

Paper Presented at the National Conference on Re-Engineering of Library and Information Services (RE-LIS), February 1&2, 2008, held at PSG Institute of Management, Coimbatore, India

Re-engineering the Management of Human Resources in University Libraries

A. T. Francis and S. Humayoon Kabir

Abstract

Information and Communication Technology application in university libraries poses several issues to be addressed, including those related to the management of human resources. As part of a study on the technology management of university libraries in Kerala, the aspect of human resources was also evaluated. A radical re-design in the prevailing system of management is advocated by the study. As a key component in the proper application of modern technologies in university libraries, human resources play a vital role in the effectiveness of digital information services. It was also found that the principles of business process re-engineering can be applied effectively to re-define the human resource management system for adapting to the changed circumstances. The necessity of developing human resources in different cadres and also with stress on modern digital technologies is established. The paper provides a detailed account of the study and findings and also identified the thrust areas needed for the development of human resources.

Keywords

Academic libraries, Human resource management, Technology Management in Libraries, Business Process Re-engineering, Re-defining libraries, University libraries in Kerala

1. INTRODUCTION

A library is a public institution or establishment charged with the care of a collection of books, the duty of making them accessible to those who require the use of them and the task of converting every person in its neighbourhood into a habitual library goer and reader of books (Ranganathan, 1940). In his book, Five Laws of Library Science, Ranganathan (1957) observed on the functioning of libraries as follows: "Even those working in the same sector did not show much evidence of team work. There was no evidence of an overall view. All these factors tended to hide the common point of emergence of the trends in the different sectors. Consequently, what could be seen was only an aggregate diverse practice without an integral relation. It looked as if future developments were totally unpredictable. It all appeared to be a matter of rule of thumb, and severely empirical". This observation is relevant also to most of the libraries in India. In the era of modern ICT also, the management style of our libraries need thorough modification to fulfill the vision of Dr. S.R. Ranganathan. That is, our libraries should be able to convert the potential users into actual users by appropriate management. The real goal of the libraries and librarians is to make all the published works of humankind accessible to everyone, no matter where they are in the world. Many in the library community agree that universal access to all knowledge could stand as one of the greatest achievements of humankind (Kahle, 2005). Several decades back, Dr. S.R. Ranganathan (1956) highlighted the necessity of mechanization of library routine as follows. "Perhaps, the most over-worked sector in the mechanization of library routine is that the literature search. The Laws of Library Science demand that every reader should

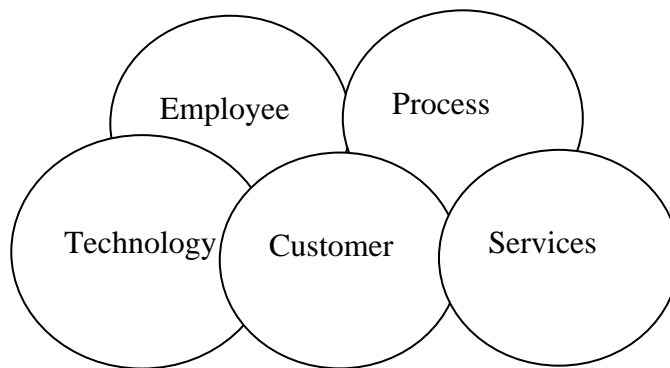
be supplied with all his documents, exactly, exhaustively, and expeditiously. This is the demand of first Four Laws. But, the Fifth Law puts a hurdle in the way. When the number of documents – particularly micro – documents – increases beyond a certain measure, the fulfillment of the other Laws becomes difficult”. Ranganathan’s Five Laws of Library Science serve as guiding principles for assessing the usefulness of IT in library and information services (Kaur, 2000).

2 RE-ENGINEERING AND RE-DEFINING

Aiming at improving organisational performance through the effective use of production capability and technology, operations strategy such as total quality management (TQM), business process re-engineering (BPR), just in time (JIT), benchmarking, performance measurement and many others are commonly used (Ahmed and Montagno, 1996). Standing out in the literature is TQM and BPR approaches. TQM is based on the principle of continuous improvement of products and processes aimed at continually satisfying customer expectations regarding quality, cost, delivery and service.

The term BPR was first introduced by Michael Hammer in 1990 at a Harvard Business Review article, “Re-engineering Work: Don’t Automate Obliterate”. Davenport also has done some pioneering contributions in this philosophy. Michael Hammer and James Champy also have considered as main proponents of the re-engineering (Hammer and Champy, 1994). Michael Hammer and James Champy have defined re-engineering in the book, “Re-engineering the Corporation” as, “Re-engineering is the fundamental rethinking and redesign of business processes to achieve dramatic improvements in critical, contemporary measures of performance, such as cost, quality, service and speed” (Hammer and Champy, 1993). Increases in consumer requirements for both product and service efficiency and effectiveness have resulted in BPR.

Figure 1: Re-engineering Cycle

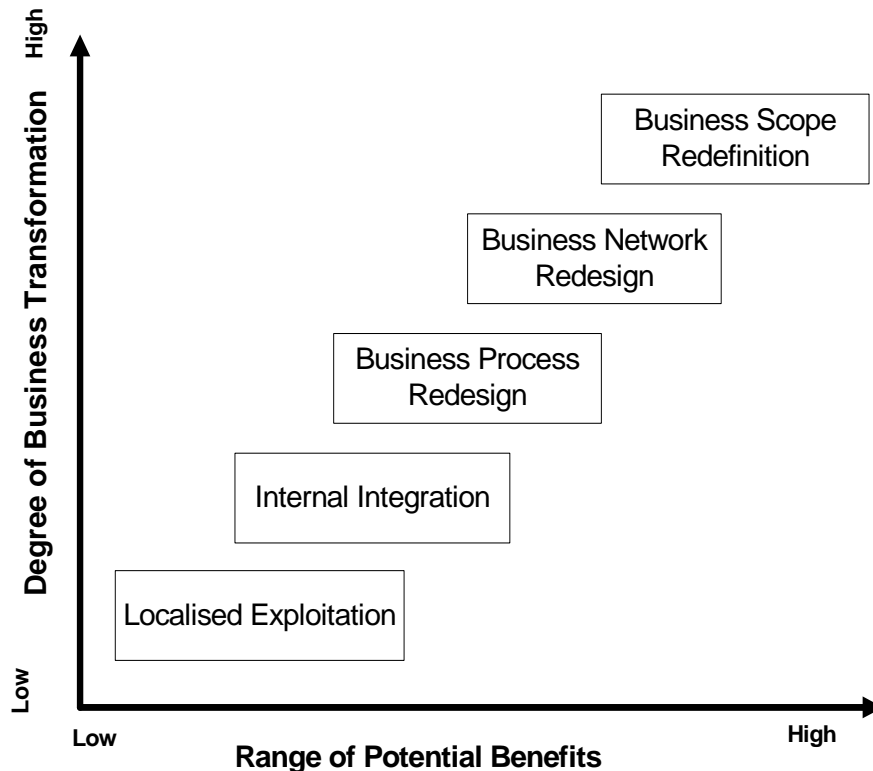


Al-Mashari and Zairi (2000) suggest that re-engineering of business processes involves changes in people (behaviour and culture), processes and technology. Re-engineering is a rapid and radical re-designing of processes, services, policies and the organizational structure of an organization. It can be defined as an art of changing an organization’s way of thinking and consequently, of doing things in a radical way. The ultimate aim of re-engineering management is to provide customer satisfaction by efficient and effective services, and to lay down a set of effective and efficient processes for the organization. The activities which constitute business process management can be

grouped into three categories, that is, process design, process execution and process monitoring. It has the three key target areas; (i). Customer Friendly; (ii). Effectiveness; and (iii). Efficiency. In order for BPR to succeed, staff and management must be motivated to achieve the vision and goals of BPR (Rause and Watson, 1994).

The levels of organisational transformation can be depicted as a ladder from localised exploited to the business scope re-definition as given in the figure 2.

Figure 2:- Levels of Organisational Transformation



3 HUMAN RESOURCE REQUIREMENTS OF MODERN LIBRARIES

Rapid technological changes and advances require an ever more adaptive and sophisticated workforce. There is a pressing need to cultivate a new workforce of electronic resources librarians, information managers, system integrators, and the training and education providers to conceive, build, and implement a wide array of user-oriented applications using innovative information technology (Rajyalakshmi, 2004). The profession demands for leaders who are not only doers, but also effective communicators (Sornam and Nagarajan, 2004). Dubey (2003) stated that in the ever changing technological environment, especially one in which library services could be expected to become increasingly ‘digital’, it is extremely important for librarians to keep themselves well informed concerning new products and new developments in the field. He also underlined that the libraries and professionals need to focus on studying the impact of the new technologies on the creation, storage and distribution of knowledge. The IFLA/FAIFE World Report (2005) points out that the modern librarians should develop

skills and competencies not only in content management but also in ICT aspects like Internet protocols and control software, filtering tools, etc.

The vision for re-engineered HR in the future is that all human resource services should be available instantaneously, on demand, at the place most convenient to an employee: his or her own workstation, anywhere in the world with radical redesign of workflow processes, using information systems technology, networked with the help of computers and allied technology and with people competent and empowered to do the whole job for their customers (or themselves) at their first point of contact with a customer (or the information system), to achieve dramatic results for improvements in quality and productivity (Gaur, 2003). Cleve (1995) establishes that proper emphasis on human resource management is highly crucial in the handling the process of change in a library. The reactions of the people in an organization are key determinants of success in *re-engineering* the library and information services.

Library and information schools in developing countries need to revise their curricula acquire and develop appropriate training facilities and teaching expertise in IT methods of information management in the changing context (Neelameghan, 1993).

4 NEED AND PURPOSE OF THE STUDY

Seven universities are functioning in Kerala. They are University of Kerala (UOK), Thiruvananthapuram; Mahatma Gandhi University (MGU), Kottayam; University of Calicut (UOC), Malappuram; Kannur University (KU), Kannur; Cochin University of Science and Technology (CUSAT), Ernakulam; Sree Sankaracharya University of Sanskrit (SSUS), Kaladi; and Kerala Agricultural University (KAU), Thrissur. Among these, first four universities are mainly affiliating universities. Kerala Agricultural University, Cochin University and Sree Sankaracharya University are basically non-affiliating universities. Out of seven, six universities have permanent buildings for their libraries. All university libraries have adopted the modern ICTs in varied degrees and automated the in-house operations using library automation software. Four libraries have the access to UGC Infonet and all are providing substantial information services in digital format. At the same time, exploiting the potentialities of ICTs, web technologies, full-text digitization, etc., all the libraries have to advance further.

Experiences of several service institutions revealed that the Business Process Re-engineering can be applied to manage the modern technologies effectively. Hence, a study was undertaken to re-define the entire functioning of university libraries in Kerala. As it was also identified that the human resources management (HRM) needs special attention to reap the maximum benefits of ICTs, the present study is focused on HRM issues. The scope was to determine and analyse various aspects of re-engineering and re-defining personnel functions of the university libraries and to suggest measures for improving the information services to the end users.

5 REVIEW OF RELATED LITERATURE

Although most of the university libraries in India have played significant role in the evaluation of the use of new information technologies, it is a recognized fact that there is a significant difference between the evaluation and implementation of these technologies. Organizational changes are necessary in order to utilize effectively the new information resources. While considering the issue of re-defining and re-engineering libraries, it is better to note the remark of McGahan (2004) in a “*Harvard Business Review*” article entitled ‘How industries change’. She argues strongly that to develop strategy and make appropriate investments in innovation within the organisation requires a real understanding of the nature of change within the industry. She suggests, however, four distinctive trajectories of change – radical, progressive, creative, and intermediating. It can be seen that libraries and information services are operating in an environment between intermediating and radical change. In the context of modern ICT, all the conventional activities of libraries such as acquisition, classification, cataloguing, maintenance, preservation, binding, weeding out, documentation and information services, circulation, inter library services; serials control, etc. have to be re-defined. Many of these activities have lost relevance in its traditional definition and its application. Most of the libraries have overweighed with the digital form of information resources in comparison with the other forms such as paper, micro film, micro fiche, tapes, etc. The nature and preference of the users also have changed. Instead of physical presence of the users, many users approach the libraries for services through remote access, via World Wide Web or some other ICT means such as telephone, mobile phone, fax, e-mail, etc. In this context, in order to achieve management efficiency, service effectiveness and user satisfaction, re-defining the activities and processes of the libraries and their re-engineering is advocated.

Wilson (1998) clearly explains the need for business process re-engineering (or redesign) in academic libraries in the digital age. The transformation from the handling of artefacts to the handling of electronic sources may be effected with maximum benefit to the information user. He advocates a special role of Information Officer with high degree of competencies and built-in intelligence in the reliable and robust integrated systems. He argued that in the changed scenario, the academic library and its role, and the roles of academic librarians will need to be redesigned. As the new management approach of re-defining and re-engineering has been tried in many American and European organizations, libraries also have made use of this approach. Gaur (2002) has made a detailed study on the applicability of re-engineering in management libraries in India. He further stressed this need in his book; “Re-engineering Library and Information Services” described several such examples (Gaur, 2003).

A survey study based on 400 academic journal publishers conducted by the Association of Learned and Professional Society Publishers (ALPS, 2006) reveals that ninety percent of the journals are now available online. This underlined the need for acquiring skills for the management of information in digital format. Based on an Italian experience on one-stop shops, Ongaro (2004) advocates the Process management style and approach characterised by the focus on business processes that can provide an important contribution to the management of public sector organizations. This experiment about the reduction of “red tape” for businesses shows that one-stop shops for businesses have been created with the purpose of easing businesses of most of their administrative burden by identifying a single interface for issuing business licences

between the public administration and the entrepreneur and by increasing co-ordination among public entities involved in regulatory management.

Schäffler (2004) reported the results of a *re-engineering* process at the Bayerische Staatsbibliothek (Bavarian State *Library*) in Munich, Germany, the central regional *library* of the State of Bavaria and one of the largest academic research *libraries* in Europe with local, regional and supra-regional responsibilities. The introduction of digital resources has not only had considerable impact on the role of *libraries* in the information society, but it has also had a remarkable effect on back office procedures, i.e. on the way the *library* is organised. In order to cope up with the new situation, the library utilized the principles of *re-engineering* and change management. Chen (2006) reported that the perceptions of library employees concerning the use of routines to solve problems, the consideration of innovative ideas, the nature of discussions held, the development of new routines, the existence and nature of organizational change, the support for any such change, and the use of information technologies are the key components of library communication and behaviour which provide a pathway to effective library organizational change and stressed the need for professional development activities for positive and effective change. Based on the case study experience of the British Library, Brindley (2006) establishes the need for developing people and ensure the right mix of skills in them. The information professionals of the future need to be outward-going people, with really sharp business skills and a huge understanding of technology and the implications of the Internet. Loughman, Fleck and Snipes (2000) identified several "people factors" to be addressed. It is evident that Libraries and Information Services are being heavily transformed by technology, especially, the ICTs. Consequently, the profession has to adapt to meet their users' changing needs and growing expectations. Chia (2001) gives a detailed account of the integrated library development achieved in Singapore by re-defining and re-engineering the activities and services. They stressed also the aspect of professional development by establishing an NLB Institute to provide training. The Information Services Division (ISD), University of Salford, UK implemented a project of re-engineering its business process re-engineering. As a learning organization, the major areas and focus of the project, CRISP (Customer Resolution and Information Services Project) issues of change management, increasing the effectiveness of customer relationships, etc. (Jeal, 2005). Griffith University Library, Australia stressed the need for participation in all decision-making processes for 'continuous improvement' of work processes (Smith, 2001).

In the context of technology dependence of the society, Drucker (1994) has remarked that the knowledge in the knowledge society has to be highly specialized to be productive implies two new requirements: Knowledge workers work in *teams*; and Knowledge workers have to have access to an *organization* which, in most cases, means that knowledge workers have to be *employees* of an organization. An earlier study in Kerala reveals that librarians consider I.T. not as a means to reduce their workload, but as a device to render effective information service to patrons. It stresses the need for participatory style of management to achieve maximum benefit out of the application of IT in libraries. If people who are associated with automation – either who operate technology or who are served with it, respond badly to it, the anticipated effectiveness of using technology will not be achieved. The attitudes people hold towards a proposed technological change determine their response to the change. Failure to take these

attitudes into account and deal with them appropriately leads very often to catastrophe and even organizational collapse (Somanathan Nair, 1997, 1998). The Expert Committee of the Government of Kerala, made several valid recommendations to revamp the libraries. The Committee recommended as follows: “The Committee considers it desirable to give the college librarians, academic status (non-vocation) and bring librarian also under the definition of ‘teacher’ as done in Madurai, Madras and other University Acts. ... Librarianship is a highly complex profession warranting specialized and technical knowledge of various sorts like personnel administration / financial management and different bibliographical techniques. Librarians also require higher academic qualifications like other heads of the departments of the college as recommended by the UGC” (Kerala, Expert Committee on College Libraries, 1994). Considering the academic role of the librarians, Soundararajan (1979) established the necessity for re-designating qualified librarians as Professors and Assistant Professors.

According to the Special Libraries Association (SLA), as we move towards the millennium, library and information professionals are facing at least three major paradigm shifts; (i). “*transition from paper to electronic media*” (ii). “*increasing demand for accountability*”; and (iii). “*new forms of work organization*” (SLA, 2003). In order to fulfill this key information role, librarians require two main types of competencies: Professional competencies and Personal competencies. Gadre and Satalkar (1997) and Saha (1998) suggested the use of psychological and behavioural techniques in libraries to establish good inter personal relations.

5.1 Convergence of LIS and IT

Convergence and the subsequent emergence of hybrid form of libraries are the creation of modern ICT and such libraries are common now. Hybrid libraries are described as ‘the continuum between the conventional and digital library, where electronic and paper-based information sources are used alongside each other’ (Pinfield et al., 1998). When seeking to define convergence, Field (2001) explains that multiple meanings can be attached to the phrase, including organizational or formal convergence involving management structures, and operational or informal convergence whereby functions or operations of the service are changed or merged. Operational convergence between the two library and computing disciplines offers the following possibilities: collaboration between the two sets of staff on information services and development projects; joint training of users in information technology skills; joint enquiry desk services and potential multi-skilling for staff; increased liaison with academic departments.

Wilson and Halpin (2006) reported the result of a case study done in academic LIS departments of four British Universities and assessed the strong indication of changing role and duties of academic library staff evolving as new hybrid information professionals. The convergence of ICT and LIS has necessitated re-defining many of the roles of the conventional librarian as digital librarian, especially in the context of Digital Information Systems (DIS). The need for such transformation has been strongly advocated by Gopinath (1996) and Sreenivasulu (2000). Foster (2006) reported that many universities in UK and USA are in the line of integrating libraries and computer services. He quoted the pioneering initiatives done by Columbia University and Carnegie

Mellon University using the concept of the 'Chief Information Officer' role that can be traced back to the early 1980s. However, it became much more widely adopted in the UK in the late 1980s and first half of the 1990s. This was encouraged in part by the influential Follett Committee Report (1993) published in 1993, which pushed UK university libraries to re-evaluate their changing roles and how they work with information technology.

6 COLLECTION OF DATA AND ANALYSIS

The study was mainly based on the data collected from all library professionals of seven university libraries in Kerala by using two types of structured and pre-tested questionnaires, one for the University Librarians and the second for other library professionals. This data has been supplemented by observation of working of the libraries, discussions and interviews, review of literature, etc. As the concept of re-engineering and re-defining is comparatively new to the library and information field, its applications have been studied in other fields through literature search. Data was also collected from Internet and CD databases other than printed books and journals. The data was collected during the period of January 2006 to July 2007. Out of total 169 questionnaires served to the library professionals, 159 questionnaires were returned, that is 94 percent. All the seven questionnaires served to the University Librarians were also returned after filled.

The personnel in university libraries in Kerala can be classified into three categories as Professionals; Semi-Professionals; and Non-Professionals. Four out of seven universities have almost implemented UGC Scale to the professionals. Four types of semi-professionals, that is, Library Assistants, Technical Assistants, Reference Assistants and Assistant Librarian Grade II, are available in the university libraries in Kerala. In the case of non-professionals, different types of staff such as, Assistant Registrar, Administrative officer, Administrative Assistant, Section Officer, Assistant, Office Superintendent, Stenographer, Typist, Clerical Assistant, Photostat Operator, Artist, Library Attender, Library Assistant, Library Boy, Library Girl, Gardner, Library Cleaner, Security Guard, Sweeper, Cleaner, Peon, Class IV, etc., are prevailing in different libraries. Wide disparity prevails in the number, status, etc. of the staff sanctioned to the libraries. The details of different types of staff sanctioned to the universities libraries are given in Tables 1&2.

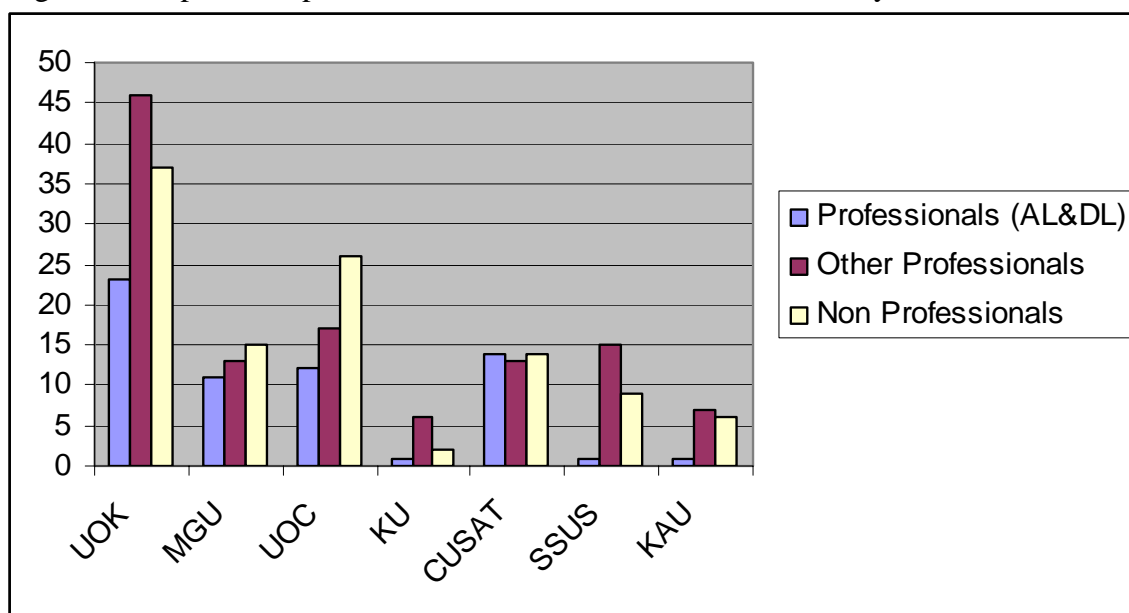
	Librarian	Librarian (vacant or not)	Professionals (AL & DL)	Other Professionals	Total Professionals	Non Professionals	Total staff
UOK	01	Vacant	23	46	70	37	107
MGU	01	In-Position	11	13	25	15	40
UOC	01	Vacant	12	17	30	26	56
KU	01	Vacant	01	06	08	02	10
CUSAT	01	Vacant	14	13	28	14	42
SSUS	00	NA	01	15	16	09	25
KAU	01	Vacant	01	07	09	06	15

Designation	Qualifications	Scale of pay (pre-revised)	Nature of Recruitment
-------------	----------------	----------------------------	-----------------------

Professionals in UGC Cadre	As per UGC	As per UGC	As per UGC
Library Assistant (LA)	Degree + BLISc	5000 – 8150	Direct Recruitment
Technical Assistant (TA)	Degree + BLISc	5800 – 9425	By promotion from LA
Reference Assistant (RA)	Degree + BLISc	6500-10550	By promotion from TA
Assistant Librarian (AL) Gr.II	Degree + BLISc	6675-10550	By promotion from RA

Note:- (1). In two universities, the LA, TA and RA are designated as Professional Assistant Gr. II, Professional Assistant Gr. I and Junior Librarian respectively. Here, the scale of pay of RA/Junior Librarian is 7200-11400 and no post of AL Gr. II is prevailing. (2). Due to the delay in implementing uniform staff pattern, scale of pay of LA and TA are remains in two universities as 4600-8000 and 5500-9075 respectively and in one university that of RA is as 6675-10550.

Figure 3: Graphical Representation of Sanctioned Staff in University Libraries in Kerala



Government of India, many state governments and national regulatory bodies in education, like UGC, ICAR, AICTE, NCERT, etc. have already recognized the teaching and scientific role of librarians. Most of the national research organizations in India like DRDO, CSIR, ISRO, etc. have given the job title for librarians as “Scientist”. Some universities also have the job title similar to that of their teachers, such as “Lecturer”, “Assistant Professor”, “Associate Professor”, “Professor”, etc. The Government of Andhra Pradesh has issued orders to classify the university and college librarians as stated before (Andhra Pradesh, 2003). The Karnataka State College Librarian's Association has reported that the Karnataka State Government Cabinet has approved that that the Librarians as Teachers (Karnataka State College Librarian's Association, 2006). Many agricultural universities and conventional universities in India have the system of involving librarians in direct teaching. They teach curriculum based topics such as research methodology, information sources, information retrieval techniques, ICT, search engines, style and format of writing articles, books, theses, etc. Another recent study in KAU re-iterated the need and effectiveness of teaching-training role of librarians. It revealed the prevalence of strong relationship between the user orientation and use of information resources, particularly in the case of digital resources. Because of this, the teachers and students have shown special interest to absorb knowledge on modern

methods of information retrieval. The involvement of librarians as teachers and trainers helped to create over all impact in improving the performance of the libraries and library services (Francis, Razak and Kabir, 2006). At the same time, most of the recommendations of the Joy Committee to revamp the libraries in Kerala are still in the cold storage.

Adequate administrative and financial powers coupled with due social status will help to perform the librarian efficiently and effectively. But general understanding and social status of the librarians in Kerala is highly confusing. It is a general notion here that librarians are social service persons who work for literacy and there is no other serious work in libraries. Such librarians find in public libraries are common every where in the state and their standing number is more than ten thousand. Since their service is generally part time and honorary, it is quite natural that they will leave the sector generally on receiving a fruitful employment after a few months or years service. So, if we count the number of persons served the sector so far in the state will be several thousands. Such librarians did not need any minimum qualifications and they are getting only an honorarium. Though they are not professionals, on literacy movement and social service angle these honorary public librarians have done invaluable contribution. But, general people are confused to identify the professional librarians and their role.

Even after the implementation of UGC Scale to the librarians, common people think that librarians are low paid professionals and they did not have any major qualifications. Another reason to this notion is that, in colleges and government departments, promotion to the cadre of librarians is prevailing from the peons, attenders, and other Class IV staff. Even though this promotion is made as Librarian Grade IV, most people believe them almost at par with Librarians in universities. Recently, the government has reduced the qualifications of Librarian Grade III from BLISc to CLISc for internal candidates. Such actions and the predominant system of honorary librarians in Kerala have established a different social status. So, measures are urgently needed to identify, classify and establish due status to each category of library professional working in different sectors. Otherwise, the librarians ranging from honorary public librarians to the librarians in universities can not impact effectively in their respective institutions in particular and the society in general. But, it is contrary that in one of its order, the UGC itself has described the librarians as administrative personnel. Though the librarians in the UGC Cadre get salary at par with teachers their impact and efficient functioning in the society reducing because of these reasons. The Fifth Pay Commission of the Government of India and the recent Pay Commission of Kerala has stressed the importance of libraries and librarians. But, on implementation stage, lot of hurdles have already raised by the administrative machinery. The National Knowledge Commission has come with proactive recommendations and actions in identifying the value of libraries and role of librarians in the modern society.

6.1 Confusing Designations and Status of Librarians

The designations, qualifications, scale of pay, status, etc. of library professionals and semi-professionals in different government departments, institutions, agencies, etc. in Kerala State are not comparable. Hence, utter confusion and misunderstanding prevail among administrators, academics, teachers and students of schools, colleges and

universities, government officials and the general public. This is adversely affecting the library system and its service effectiveness. Details of different cadres of library positions prevailing in Kerala are depicted in table 3.

Table 3: Designations, qualifications, scale of pay, etc. of librarians in Kerala		
Designations	Scale of Pay*	Qualifications and mode of appointment
Librarian (UGC) (in Universities)	16400-22400	As per UGC Scheme; Recruitment.
Librarian (UGC) (in Colleges)	8000-13500	MLISc + NET; Promotion / recruitment
Librarian Gr. I (in Colleges)	7200-11400	MLISc +NET; Promotion / recruitment
Librarian Gr. I (in Govt. Depts..)	7200-11400	BLISc; Promotion / recruitment
Librarian Gr. II (in Colleges)	5800 – 9425	BLISc; Promotion / recruitment
Librarian Gr. II (in Govt. Depts.)	5800 – 9425	BLISc; Promotion / recruitment
Librarian Gr. III (in Colleges)	5000 – 8150	BLISc; Promotion / recruitment
Librarian Gr. IV (in Colleges)	3590 – 5400	CLISc; Promotion / recruitment
Librarian Gr. IV (in Govt. Depts.)	3590 – 5400	CLISc; Promotion / recruitment
Librarian (Village Libraries under the Kerala State Library Council)	Honorarium Rs.500/- to 750/-	No minimum qualifications. Training in LIS desirable
Deputy Librarian (in Universities)	12000-18300	As per UGC Scheme.
Asst. Librarian Sel.Gr.(UGC)(in utys.)	12000-18300	As per UGC Scheme.
Asst. Librarian Sr. Gr. (UGC) (in Utys.)	10000-15200	As per UGC Scheme.
Asst. Librarian (UGC) (in Utys.)	8000-13500	MLISc +NET, Promotion / recruitment
Asst. Librarian Gr.II (in Utys.)	6675-10550	Degree + BLISc; Promotion/recruitment
Asst. Librarian (in few agencies)	3590 – 5400	CLISc; Promotion / recruitment
Junior Librarian (JL) (in Utys.)	7200-11400	Degree + BLISc; Promotion from PA1
Professional Assistant I (PA1) (in Utys.)	5800 – 9425	Degree + BLISc; Promotion from PA2
Professional Assistant (PA2) (in Utys.)	5000 – 8150	Degree + BLISc; Direct recruitment
Reference Assistant (RA) (in Utys.)	6675-10550	Degree + BLISc; Promotion from TA
Technical Assistant (TA) (in Utys.)	5800 – 9425	Degree + BLISc; Promotion from LA
Library Assistant (LA) (in Utys.)	5000 – 8150	Degree + BLISc; Direct recruitment
Library Assistant (in Colleges)	2610 – 3680	VIIth Standard
* As the UGC Scales of Pay are under revision, pre-revised scales are given for the posts in the Non-UGC Cadre for easy comparison		

Since the schools, even the higher secondary schools, coming under the regulation and control of Government of Kerala did not have any qualified librarians and the school libraries are managed by other subject teachers. Hence the library functioning is dependent on the extra time and willingness the other Subject Teacher in-Charge of the Library have. This system could not provide even essential services and hence students are not able to inculcate reading habit from the childhood and feel the real importance of libraries and librarians. Ultimately, this adversely affects the quality not only of school education but also the higher education and research.

6.2 Knowledge Level of professionals

The knowledge level of professionals is extremely important in rendering quality service to the users. Library and Information Managers are these days deluged with advice as to know to acquire and organize learning resources and satisfy the complex and ever increasing information needs of the users (Raina, 2004). Changes in library tasks, policies and practices call for a new knowledge base and skills among the professionals. These include, technology handling abilities, managerial skills and a better understanding of copyright and legal issues (Parekh, 2003). Tables 4 provides a detailed account of knowledge level of professionals on selected latest technologies related to knowledge

management and the tables 5 and 6 give the response of library professionals on their experience and training needs. Table 7 shows the areas need special attention in the UGC/ICAR Regulations.

Item	Response about familiarity							
	Concept		Operation		Both		Not familiar	
	No	Percent	No	Percent	No	Percent	No	Percent
Computer			55	34.6	104	65.4		
CD/DVD	18	11.3	110	69.2	31	19.5		
CD writer	101	63.5	39	24.5	19	11.9		
DVD writer	102	64.2	49	30.8	8	5.0		
Multimedia	49	30.8	66	41.5	36	22.6	8	5.0
Net working	34	21.4	70	44.0	27	17.0	28	17.6
LAN			102	64.2	27	17.0	30	18.9
Server	72	45.3	38	23.9	26	16.4	33	20.8
CD Server	85	53.5	3	1.9	22	13.8	49	30.8
Handy cam	35	22.0	1	0.6	27	17.0	96	60.4
Digital camera	74	46.5	32	20.1	23	14.5	30	18.9
Bar-code scanner	34	21.4	98	61.6	27	17.0		
Image scanner	34	21.4	98	61.6	27	17.0		
Color Laser Printer	101	63.5	47	29.6	11	6.9		
Fax	54	34.0	58	36.5	20	12.6	27	17.0
Dial Up connection	68	42.8	64	40.3	27	17.0	30	18.9
ISDN	110	69.2	28	17.6	21	13.2		0.0
Leased Line	76	47.8			46	28.9	37	23.3
V-SAT	70	44.0			19	11.9	70	44.0
Broad band	69	43.4	33	20.8	27	17.0	30	18.9
Band width	102	64.2			27	17.0	30	18.9
Modem	102	64.2			27	17.0	30	18.9
Web Designing	102	64.2			27	17.0	30	18.9
Web Hosting	102	64.2			27	17.0	30	18.9
Dynamic and static IP address	102	64.2			27	17.0	30	18.9
Optical Fibre Technology	102	64.2			27	17.0	30	18.9
Over head Projector	102	64.2			27	17.0	30	18.9
LCD	97	61.0	35	22.0	27	17.0		
Photocopier	34	21.4	35	22.0	90	56.6		
Multi Function Devices	69	43.4	33	20.8	27	17.0	30	18.9
Video Conferencing	102	64.2		0.0	27	17.0	30	18.9

Activities	Frequency	Percent
Circulation	140	88.05
Reference	128	80.53
Maintenance	120	75.47
Acquisition	96	60.38

Cataloguing	89	55.97
Classification	83	52.20
Serial Control	76	47.80
Photocopy	74	46.54
Data entry	50	31.45
Online services	36	22.64
Database development & maintenance	22	13.84
Indexing	20	12.58
General Administration	13	8.18
Network Administration	10	6.29
Data Security	8	5.03
Web Designing	5	3.14
Software Development	5	3.14
Others	4	2.52
Web hosting and Site Maintenance	3	1.89

Figure 4 Activity wise Experience of Library Professionals

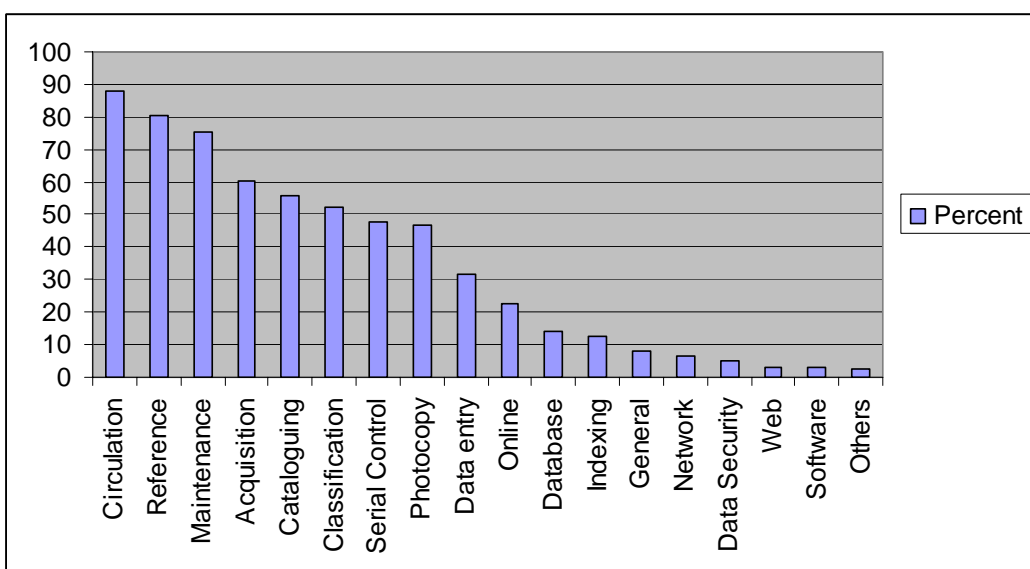


Table 6. Percentage of respondents according to the need for their area for training

Area	No	Percent
Digital library	134	84.28
Web designing	133	83.65
Database Development	131	82.39
Hardware maintenance	128	80.50
Web hosting and maintenance	126	79.25
Network Administration	120	75.47
Internet and Online Search	98	61.64
Library Automation	79	49.69

Software development	79	49.69
Teaching techniques / Information Literacy skills	44	27.67
Personnel management	33	20.75
Institutional Repositories	28	17.61
General management	25	15.72
Communication and Inter Personal skills	24	15.09
Public relations	22	13.84
Classification	15	9.43
Indexing	15	9.43
Cataloguing	8	5.03

Table 7 Area need stress or amendments in the UGC/ICAR guidelines on library staff		
Area	No	Percent
Compulsory training for library staff below UGC cadre should be provided	147	92.45
Full academic/ faculty status and parity to professionals in UGC Cadre	144	90.57
Experience specified for the post of University Librarian need to be revised	98	61.63
Designation of librarians should be the same as that of other faculty staff in the University	73	45.91
Experience specified for the post of University Librarian may be total 18 years in University/research libraries	63	39.62
Experience specified for the post of University Librarian may be total 18 years in University/research libraries and the incumbent should be in the cadre of Deputy Librarian or higher	35	22.01

7 FINDINGS:-

1. In the context of the modern ICTs, a radical re-design in the human resource management is advocated by the study.
2. 48-88% of the professionals have experience in conventional activities such as serials control, classification, cataloguing, acquisition, maintenance, reference and circulation. 13-31% has experience in activities like Indexing, Database development, online services and Data entry. But, only 2-6% has experience in operations like Web hosting and Site Maintenance (3 persons), software development (4 persons), Web designing (5 persons), data security (8 persons) and network administration (10 persons). On personal interview, many of them have shared their lack of confidence in handling the operations independently.
3. This is a clear indication that, professionals need rigorous in-service training in modern ICT topics. Thorough re-structuring and frequent revision of LIS curriculum is an immediate need which will help to inject essential ICT skills in the coming generation of professionals. The present structure of existing LIS courses, UGC refresher courses and other training programmes are proved to be inadequate to meet the requirements and modern challenges of knowledge management. As there is no regular system to train the professionals in the Non-UGC Cadre, wide gap prevails in this respect.

4. In order to exploit the possibilities of modern technologies, library professionals stressed the need to acquire in-depth technical knowledge on ICTs, digital libraries, institutional repositories, multi-lingual aspects, Web based information management, general management skills, communication and public relation, psychology, presentation and teaching skills, etc.
5. The management of modern ICTs in all libraries is functionally vested with few professionals and the others have either not shown enough interest in these aspects or they have been automatically sidelined because of lack of training and confidence in handling such systems.
6. The university libraries in Kerala did not have comparable staff strength. The total number of staff varies from 10 to 107 and some libraries are facing acute shortage of staff and this affect the quality and effectiveness of information services.
7. All posts of University Librarian in Kerala, except in one University, are vacant for several years. This situation causes lack proper leadership, dynamism, continuity, etc. and this adversely affects proper adoption of ICTs and implementation of modernization projects of university libraries.
8. Kerala State is experiencing dearth of professionals with 18 years experience in the UGC cadre to consider for appointment as University Librarian. As the UGC scheme has not been implemented properly for librarians in Kerala and the retirement age is still continuing as 55 years, outside candidates are not interested to come to Kerala.
9. The existing rules for appointment, promotion, etc. of library staff are not scientific and hence it creates many litigation and staff dissatisfaction. As ratio promotion exists for professionals in Non-UGC Cadre, this is mainly based on chance rather than performance or experience.
10. The nomenclature of designations of library staff prevails in Kerala State, created utter confusion and misunderstanding among the general public and even the educated persons regarding different cadres of library professionals and their status.
11. Majority of professionals consider that business process re-engineering can be applied to re-define the human resources management of libraries in the context of modern ICTs.

8 RECOMMENDATIONS:-

1. Mandatory clauses should be included in the UGC/ICAR Regulations for the establishment, development and maintenance of libraries with the required minimum infrastructure and other standard facilities in terms of documents, services, staff, fund, etc. in all universities, colleges and similar institutions of higher education in the country, including those in medicine and allied sciences, veterinary science, agriculture, engineering, education, law, etc. Penal clauses should also be there to enforce this by way of withdrawal of affiliation or approval, fine, etc.
2. The College Libraries should be re-named as the Department of Library and Information Services and made them as the Statutory Teaching Departments and required number of staff in the UGC and Non-UGC cadres should be ensured.
3. In the context that 86 percent of the post of University Librarian in Kerala State is vacant and this situation is continuing for long period not only in Kerala but all over the country, the UGC/ICAR should issue strict directions to fill up these posts immediately.

4. Since the experience criteria fixed by UGC for the post of University Librarian is 18 or 15 years experience in the post of college librarian or deputy librarian respectively, this is leading to dearth of enough qualified and competent candidates. Hence, these norms should be amended as 18 years in any professional or semi-professional cadre in university or research libraries. The PhD should be made as the compulsory qualification for the post of University Librarian.
5. Refresher courses for the teachers in library science/librarians should give more stress on modern ICT topics like library automation and networking, hardware and software, development of digital libraries and institutional repositories, website construction, web hosting and maintenance, web server and security aspects, knowledge classification, retrieval and management of information in web environment, etc. Weightage should be given for practical sessions and hands on learning rather than the theoretical presentations. It will be ideal if good libraries with all modern facilities and technologies have been identified by UGC or universities for conducting such courses.
6. Exchanging of teachers/librarians between universities within the country and also across the countries for training and visit may be arranged and more number of scholarships and funds may be instituted for such programmes.
7. As the library professionals in the Non-UGC Cadre are actively involved in the academic activities of the library, professional development of these people are equally important for the efficient and effective functioning of the libraries. In order to catch and train in the beginning, the UGC may introduce compulsory refresher courses of minimum one week duration in each promotion period for them.
8. It is also recommended to implement a Flexible Complementing Scheme of Career Advancement as prevailing in DRDO, CSIR, ISRO, etc.; with suitable modification to avoid the personal influence on assessment process; for the Semi-Professionals employed in the libraries of the universities and colleges with BLISc as the minimum recruitment qualification.
9. As an advisory body to the government, the Higher Education Council shall effectively interfere in the formulation and implementation of standard and uniform policies, regulations and guidelines for the establishment and maintenance of quality library and information services in colleges and universities. The Council also may recommend the government for optimum number of staff in all university libraries.
10. The government should implement the UGC or equivalent Central Government Scheme in strict sense for librarians in all universities and colleges, including those in the fields of law, medical, paramedical, engineering, poly technique, etc. in Kerala. There should be minimum one professional in the UGC faculty cadre to head the library department in (i) all constituent/affiliated colleges; (ii) all department libraries of the teaching departments of the universities; and also in (iii) all divisions/departments of the university libraries.
11. As the recommendations of the V.P. Joy Committee are scientific and highly necessary for renovating the library system in Kerala, implementation of them is to be considered on priority basis.
12. It is recommended that the LIS courses have to be thoroughly restructured with compulsory internship and accreditation system.
13. A uniform staff policy is essential for all libraries in the universities in Kerala. Most of the libraries could not implement the UGC-Scheme itself in strict sense. Many litigation and court cases on appointment, seniority, and promotion, other staff

management aspects, etc. are created because of lack of proper statutes and rules in this regard. Improper or non-implementation of UGC Career Advancement Scheme such as quality improvement and assessment based promotion, retirement age, academic and faculty status for the librarians, lack of scientific promotion scheme for the professionals in the Non-UGC cadre, etc. are the personnel aspects those need immediate attention of the Higher Education Council and Government of Kerala in order to revamp the university libraries. While the educational and research institutions like central and many of the state universities, IITs, IIMs, IISc, research institutions under DRDO, CSIR, ISRO, DAE, Government of Kerala, etc. have classified the library professionals as faculty/scientists, the Government of Kerala and universities in Kerala grouped them as non-teaching and non-academic staff. Since this has demoralizing effect among the professionals, orders are required to classify the library professionals as academic and teaching faculty with equal designations and status. In order have a uniform and comparable staff pattern and also to clear the confusion prevailing in the society, the designations of the library professionals may be re-designated as listed in table: 5.

Table 5: Proposed designations/pay scales for librarians in Colleges & Universities in Kerala			
Existing Designations	Proposed Designations	Scale of Pay (Pre-revised)	Universities
<i>Non UGC Cadre:-</i>			
Librarian Grade IV	Junior Technical Asst. (JTA)	3590 – 5400	Colleges
Librarian Grade III	Technical Asst. (TA)	5000 – 8150	Colleges
Librarian Grade II	Senior Technical Asst. (STA)	5800 – 9425	Colleges
Librarian Grade I	Technical Officer II (TO-II)	7200 -11400	Colleges
Senior Librarian	Technical Officer I (TO-I)	7800 -12975	Colleges
Library / Prof. Asst.	Technical Asst. (TA)	5000 – 8150	All Utys.
Technical / Prof. Asst. II	Senior Technical Asst. (STA)	5800 – 9425	All Utys.
Reference Asst./ Jr. Librarian	Technical Officer II (TO-II)	7200-11400	All Utys.
Asst. Librarian Gr. II / Reference Asst (Hr.Gr.)	Technical Officer I (TO-I)	7800 -12975	All Utys.
Asst. Librarian Gr. I	Senior Technical Officer (STO)	10000-15150	All Utys.
<i>UGC Cadre:-</i>			
Librarian	Lecturer & College Librarian (LCL)	8000-13500	Colleges
Assistant Librarian	Asst. Professor & Asst. Librarian	8000-13500	Agrl. Utys.
Deputy Librarian	Assoc. Professor& Dy. Librarian	12000-18300	Agrl. Utys.
Assistant Librarian	Lecturer & Asst. Librarian (LAL)	8000-13500	Other Utys.
Deputy Librarian	Reader & Deputy Librarian (RDL)	12000-18300	Other Utys.
University Librarian	Professor& University Librarian (PUL)	16400-22400	All Utys.

9 CONCLUSION

Though the Education Commission headed by Dr. S. Radhakrishnan and many other high level committees and authorities had reiterated the prominent role of libraries and library professionals, at the implementation stage, many universities and colleges, especially those controlled by the state governments, are miserably failed to establish library and information system of required standard and provide proper services. HRM issues in libraries had worsened the situation. This in turn has affected the quality of education and research. Hence, immediate corrective action is needed to revamp the documentation and information services in colleges and universities.

REFERENCES

1. Ahmed, N.U. and Montagno, R.V. (1996). Operations strategy and organizational performance: an empirical study. *International Journal of Operations & Production Management*. 16(5), 41-53.
2. Al-Mashari, M., Irani, Z. and Zairi, M. (2001), Business process reengineering: a survey of international experience. *Business Process Management Journal*. 7(5), 437-455.
3. ALPS (The Association of Learned and Professional Society Publishers) (2006). <http://www.alpsp.org/default.htm>. News release: <http://www.alpsp.org/publications/pub13.htm>. (Accessed on 04-07-2006).
4. Andhra Pradesh (2003). Order of Government of Andhra Pradesh. G.O.Ms.No.35 dated 16-06-2003.
5. Brindley, Lynne (2006). Re-defining the library. *Library Hi Tech*. 24(4), 484-495.
6. Chia, Christopher (2001). Transformation of libraries in Singapore. *Library Review*. 50(7/8), 343-348.
7. Cleeve, Marigold (1995). The library is for turning: human resource management and re-engineering. *Library Management*. 16(4), 37-41.
8. Drucker, Peter F. (1994). Knowledge Work and Knowledge Society: the social transformations of this century. The 1994 Edwin L. Godkin Lecture. Harvard University's John F. Kennedy School of Government on May 4, 1994. [http://books.google.com/books?id=kDuEFn2hSw4C&pg=PA146&lpg=PA124&dq=Drucker+\(1994\).+Knowledge+Work+and+Knowledge+Society:+the+social+transformations+of+this+century.+The+1994+Edwin+L.+Godkin+Lecture&ie=ISO-8859-1&output=html&sig=iyjZllZrAUKAwXwZbopc8c2S6lc](http://books.google.com/books?id=kDuEFn2hSw4C&pg=PA146&lpg=PA124&dq=Drucker+(1994).+Knowledge+Work+and+Knowledge+Society:+the+social+transformations+of+this+century.+The+1994+Edwin+L.+Godkin+Lecture&ie=ISO-8859-1&output=html&sig=iyjZllZrAUKAwXwZbopc8c2S6lc) (Accessed on 15-05-2006).
9. Dubey, Yogendra P. (2003). New challenges in information management and e-learning in the age of globalization: issues and opportunities. *Library Herald*. 41(2), 81-89.
10. Field, C.D. (2001). Theory and Practice: Reflections on Convergence in United Kingdom Universities, *Liber Quarterly*. 11(3), 267-89. http://webdoc.gwdg.de/edoc/aw/liber/lq-3-01/liber_quarterly_jg-11-2001-heft3.pdf. (Accessed on 12-10-2006).
11. Follett Committee Report (1993). <http://www.ukoln.ac.uk/services/papers/follett/report>. (Accessed on 10-19-2006).

12. Foster, Allan (2006). Convergence Counselling: Integration of IT Departments and Libraries. <http://www.freepint.com/issues/211206.htm>. (Accessed on 22-12-2006).
13. Francis, A.T., Razak, Abdul C. and Kabir, Humayoon. (2006). Role of Information Professionals as Teachers and Trainers in Agricultural Education: an experience of the Kerala Agricultural University, India. In *Preparing Information Professionals for Leadership in the New Age: Asia-Pacific Conference on Library and Information Education and Practice (A-LIEP), Singapore, April 3-6, 2006, Proceedings, edited by C. Khoo, D. Singh and A.S. Chaudhry*. Singapore: School of Communication & Information, Nanyang Technological University, 642-644.
14. Gadre, Asha and Satalkar, Vasudha (1997). Transactional Analysis (TA) and Library Profession: Egogram of an ideal librarian. *ILA Bulletin*. 32(3-4), 14-17.
15. Gaur, Ramesh C. (2003). Re-engineering library and information services. Mumbai: Allied Publishers. 304 p.
16. Gopinath, M.A. (1996), Education for digital information system: a courseware. In *Digital Libraries: Dynamic Storehouse of Digital Information, Papers presented at the SIS 1996; 15th Annual Convention and Conference, Bangalore, January 18-20 1996, edited by N.M. Malwad, N.M., T.B. Rajasekahr, I.K. Ravichandra, and N.V. Satyanarayana, N.V.* New Delhi: New Age International Publishers, 210-215.
17. Hammer, Michael and Champy, James A. (1993). Reengineering the Corporation: a manifesto for business revolution. New York: Harper Business Books, ISBN 0887306403. viii, 231p.
18. IFLA/FAIFE (2005). Libraries, National Security, Freedom of Information Laws and Social Responsibilities, IFLA/ FAIFE World Report 2005, World Report Series Vol. V. Edited by Susanne Seidelin and Stuart Hamilton. Copenhagen: IFLA/FAIFE Office. <http://www.ifla.org/faife/report/FAIFE-WorldReport2005.pdf>. 406p. (Accessed on 10-05-2006).
19. Jeal, Yvette (2005). Re-Engineering customer services: University of Salford Information Services Division. *New Library World*; 2005. 106(7/8), 352-362.
20. Karnataka State College Librarian's Association (KSCLA) (2006). <http://geo.yahoo.com/serv?s=97490479&grpId=13132242&grpSpId=1600079640&msgId=669&stime=1153825321> (Accessed on 16-08-2006).
21. Kaur, Amritpal (2000). Five Laws: their relevance in Information Technology environment. *ILA Bulletin*. 2000(1), 24-27.
22. Kerala, Expert Committee on College Libraries, 1994, Convener: V.P. Joy. Report. Trivandrum, 1994.
23. Loughman, T.P., Fleck, R.A. and Snipes, R. (2000). A cross-disciplinary model for improved information systems analysis. *Industrial Management & Data Systems*. 100(8), 359-369.
24. McGahan, A.M. (2004). How industries change. *Harvard Business Review*. 82(10), 87-94.

25. Neelameghan, A. (1993). International and Regional Information Systems and Networks: examples of recent experiences in developing countries. In *Seminar on Library Networks in India, Bangalore, 12-13 August 1993*, edited by IK Ravichandra Rao. Paper/page A. Bangalore: DRTC-INSDOC, 1993.
26. Ongaro, E. (2004). Process management in the public sector: the experience of one-stop shops in Italy. *The International Journal of Public Sector Management*. 17(1), 81-107.
27. Parekh, Harsha (2003). The digital movement: challenges and opportunities for librarians. *ISALIC Bulletin* 48 (1), 2003, 46-52.
28. Pinfield, S. et al. (1998). Realizing the Hybrid Library. *D-Lib Magazine*, October 1998, <http://www.dlib.org/dlib/october1998/10pinfield.html>. (Accessed on 29-10-2005).
29. Raina, Roshan Lal (2004). Conducting Continuing Professional Development Programmes (CPDPs) for LIS professionals in the area of quality management: an approach at IIML. *ILA Bulletin* 2004, 40(4), 5-8.
30. Rajyalakshmi, D. (2004). Information professionals – knowledge skills, for information management. *ILA Bulletin* 2004, 40(3), 5-12.
31. Ranganathan, S.R. (1940). Reference service and bibliography, v. 1, Madras, Madras Library Association, 1940, 25p. (Source: Library manual; Krishan Kumar. Vikas Publications).
32. Ranganathan, S.R. (1956). Mechanisation of library service. *IASLIC Bulletin*, 1(2), 12-17.
33. Ranganathan, S.R. (1957). Five laws of Library Science, 2nd ed. Reprint in 1988. Bangalore: Sarada Ranganathan Endowment for Library Science, 449p.
34. Rause, A. and Watson, D. (1994). Some Classic Theories of Organizations-Change, and their Implications for Business Process Innovation and Reengineering. *Computer Science and Technology*. 54, 513-523.
35. Saha, Karuna (1998). Interpersonal relations in Indian organizations and strategy and improving human responses: a study based on library organization. *ILA Bulletin*. 34(1-2), 15-19.
36. Schäffler, H. (2004). How to organise the digital library: reengineering and change management in the Bayerische Staatsbibliothek, Munich. *Library Hi Tech*. 22 (4), 340 – 346.
37. SLA (Special Libraries Association) (2003). Competencies for Information Professionals of the 21st Century Revised edition, June 2003. http://www.sla.org/PDFs/Competencies2003_revised.pdf. (Accessed on 10-10-2006).
38. Smith, G. (2001). Aiming for continuous improvement: performance measurement in re-engineered technical services. *Library Collections, Acquisitions, and Technical Services*. 25(1) Spring, 81-92.
39. Somanathan Nair, K.P. (1997). A study of the attitude of the librarians in Kerala towards the use of Information Technology and information activities: PhD Thesis. Trivandrum: Department of Library and Information Science, University of Kerala. 396p.

40. Somanathan Nair, K.P. (1998). SATTIT: a scale to measure professional librarians' attitude towards Information Technology. *IASLIC Bulletin*. 43(2). 1998, 59-66.
41. Sornam, Ally A. and Nagarajan (2004). Personality patterns of college librarians: a study. *ILA Bulletin*. 40(2), 5-10.
42. Soundararajan, K.R. (1979). Standards for library staff in college libraries. *In XXV All India Library Conference, Trivandrum, 14-18 May 1979, Working Papers. Symposium I: Formulation of necessary standards for different types of libraries in India, Paper 12, 8 p.* Trivandrum: Indian Library Association.
43. Sreenivasulu, V. (2000). The role of a digital librarian in the management of Digital Information Systems (DIS). *The Electronic Library* Volume 18(1), 12-20.
44. Wilson, T.D. (1998). Redesigning the university library in the digital age. *Journal of Documentation*, Vol. 54(1), 15-27.
45. Wilson, Kerry M. and Halpin, Eddie (2006). Convergence and professional identity in the academic library. *Journal of Librarianship and Information Science*. 38(2), 79-91.

THE AUTHORS



A. T. Francis (e-mail: francisaloor@yahoo.com) is the Assistant Librarian & Head, Library, College of Horticulture, Kerala Agricultural University, Thrissur – 680 656, India



Dr. S. Humayoon Kabir (e-mail: kabir@cusat.ac.in) is Assistant Librarian & Head, Technical Processing Division, University Library, Cochin University of Science and Technology, Ernakulam – 682 022, India