the digital era.
- Identify the challenges to be faced by the library professionals and capacity building to face them.
- Describe the job description of staff working at different levels in new era based on activities.

5.5.5 Trends in profession:
While considering theses aspects of the trends in LIS which are changing fast due to advancing technologies, education reform (e-Learning), societal changes, information literate customers, and globalization of ‘everything’ and their impact on librarianship and libraries, is obviously crystal clear. 21st Century librarianship may drastically be different from all previous (traditional) concepts of librarianship. It requires professionals who adapts the potential of technologies, creatively finds appropriate ways to implement technologies into library services, and one who has more diverse – even ‘unconventional’ – skills than ever before. The 21st Century Librarian is a professional who understands the Millennial library customer, and adapt existing services and create new ones to meet their community’s needs, and change the public perception of “library”. The changes are thus mainly due to ICT and other technologies which helped librarians to provide better services to user community in advanced manner.

5.5.6 User Expectations from Libraries:
On the other hand users and their demands are changing as they are using technologies and Internet, e-resources over the mobile. The user expectations from the libraries are different than previous. They need pinpointed information from the vast ocean of knowledge bases on their desk top. The users are technology savvy and also need information services using social media
and web tools. Library professionals are always accepting the changes for providing better services to the users and try to fulfill the vision and mission of the institutes and libraries. But alone libraries desire to accept the trends is not sufficient, the support from management for financial assistance is also required to sustain in the changed environment. If these conditions are favorable then professionals can manage the change easily.

5.5.7 Professional Challenges:

The challenges in the profession are many and vary from library to library depending on the culture. Many scholars have predicted the changes arising due to technologies and management tools, but current challenges arise due to technological impact including e-publications and e-Learning and teaching. The major challenges isolated form the literature browsed are:

- Reach to the customer by providing outreach services, the users in modern era are digital fugitive, digital immigrants, and digital native etc. and to reach to the customer there is a need to follow outreach programs in the profession.
- Need of information literacy and information literate staff is also a sort of challenge who knows themselves the availability of information and different resources.
- It is sometimes predicted that computers and technologies may take over the role of libraries.
- Transition of libraries towards digital content is a major change faced by the librarians and hence there is a need to search the new path to sustain in the profession.
- If technologies and challenges are not accepted at the right time then the values of the libraries may reduce in future digital contents
- To manage the change there is a need to develop personal skill sets to match with the new environment.

Thus the challenges in the profession of library are many but can be managed well using technologies and converting print media to digital with OCR technology.

5.5.8 New Roles in the Profession:

The library professional’s role is changing in the digital era and tuning with the profession there is a need to acquire additional set of skills which suits to the needs of the modern era in addition to the traditional skill sets. The skill sets like technological, internet searching, online searching are necessary in the current digital world. The librarians are moving into dramatically different
roles as new services are implemented in the profession. Technology driving changes are across the entire range of library profession which transforms the responsibilities.

Acquisitions librarians have to deal with "access without ownership" and face issues involving leased licensing for electronic databases, full-text journal article access services and other services that are acquired virtually (Grodzins-Lipow 1997). These new resources arrived with new policies of licensing issues. Librarians have to analyze the information product and after ensuring that electronic product license agreements are appropriate for local circumstances and anticipated patron use patterns. Catalogers are also moving into new roles as they attempt to provide enhanced access to the new resources. They now process not only books, but also CD-ROMs, computer discs, and multi-format items. Catalogers have to provide link to electronic journals and managing various databases. Catalogers today create records that accommodate multiple means of accessing a particular resource. Patrons are coming to expect records that include print holdings, microforms, and direct links to an electronic version of the document item. Records must successfully interact with not only the library OPAC, but also with a growing variety of indexes, full-text services and browsers. In addition to acquiring and processing resources in a variety of new formats, libraries are increasingly involved in the creation of resources. Digital library (a term still being defined) initiatives generate many local-content information resources that require different bibliographic control schemes.

Reference librarians have recently been experiencing double jeopardy. While continuing to serve patrons from service points in the library, many reference librarians are now supporting need of growing clientele of remote-access patrons, and "more demanding, less patient users who have greater expectations" (Rettig 1993). Now patrons often require special support from reference librarians, even if the remote access patrons are using the same (electronic) resources save as the walk-in users. Users submit questions through email and linked web pages require attention from reference staff, and the virtual reference transaction can be more complex and time-consuming than traditional in-library service. As technology advances, reference librarians are increasingly involved as teachers of "information literacy" (Osorio 1997). Many libraries now use their web sites as exclusive platform for electronic patron services. Librarian input is necessary to develop a well-designed web interface and a page-linking structure that facilitates efficient use. Thus,
libraries are faced with the need to effectively apply limited staff resources to meet the growing number of technology-driven challenges.

These facts have forced library professionals in rethinking existing staffing patterns and assignments, recruiting new staff to change the mix of skill sets and the use of creative supervision which can help libraries to develop solutions that solve current problems but are flexible enough to accommodate future changes. The staff pattern based on these factors the researcher has presented the staff pattern and qualities required to face changes in academic libraries especially university and colleges. To sustain in the profession in the digital era are library professionals have to undertake different activities:

- Conduct continuous assessment (Users and information both) • Be service oriented (innovative and value added services) • Employ marketing strategy (marketing and revenue generation)

The skills required in the profession at the present technological era needs:

- Cloud Computing
- Customer or user oriented services
- Crowdsourcing
- Digital Discovery
- Open Innovation
- Social Networking
- Learn and re-learn
- Use constantly changing technology
- Master in devising new ways to find Information (Data gathering)
- Efficiently problem solver
- Effectively communication
- Create strategic collaborations

All these skills help in building strong sustenance in the profession for the professionals.

Staff for university Library this in the digital era is summarized as under:

Digital Acquisition (DA) = 1 Professional to manage acquisition and periodicals unit
Digital Processing and Asset Management (DPAM) = 1 Professional and 1 Attendant (Circulation monitoring)

Digital Library Services (DLS) = 1 Professional

Reference Desk (RD) = 1 Professional

Information Products Development (Database and IR) (IPD) =1 Professional

Digitalization Project (DP) = 1 Technical or semi professional

Library Hours 7 AM to 10PM = 2 (Attendants)

ICT staff (Network, internet and Web page Developing) = 1 Professional

The qualifications required for the librarian, deputy librarian and assistant librarian need the masters in any discipline and masters in LIS in addition to this technological background are essential. To manage libraries in ICT era there is a need to have additional education which supports to managing and re-engineer libraries. The skill set is also required in addition to traditional skills which are also essential but need to have additional skills like technological skills, networking skills, negotiation and evaluation skills, ICT skills, Internet skills, Information retrieval and searching skills, digitization skills etc.

In addition to this database manager, system administrator, network manager positions are is to be added to manage the ICT and suit the trends. Francis (1997) deduced the staff formula keeping in view the ICT Era, and framed a standard for calculating the total number of professionals. In the changed ICT environment, it is found that adoption of the available standards and formulae need to be revised. The publishing technology has completely revolutionized the earlier concept of the number of documents. Now, a single CD-ROM can occupy lakhs of pages of information. Hence, the calculation of quantum of staff based on the number of library documents has become irrelevant. A formula giving weightage to the components of users, documents and budget for calculating the total number of professional by Francis (1997) in his communication presented a formula noted below.

\[ S = U + D + B \]

where;
S = Total number of professional staff
U = User component
D = Document component
B = Budget component

\( (UG \times 1) + (PG \times 2) + (RS \times 3) + (OM \times 1) + (IM \times 10) \)

\[ U = \frac{\text{------------------}}{100} \]

Where;
UG = Under Graduate students
PG = Post Graduate students
RS = Research Scholars
OM = Other members including External Members
IM = Institutional Members

\( (PD \times 1) + (CD \times 50) + (MF \times 5) \)

\[ D = \frac{\text{--------------------}}{20,000} \]

where;
PD = Printed Documents
CD = CD-ROMs
MF = Micro Film/Fiche and other micro documents

Library Budget excluding salary and inclusive of equipment budget

\[ B = \frac{\text{---------------------------------------------------}}{10,00,000} \]

This formula is not specifying the meanings for the figures used for division. The staff in a university library is given below by the researcher after analyzing different formulae and patterns or models.

**Staff** = **total users** (U) + **Intake of documents** (D) + **Other budget** (B)

Where;
S = Total number of professional staff  
U = User component  
D = Document component  
B = Budget component

\[(UG \times 3) + (PG \times 2) + (RS \times 3) + (OM \times 1) + (IM \times 1)\]

\[U = \frac{\text{---------------------------------------}}{100}\]

Where,

UG = Under Graduate students for three years  
PG = Post Graduate students for two years  
RS = Research Scholars for minimum three years  
OM = other members including External Members for one year  
IM = Institutional Members for the period one year

This may give % of users in the campus using library facility

For calculating documents intake the formula used can be

\[(PD \times 1) + (CD \times A) + (MF \times B)\]

\[D = \frac{\text{---------------------------------------}}{20,000}\]

Where,

PD = Printed Documents  
CD = CD-ROMs  
MF = Micro Film/Fiche and other micro documents  
Where A denotes documents in CD  
Where B is frames in per Fiche contain documents.

For need of library budget
B = Total Budget of Organization X 10% (AICTE prescribed)

The number of professional staff thus arrived may be grouped into two categories, i.e., UGC Cadre and Non-UGC Cadre. The number of staff needed in each category may be arrived at considering the qualifications, level of technical competency, experience, etc. required to perform the various functions in a university library. It is suggested that a Minimum of 50 percent of the total professional staff may be in the UGC Cadre.

- **Staff for university Library**

Digital Acquisition (DA) = 1 Professional Manage Acquisition and Periodicals unit

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**5.6 Staff required to Manage Change:**
The transformation in LIS impacted directly on different elements including staff. The staff required in ICT and Digital systems are being implemented in LIS but other conditions favorable need new manpower with different skill set to manage new era and designated librarian as ICT manager, system administrator, database manager, network manager etc. These new positions are to be introduced or possibly existing staff is to be retrained for few activities. Nagi Reddy and Uma (2009) also predicted that the ratio of the manpower in the TL: DL is 1:3. The authors have suggested the following structure of the staff in digital era for university libraries.
5.7. Role of Library Staff in Digital era:
Sharma (2007) has defined the role of librarians in the digital era including skills and competency sets for effective management of DLs. The author opined that the treasure of information available on internet and in digital resource media changed the practices of librarians. Whereas in case of traditional libraries the access points such as, library catalogues as well as library collections are in print based and their management is by and large manual. This needs the skill set for managing monotonous media and the maintenance skills, management skills, collection development skills, cataloguing and classification skills are the need of the present and future era.

But in case of automated and digital libraries access points and housekeeping operations are computerized and called automated libraries. The graphic records are still print-on-paper publication. The access point as well as the graphic records are in electronic/digital form when these electronic/digital libraries are connected via various networks, particularly the internet, this is called virtual library. The role of librarians in such conditions is changed to manage digital data. The competencies needed for managing digital collection relates to different environment and librarian in addition to being library manager, also act as collection development, technical processor, reference librarian, taking care of information quality. The librarian’s role becomes Information Manager and has to meet information need of the user and have to manage and deliver appropriate information services. Librarians become Information adviser / instructor and ensure that user / staff knows how to access relevant sources of information (literacy). Library professionals have to get them trained and act as system & networking administrator for delivery of information to their users in an appropriate manner and design appropriate systems.

Skills, knowledge, competencies required for LIS Professionals:

These are discussed by Mishra (2009) in his study on Professional information skills and elaborated following skills.

- Knowledge management: skill covers information architecture, ICT skills, technical (traditional) skills etc.
• Subject expertise: skill covers collection management; collection description, technical (traditional) skills etc.

• Information technology: skill covers design, application, systems, user support (problem solving) etc.

• **Information** Service development: skill covers user information analysis, survey, ISB, service impact analysis, planning and evaluation, promotion and marketing

Apart from these skills library professionals need following Generic skills: which covers:

• Project management: skill covers people management, research skills, bids and proposals etc.

• Critical skills: covers thinking, analysis, problem solving, research etc.

• Leadership: skill covers generic management, communication skills, strategic management, people skills, and financial skills etc.

• Promotion and marketing skills: presentation skills, communication skills

**Knowledge and other Skills:** Covers knowledge resources (books, journals, i.e. resources, Internet) Teleological facilities and resources (computer, online catalogues, websites, LANs file servers etc.) Financial resources (Budget) Human resources (Skills for manpower training)

Competencies required in LIS professionals are:

- Acceptance of change.
- Knowledge of user interaction with knowledge resources.
- Provide quality service.
- Be adoptive, flexible and resistant.
- Be resourceful
- Possess excellent communication skills, constantly update personal knowledge base by keeping in touch with the latest development.
- Create awareness among the users, make them accept the changes
- Be an information management strategist, etc.

Technical and technological Knowledge required for libraries to work more efficiently in ICT era are:
- Operating systems - Windows, UNIX, LINUX.
- World processing, Graphics, Spread sheet & Presentations.
- Database Management Systems including the skills in Bibliographic Database Management Systems.
- General purpose programming, Networking
- Web page Development and Content Management
- Information Retrieval software for online, CD-ROM and Internet.
- Library software packages, acquaintances with Digital Library Tools.

The basic goal of library and information profession has always been to provide access to information to those who need it. The activities realizing this goal have evolved and transformed over the years. This includes available technology and need evolving information society. Information activities have been guided by the developments in the field of storage, presentation and archiving of knowledge, collection development and organization of knowledge, information explosion and computers in information retrieval. Librarian and information professional involved in information gathering, storage, retrieval and dissemination on one hand and on the other hand the computer specialists who supports the library and informational professionals in this endeavor. For successful implementation of digital library, it is essential that LIS professionals are to be trained and possess requisite knowledge and skills in this respect.

**Summary:**

The world of information is undergoing rapid change. Development of information technology is playing a crucial role in restructuring of the libraries. Shift from human dependent operations to machine dependency, mechanization (data processing) to knowledge processing, stand-alone system to network computing, local LAN to wireless access protocol systems have developed. Document centered information to user (Access) centered information; print media to electronic (Access) media, data capture methods, human to machine oriented. Library automating (in-house) to web-enabled services (WAN Access), online information retrieval to CD-ROM Databases, to Internet are the new avenues in the profession. These prolonged shift in application of innovative IT to library and information profession can be attributed to the changes emanated in the last two decades.
The role of librarian has changed in the digital library era. It is, therefore pertinent on the part of the librarian to acquire new skills required for developing and managing the digital libraries. The library and information professionals are required to acquire such knowledge and skills as the library is one of the highly IT influenced service profession. The empowerment of library and information professionals with IT skills is aimed at providing services that are expected from the clientele in the new environment. Digital age has brought a tremendous change in the way information is stored and accessed. This has brought about a change in the concept of librarian, their collection and services. Many new terms viz. Digital Librarian, Libraries without walls, virtual libraries, are emerging to describe the libraries of digital age.

The information professional of the future need to be user oriented and maintain a focus on the user and not become distracted by the knowledge resources. Secondly, as a professional have to deliver information to the user. Thirdly, act as team players and be cooperative and collaborative in profession. Librarians are increasingly going to participate in and be critical members of user teams. This is related to the need for increased analysis, synthesis, and packaging of information on behalf of users, and becomes responsible for the information-gathering function for the team.

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• Sharma P L (2007) “Changing Role of Librarians in Digital Library Era and need of professional skills, Efficiency and competency.”